||JAI SRI GURUDEV||

S J C INSTITUTE OF TECHNOLOGY

B B ROAD, CHICKBALLAPUR-562101, KARNATAKA STATE

SELF ASSESSMENT REPORT (Tier-II)

UNDER GRADUATE PROGRAM

IN

AERONAUTICAL ENGINEERING

Submitted to

National Board of Accreditation

NBCC Place, 4th Floor East Tower, Bhisham Pitamah
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PART A

Institutional Information

PART A: Institutional Information

1. Name and Address of the Institution:

S J C Institute of Technology (SJCIT),
P B No.20, B B Road,
Chickballapur – 562101,
Karnataka
E-mail: principal@sjcit.ac.in website: www.sjcit.ac.in
Phone No: - 08156 263181/82/83
Mobile: - 9880373629
Fax: - 08156 263180

2. Name and Address of the Affiliating University:

Visvesvaraya Technological University (VTU),
Jnana Sangama, Santibastawad Road,
Machhe, Belagavi – 590018,
Karnataka
E-mail:- registrar@vtu.ac.in website: www.vtu.ac.in
Phone No: - 0831 2498100
Fax: - 0831 2405467

3. Year of establishment of the Institution: 1986

4. Type of the Institution:

University	☐
Deemed University	☐
Government Aided	☐
Autonomous	☐
Affiliated	☑

5. Ownership Status:

Central Government	☐	State Government	☐
Government Aided	☐	Self - Financing	☑
Trust	☑	Society	☐
Section 25 Company	☐	Any Other (Please specify)	☐

Provide Details: - **Sri Adichunchanagiri Shikshana Trust®,**
Sri Adichunchanagiri Kshetra, Adichunchanagiri
Nagamangala Taluk, Mandya District-571811, Karnataka

6. Other Academic Institutions of the Trust/Society/Company etc., if any:

Sri Adichunchanagiri Shikshana Trust ® is running more than 485 educational institutions across Karnataka, Tamilnadu and New Delhi states. The institutions comprise of Primary and High Schools, Pre-University Colleges, Degree colleges, Technical and Medical Institutions, Nursing Institutions, Architectural Institutions etc., The Institutions are predominantly established in the rural parts of Karnataka State. A partial list of educations Institutions run by the trust is presented in the following Table A 6.

Name of the Institution(s)	Year of Establishment	Programs of Study	Location
Sri Kalabyraveshwara Sanskrit College, Sri Kshethra	1974	Degree and Certificate programs in Sanskrit	Sri Kshethra. Mandya District, Karnataka State
SAC Arts, Commerce & Science College	1976	B.A. B.Com B.Sc BBM Post-graduation courses in arts, commerce and science	Mandya District, Karnataka State and other 14 degree colleges in different districts of Karnataka
Adichunchanagiri Institute of Technology	1980	B,E, M.Tech Ph.D M.B.A.	Chikkamagaluru district, Karnataka State
Sri Adichunchanagiri College of Education	1980	B.Ed	Hassan District, Karnataka State and other 4 colleges in different districts of Karnataka
Sri Adichunchanagri Industrial Training Centre	1984	ITI	Kolar district, Karnataka State and 4other colleges in other districts of Karnataka
Adichunchanagiri Institute of Medical Sciences	1986	M.B.B.S. And P.G.	Mandya District, Karnataka State

G V K Polytechnic	1986	Diploma	Chitradurga district, Karnataka and 4 other colleges in other districts of Karnataka
Sri Kalabyaraweshwara Ayurvedic Medical College	1996	BAMS/MD/MS and Ayurveda	Bengaluru, Karnataka State
S J B Institute of Technology	2001	B,E, M.Tech Ph.D M.B.A.	Bengaluru, Karnataka State
B G S Institute of Technology	2005	B,E, M.Tech M.B.A.	Mandya District, Karnataka State
B G S B.P.Ed. College	2005	B. P.Ed	Chikkaballapura district, Karnataka State
B G S Global Institute of Medical Sciences	2013	M.B.B.S. and P.G.	Bengaluru, Karnataka State
S J B School of Architecture & Planning – Bangalore	2014	B.Arch	Bengaluru, Karnataka State
B G S School of Architecture & Planning, Bangalore	2015	B.Arch	Bengaluru, Karnataka State

Table A 6: Partial list of educational institutions run by the trust

7. Details of all the programs being offered by the institution under consideration:

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
Bachelor of Engineering in Civil Engineering	UG	1986	1986	40	Yes	120	Not accredited	14/09 /2018	16/09 /2018	Yes	4
Master of Technology in Structural Engineering	PG	2010	2010	18	No	18	Eligible but not applied	-	-	No	2
Master of Technology in Infrastructure Engineering and Management	PG	2014	2014	18	No	18	Eligible but not applied	-	-	No	2
Bachelor of Engineering in Mechanical Engineering	UG	1986	1986	40	Yes	60	Granted accreditation for 3 years for the period	2018	2022	0	4
Bachelor of Engineering In Electronics and Communication Engineering	UG	1986	1986	40	Yes	180	Granted accreditation for 3 years for the period	2018	2022	0	4

Table A.7: List of Programs offered by the Institution

Sanctioned Intake for Last Five Years for the BACHELOR OF ENGINEERING IN ELECTRONICS AND COMMUNICATION ENGINEERING											
Academic Year						**Sanctioned Intake**					
2020-21						180					
2019-20						180					
2018-19						180					
2017-18						120					
2016-17						120					
2015-16						120					
Bachelor of Engineering in Computer Science And Engineering	UG	1986	1986	40	Yes	180	Granted accreditation for 3 years for the period	2018	2022	0	4
Sanctioned Intake for Last Five Years for the BACHELOR OF ENGINEERING IN COMPUTER SCIENCE AND ENGINEERING											
Academic Year						**Sanctioned Intake**					
2020-21						180					
2019-20						180					
2018-19						120					
2017-18						120					
2016-17						120					
2015-16						120					
Bachelor of Engineering in Information Science And Engineering	UG	2000	2000	60	Yes	120	Applying for first time	-	-	0	4
Bachelor of Engineering In Aeronautical Engineering	UG	2014	2014	60	No	60	Applying for first time	-	-	0	4

Bachelor of Engineering In Aerospace Engineering	UG	2018	2018	60	No	60	Not Eligible for accreditation	-	-	0	4
Master of Technology in Machine Design	PG	2002	2002	18	Yes	09	Eligible but not applied	-	-	No	2

Sanctioned Intake for Last Five Years for the MASTER OF TECHNOLOGY IN MACHINE DESIGN	
Academic Year	**Sanctioned Intake**
2020-21	9
2019-20	18
2018-19	18
2017-18	18
2016-17	18
2015-16	18

Master of Technology in Digital Communication and Networking	PG	2002	2002	18	Yes	09	Eligible but not applied	-	-	No	2

Sanctioned Intake for Last Five Years for the MASTER OF TECHNOLOGY IN DIGITAL COMMUMNICATION AND NETWORKING	
Academic Year	**Sanctioned Intake**
2020-21	9
2019-20	18
2018-19	18
2017-18	18
2016-17	18
2015-16	18

Master of Technology in Computer Science and Engineering	PG	2006	2006	18	Yes	09	Eligible but not applied	-	-	No	2
Sanctioned Intake for Last Five Years for the MASTER OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING											
Academic Year						**Sanctioned Intake**					
2020-21						9					
2019-20						18					
2018-19						18					
2017-18						18					
2016-17						18					
2015-16						18					
Master of Business Administration	PG	2000	2000	60	No	60	Eligible but not applied	-	-	No	2

8. Programs to be considered for Accreditation vide this application:

Sl. No.	Program Name
1.	B E in Aeronautical Engineering
2.	B E in Civil Engineering
3.	B E in Information Science and Engineering

Table A.8: List of Programs considered for Accreditation

9. Total number of employees in the institution:

A. Regular Employees (Faculty and Staff):

Items		CAY (2020-21)		CAY*m*1 (2019-20)		CAY*m*2 (2018-19)	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	155	170	168	170	169	180
	F	39	42	41	42	42	45
Faculty in Maths, Science & Humanities	M	107	119	120	126	129	131
	F	42	45	45	46	47	49
Non-teaching staff	M	15	15	16	18	17	19
	F	06	06	05	06	05	05

Table A.9a: Regular Employee Details

B. Contractual Staff Employees (Faculty and Staff): (Not covered in Table A):

Items		CAY (2020-21)		CAY*m*1 (2019-20)		CAY*m*2 (2018-19)	
		Min	Max	Min	Max	Min	Max
Faculty in Engineering	M	0	4	01	01	02	02
	F	0	0	0	0	0	0
Faculty in Maths, Science & Humanities	M	0	0	0	0	0	0
	F	0	0	0	0	0	0
Non-teaching staff	M	0	0	0	0	0	0
	F	0	0	0	0	0	0

Table A.9b: Contractual Employee Details

2. Total number of Engineering Students:

Item	CAY 2020-21			CAYm1 2019-20			CAYm2 2018-19			
	UG	M.TECH	MBA	UG	M.TECH	MBA	UG	M.TECH	MBA	MCA
Total No. of boys	1634	25	53	1580	24	50	1567	33	48	
Total No. of girls	1141	23	64	1114	27	67	1114	33	71	
Total No. of students	**2775**	**48**	**117**	**2694**	**51**	**117**	**2681**	**66**	**119**	

Table A.10: Details of Engineering Students

10. Vision of the Institution:

Preparing Competent Engineering and Management Professionals to Serve the Society

11. Mission of the Institution:

- Providing Students with a Sound Knowledge in Fundamentals of their Branch of Study
- Promoting Excellence in Teaching, Training, Research and Consultancy
- Exposing Students to Emerging Frontiers in various domains enabling Continuous Learning
- Developing Entrepreneurial acumen to venture into Innovative areas
- Imparting Value based Professional Education with a sense of Social Responsibility

12. Contact Information of the Head of the Institution and NBA coordinator, if designated:

i. **Name:** Dr. G T Raju
Designation: Principal
Mobile No: 9731292555
Email ID: principal@sjcit.ac.in

ii. **NBA coordinator, if designated**:

Name: Dr. Ranganatha R
Designation: Professor
Mobile No: 9845312626
Email ID: ranganath@sjcit.ac.in

PART B: Criteria Summary

Name of the program: Aeronautical Engineering

Criteria No.	Criteria	Mark/Weightage
Program Level Criteria		
1.	Vision, Mission and Program Educational Objectives	60
2.	Program Curriculum and Teaching – Learning Processes	120
3.	Course Outcomes and Program Outcomes	120
4.	Students' Performance	150
5.	Faculty Information and Contributions	200
6.	Facilities and Technical Support	80
7.	Continuous Improvement	50
Institute Level Criteria		
8.	First Year Academics	50
9.	Student Support Systems	50
10.	Governance, Institutional Support and Financial Resources	120
	Total	1000

PART B

Program Level Criteria

CRITERIA 1

Vision, Mission and

Program Educational Objectives

CRITERION 1	VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES	60

1. VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES (60)

1.1. State the Vision and Mission of the Department and Institute (5)

About Institute:

Sri Jagadguru Chandrashekaranatha Swamiji Institute of Technology (SJCIT) is a premier institute imparting technical education since 1986. The Institute is managed by Sri Adichunchanagiri Shikshana Trust (R.) with the divine blessings of Byravaikya Jagadguru Padmabhushan Sri Sri Sri Dr. Balagangadharanatha Mahaswamiji's and spiritual guidance of Jagadguru Sri Sri Sri Dr. Nirmalanandanatha Mahaswamiji. The Trust runs more than 500 Institutions all over country. SJCIT is affiliated to Visvesvaraya Technological University (VTU), Belagavi. The Institution is recognized by the All-India Council for Technical Education (AICTE), New Delhi, Accredited by NAAC.

VISION OF THE INSTITUTE

Preparing Competent Engineering and Management Professionals to Serve the Society

MISSION OF THE INSTITUTE

M1: Providing Students with a Sound Knowledge in Fundamentals of their Branch of Study

M2: Promoting Excellence in Teaching, Training, Research and Consultancy

M3: Exposing Students to Emerging Frontiers in various domains enabling Continuous Learning

M4: Developing Entrepreneurial acumen to venture into Innovative areas

M5: Imparting Value based Professional Education with a sense of Social Responsibility

About the Department:

The Department of Aeronautical Engineering was established in the Year 2014 with an intake of 60 students. The Department has full-fledged laboratories and state-of-the-art infrastructure to fulfil the academic requirements of VTU curriculum. The department has a total of thirteen faculty members with one Professor, three Associate Professors and eight Assistant Professors who are expertized in diversified areas of Aeronautical discipline. The students are exposed to a wide range of industry-standard experimental facilities such as Low Speed Sub Sonic Wind Tunnel, well equipped Aircraft Propulsion, Structures, Energy Conversion, Fluid Mechanics, Measurement & Metrology and Material Testing Lab, Computer Labs with ANSYS, CATIA, SOLIDEDGE and MATLAB software which have been extensively used for research and consultancy in various sectors.

Figure 1.1.1 Aeronautical Block

VISION OF THE DEPARTMENT

Preparing Competent Aeronautical Engineers to Serve the Society

MISSION OF THE DEPARTMENT

M1: Strengthening the Fundamental concepts in Aeronautical Engineering

M2: Building Analytical ability among students with innovative problem-solving techniques

M3: Training students in multidisciplinary research areas in collaboration with industries embedding the culture of continuous learning

M4: Imparting skillset in line with emerging industrial needs with leadership qualities

M5: Making students responsible citizens to serve society with ethics and values

1.2. State the Program Educational Objectives (PEOs) (5)

The PEOs of Aeronautical Engineering program describe accomplishments that graduates are expected to attain within three-five years after graduation. Graduates would have applied their expertise to contemporary problem solving, be engaged professionally, have continued to learn & adapt, and have contributed to their organizations through leadership & teamwork.

PROGRAM EDUCATIONAL OBJECTIVES

Aeronautical Engineering Graduates within Three-Five years of graduation should:

PEO1: Engage in designing, analysing, manufacturing and testing of systems in Aeronautical and Allied Industries

PEO2: Identify, plan and lead the projects in challenging industrial environment and become successful professionals in their career

PEO3: Pursue higher studies enhancing their Academic & Research capabilities to adopt to the ever-changing technologies

1.3 Indicate Where the Vision, Mission and PEOs are Published and Disseminated among Stakeholders (10)

The Vision, Mission and PEOs of the Aeronautical Engineering program are Published and Disseminated among all the Stakeholders. The details are presented in Table 1.3

Table 1.3.1 Vision, Mission and PEOs Publishing and Dissemination

Stakeholders	Published at	Dissemination Method
Internal (Management, Principal, HOD, Faculty, Students, Non-Teaching Staff)	▪ Institute Website www.sjcit.ac.in ▪ Department News Letter ▪ Department Notice boards ▪ Classrooms ▪ Department Laboratories ▪ Department Library ▪ Department Meeting Room ▪ HOD Chamber ▪ Faculty Cabins ▪ Lab Manuals-e copy ▪ Display Boards	▪ Orientation Programs ▪ Department Meetings ▪ Workshops ▪ Seminars ▪ Conferences ▪ Faculty Development Programs ▪ Training Programs ▪ E-Mails
External (Parents, Alumni, Employers, Professional Bodies, Industry)	▪ Institute Website www.sjcit.ac.in ▪ News Letters ▪ College Prospectus	▪ Parent-Teachers Meetings ▪ Alumni Interactions ▪ E-Mails

1.4 State the process for defining the Vision and Mission of the Department and PEOs of the program (25)

The Head of the Department, with the active participation of faculty members, develops the Vision, Mission and PEO statements of the programme in alignment with Vision and Mission of the Institute. This is based on the considerations of feedback from stakeholders and the future scope of the department & the societal requirements.

- These statements are discussed further among the members of Department Advisory Board (DAB) and Program Assessment Committee (PAC) before finalization.
- Finally, the Vision, Mission and PEOs are approved by the Principal.

Vision, Mission, and PEOs Formulation Committee

1. Principal - SJCIT
2. HOD – Aeronautical Engineering
3. Members – Faculty, Current Students, Alumni, Parents, Industry/Academia and Employers

Figure 1.4.1 shows the DAB meeting conducted by the department. Figure 1.4.2 shows the broader and preliminary steps followed in defining the Vision and Mission of the Department. Similarly, Figure 1.4.3 depicts the process for defining the Vision and Mission of the Department.

Figure 1.4.1 DAB meeting

1.4.1 Process for defining the Vision and Mission

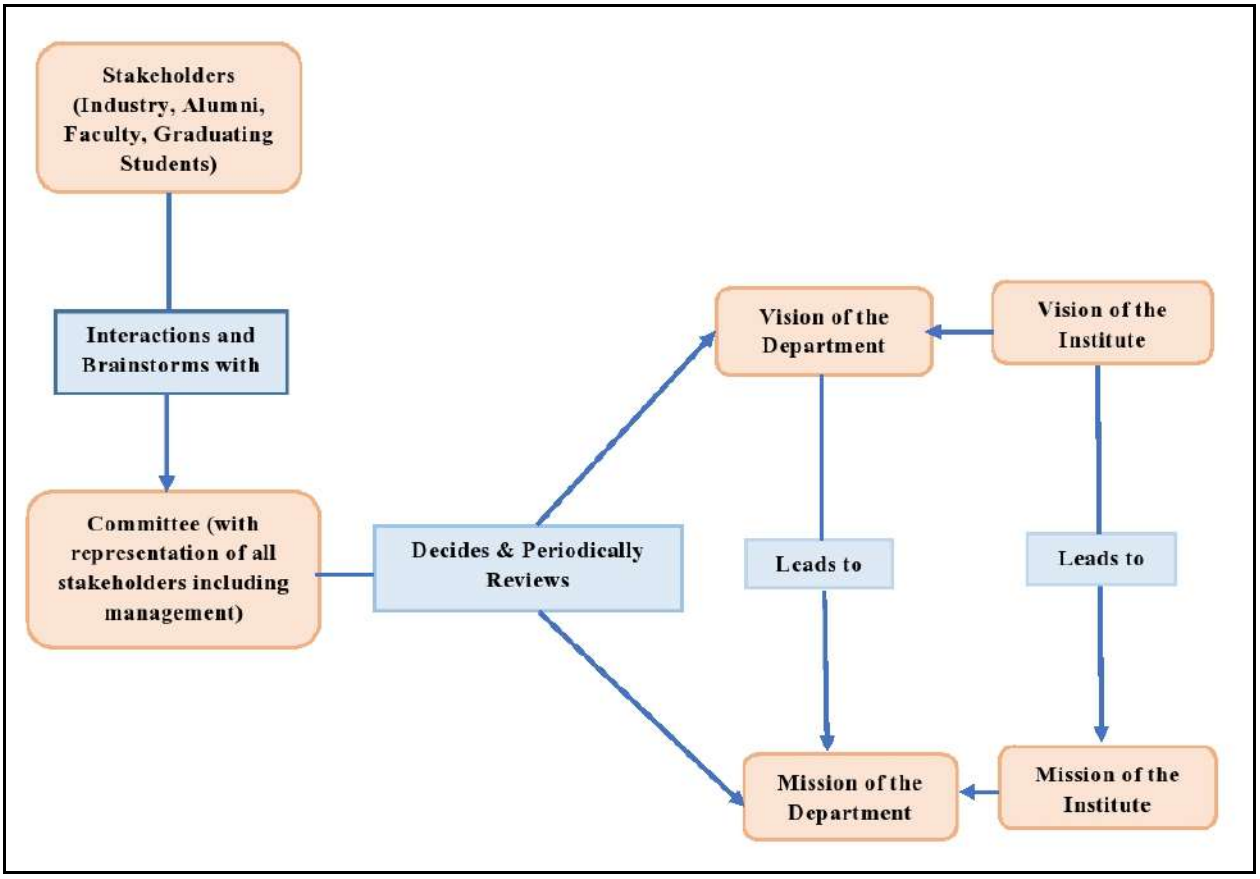


Figure 1.4.2: Broader steps for defining the Vision and Mission of the Department

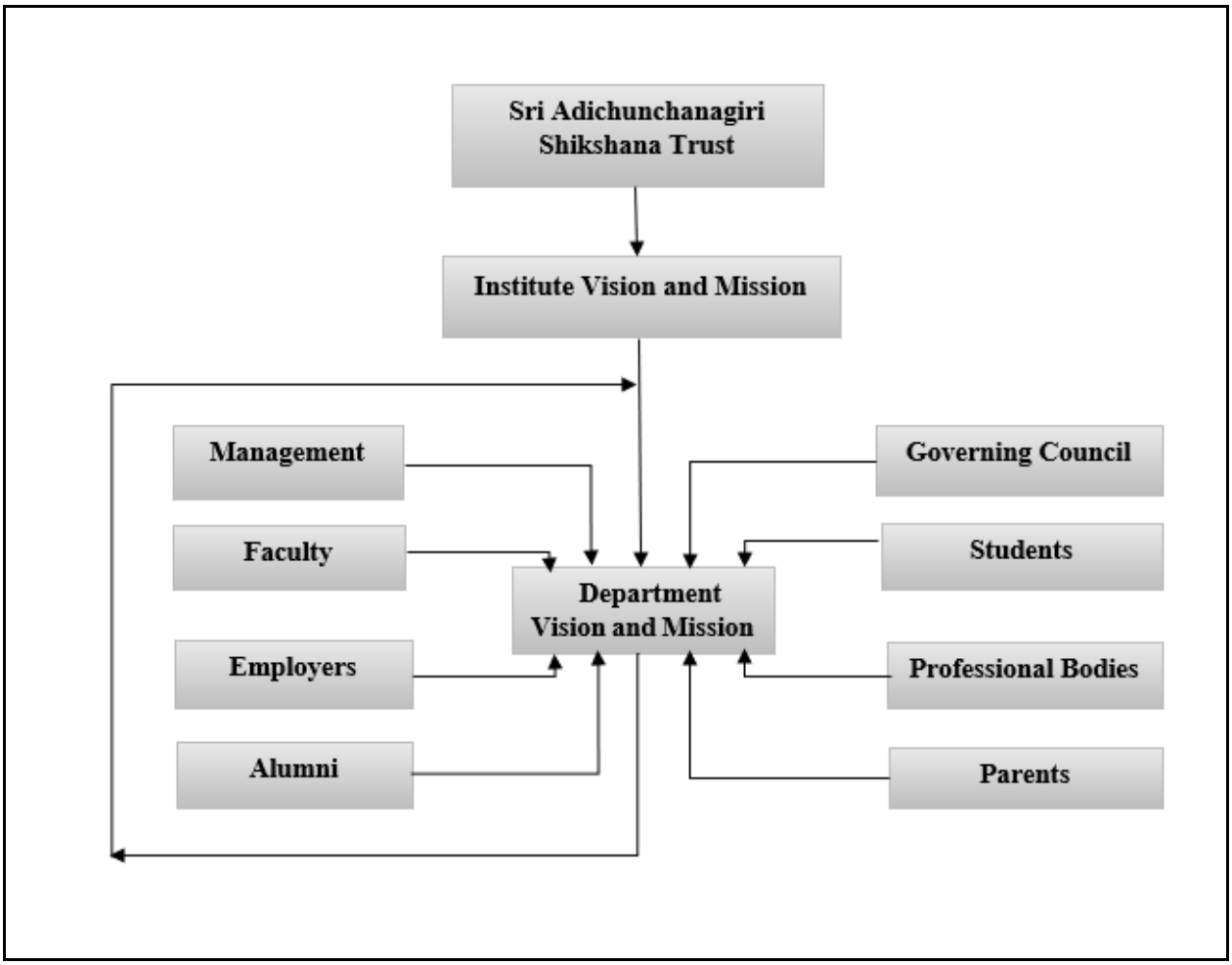


Figure 1.4.3: Process involving various stakeholders

Stakeholders involved: Principal, HOD, Faculty members, Current Students, Alumni, Employers, Industry/Academia Professionals and Parents.

- **Process:**
  - Initial brainstorming sessions at different levels
  - Review, refinement, and validation (Experts, Professionals)
  - Wide publicity (Institute web site, department, campus)
  - Review "to close the loop" (5 years)
  - Regular interactions with faculty and students
- Process documentation
- Records of process implementation

1.4.2 Process for defining the PEOs

The Program Educational Objectives (PEOs) describes what the Graduates of the Aeronautical Program are expected to achieve within 3 to 4 years of completing the program. These are established through a well-defined and recorded consultation process as depicted in figure 1.4.4, involving the Key elements:

- *Professional Success*
- *Lifelong Learning, Higher Education and Research*
- *Ethical Professional Practice*
- *Communication Skills*
- *Team Player*

These statements are discussed further among the members of Department Advisory Board (DAB) before finalization. Finally, the Vision, Mission and PEOs are approved by the Head of the Institution.

Following process has been adopted in framing department Programme Educational Objectives (PEOs):

1. The Head of the department along with Program Assessment Committee, held brain storming sessions with all the faculty members for defining PEOs by considering the Program Outcomes, Institution & Department Vision and Mission statements.

2. Draft PEOs statements were circulated among stakeholders for their feedback.

3. The suggestions & modifications provided by the stakeholders were analyzed in Department Advisory Board meeting & final PEOs were formulated.

4. Final Program Educational Objectives were forwarded for the approval by Head of the Institution.

5. The approved Program Educational Objectives are published & disseminated to all the stakeholders.

The PEOs are evaluated periodically using a variety of instruments including faculty meetings, interactions with members of the students, alumni, employers and DAB, graduate exit surveys and parents' feedback. The process of defining Programme Educational Objectives (PEOs) is illustrated in the following process Figure 1.4.4

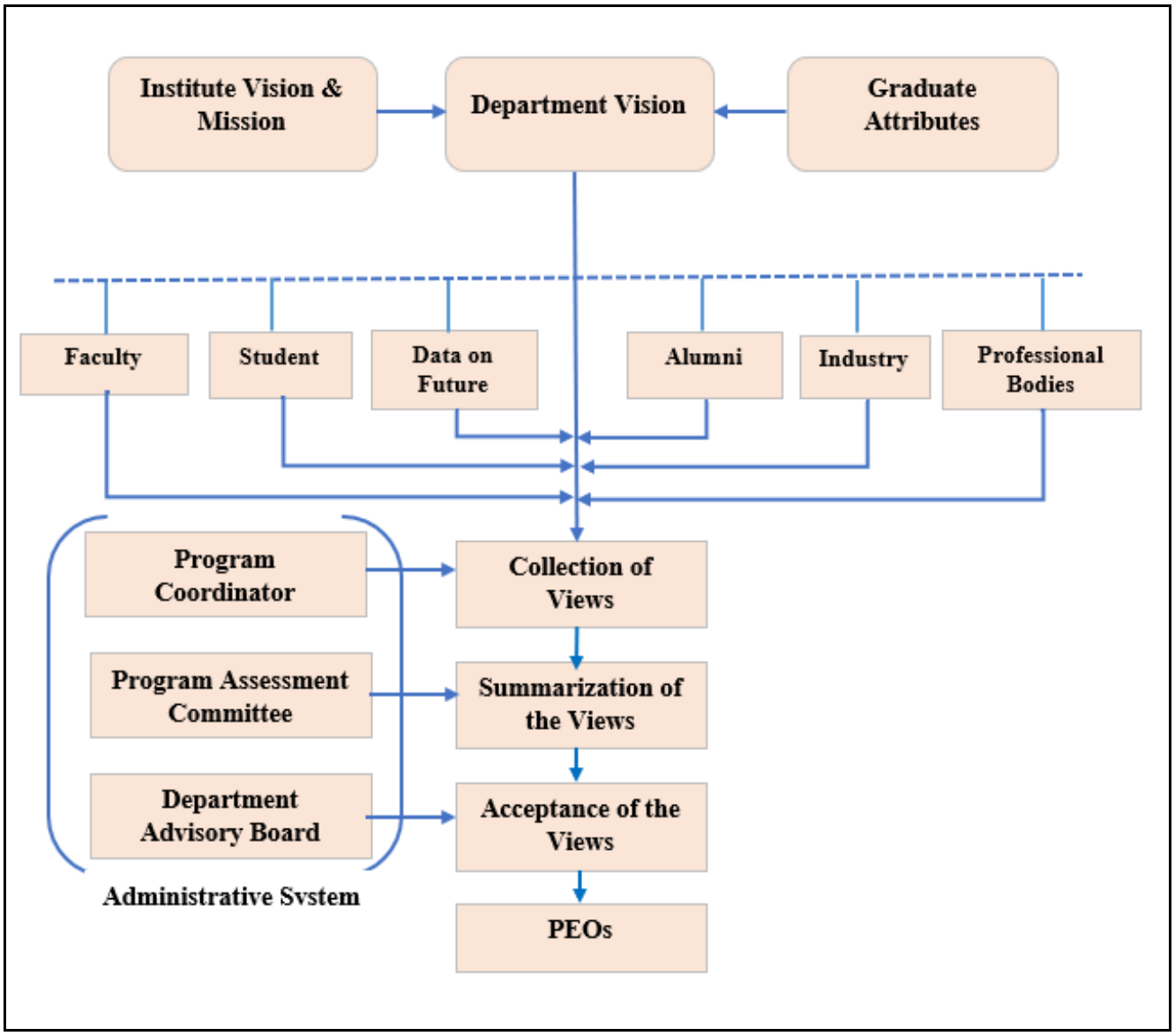


Figure 1.4.4: Process for defining the PEOs of the Department

1.5. Establish consistency of PEOs with Mission of the Department (15)

The PEOs flow naturally from the mission statements of the Department and the Institution. Table B 1.5.1 shows the mapping of mission of Aeronautical department with the PEOs and Table B 1.5.2 gives the justification and rationale of PEOs with Mission of the department.

Table B.1.5.1: Mapping of PEOs with Mission of the Department

Mission Statements → **PEO Statements**	**M1:** Strengthening the Fundamental concepts in Aeronautical Engineering	**M2:** Building Analytical ability among students with innovative problem-solving techniques	**M3:** Imparting skillset in line with emerging industrial needs with leadership qualities	**M4:** Training students in multidisciplinary research areas in collaboration with Industries embedding the culture of continuous learning	**M5:** Making students responsible citizens to serve society with ethics and values
PEO1: Engage in designing, analysing, manufacturing and testing of systems in Aeronautical and Allied Industries	**3**	**3**	**2**	**3**	**2**
PEO2: Identify, plan and lead the projects in challenging industrial environment and become successful professionals in their career	**3**	**3**	**3**	**2**	**2**
PEO3: Pursue higher studies enhancing their Academic & Research capabilities as to adopt to the ever-changing Technologies.	**3**	**2**	**1**	**3**	**2**

Table B.1.5.2: Justification and of PEOs with Mission of the Department

PEOs	Mission	Levels	Justification
PEO1	M1	3	It indicates that understanding the fundamental concepts in Aeronautical Engineering is very important to strengthen the knowledge of graduates for their professional career. Hence correlation is High
	M2	3	This relates to providing innovative instructional methods and fulfilling the required laboratory facilities which results in graduates to have the skills required in academia and industry. Hence correlation is High
	M3	2	This is focused on involving students in training programs and modern tool usage using state of the art facilities moderately enhances the ability for addressing societal needs. Hence the correlation is Moderate
	M4	3	Mission-4 is having high level consistency with PEO1, as research facilities and laboratories influence the graduates to involve in lifelong learning activities
	M5	2	Providing ethical and value-based education will strengthen the ability for addressing industry and societal needs to a greater extent. Hence correlation is Moderate.
PEO2	M1	3	It indicates that understanding the basic Aeronautical concepts is important for graduates to have a successful professional career in their life. Hence correlation is High.
	M2	3	This relates to problem solving skills which are imparted through solid foundation in enhancing the design thinking abilities of the students in solving contemporary industrial problems. Hence the correlation is High.
	M3	3	This focuses on involving students in skill enhancement programs and modern tool usage using state-of-the-art facilities to solve contemporary problems and other advanced techniques. Hence the correlation is High.
	M4	2	This indicates that involving students in Seminars, Conference, HR, Technical training & Internship programs enhances the ability of an individual. Hence the correlation is Moderate
	M5	2	Ethical, environment and societal needs takes apparently years of practical knowledge for graduates to understand their problem and subsequently achieve ability to solve them. Hence the correlation is Moderate

PEO3	**M1**	**3**	This is concerned with providing innovative instructional methods and required laboratory facilities which will help the graduates to have the skills required in academia for their higher studies. Hence the correlation is high.
	M2	**2**	Awareness among the students about Innovation, Entrepreneurship and IPR is created through Institutions Innovation Council and the correlation is Moderate
	M3	**1**	This focuses on training students with advanced tools to slightly enhance the ability of the students for their higher studies. Hence the correlation is Low
	M4	**3**	Exposing the students to research activities and consultancy work enhances their interest to pursue higher education. Hence correlation is High.
	M5	**2**	This relates to providing motivational talks from renowned persons who have pursued higher education and become successful in their professional career. Hence the correlation is Moderate.

CRITERIA 2

Program Curriculum and Teaching – Learning Processes

CRITERION 2	PROGRAM CURRICULUM AND TEACHING–LEARNING PROCESSES	120

2.1. PROGRAM CURRICULUM (20)

2.1.1. State the process used to identify extent of compliance of the University curriculum for attaining the Program Outcomes and Program Specific Outcomes as mentioned in Annexure I. Also mention the identified curricular gaps, if any (10)

The Department of Aeronautical Engineering is affiliated to Visvesvaraya Technological University, Belagavi, Karnataka. The entire program curriculum is designed and provided by the university. The curriculum is formulated and reviewed once in 4 years through Board of Studies (BoS) of VTU comprising of a Chairman, senior Professors of Aeronautical Engineering discipline and representative members from Industry. Apart from the university syllabus, various curricular and extracurricular activities are carried out at the departmental and institute level for the benefit of students and societal needs.

A. Process used to identify extent of compliance of the University Curriculum for attaining the Program Outcomes and Program Specific Outcomes.

Undergraduate program is affiliated to Visvesvaraya Technological University, Belagavi and the curriculum is prescribed by the university. The schemes followed are:

- The Choice based credit system (CBCS) revised scheme for the academic year 2018-2019 & 2019-2020
- The Choice based credit system (CBCS) revised scheme for the academic year 2017-2018.
- The CBCS scheme was introduced in the year 2014 – 2015.
- 2010 scheme was being followed before CBCS scheme.

For each course, outcomes are defined by the course coordinator and these are mapped to program outcomes and program specific outcomes. The program specific outcomes are defined by the department.

Generally, Curriculum maintains the balance in the composition of **Basic Science, Humanities, Professional Courses** and their distribution in **Core and Electives** with the specified depth and breadth offerings. If some components to attain COs/POs are not included

in the curriculum provided by the VTU, then the department makes additional efforts to impart such knowledge by covering concepts through **"Contents beyond Syllabus"** which is added by proper **"GAP analysis"** process.

A typical action plan deployed by the Department for effectively operationalizing the given curriculum is detailed below:

- **Subject Allotment:** At the end of each semester, the HoD conducts a departmental meeting to take stock of the next semester's academic requirements. After a thorough discussion, the subjects and labs are allotted to the faculty members based on their priority, previous experience, specialization, the individual interest shown and, in some cases, the HoD may map subjects to a faculty based on the previous semester's results, students' feedback, staff position or similar demands, etc.,
- **Subject Preparation**: The faculty prepares the lesson plan, notes, question bank, assignment questions, presentation materials/handouts, etc. of the allotted subjects for the entire syllabus during the vacation. The academic material prepared by the staff is scrutinized /reviewed by HoD/Senior faculty and suitable feedback/ suggestions are provided. After corrective measures, the prepared academic material is made available to the students.
- **Lab Requirement:** The labs are allotted with one *Lab In-Charge* and groups are made for each lab. The concerned *Lab In-Charge* goes through the syllabus, takes stock of new requirements, replacements needed, servicing issues, etc. and submits a Material Requisition Form (MRF) to HoD for concerned action plan (calling quotations, purchase, etc.) during vacation.

  Also, the *Lab In-Charge* prepares and updates the lab manuals along with other group members. All the staff members allotted to a particular lab is required to be familiar and thorough with the entire experiment set. They are required to conduct the experiments.
- **Calendar of Events:** Based on the VTU calendar of events, college and department calendar of events is prepared. College calendar of events consists of the activities planned for the semester which includes internal test dates, project reviews, total number of working days and holidays. The college calendar of events is prepared and circulated among the faculties and displayed on the notice board. Department calendar of events

contains conduction of events like organizing guest lectures, conferences, industrial visits, workshops etc.

- **Coverage of Syllabus**: The faculty estimates the number of probable classes available for the given academic semester and prepare lesson plan accordingly for coverage of entire syllabus. For lab involved / mathematical subjects, where more emphasis is required say Mathematics, Aerothermodynamics, Mechanics of Material, Mechanics of Fluid, Turbo Machines, Aerodynamics, Aircraft Structures, Theory of Vibrations, Control Engineering, Aircraft Stability and Control, etc., five hours per week is allotted in the class time table itself. The entire syllabus is supposed to be covered by each staff with proportionate spreading out for the internals.
- **IA Question Papers**: The department maintains high standards in the preparation of IA Question papers based on the motto that "if students are properly trained and evaluated in the internal tests, they can perform better in the final exams and also during placements". The questions in the question papers are set based on Bloom's learning Levels. These question papers are scrutinized for framing of question, the coverage of syllabus, break up of marks, complexity level, etc. by the Reviewers and HoD.
- **Academic Audit:** To assess the effectiveness of curricular implementation plan, the IQAC of SJCIT reviews the roles and responsibilities, academic preparation, orientation of faculty towards the subject, understanding of the curriculum requirements, covering content beyond syllabus, teaching practices adopted by the faculty for each subject, projects guided, SWOC analysis, previous appraisal and percentage results obtained. Based on this, specific aspects of the action plan to be contemplated are revisited.
- The COs and POs mapping, assessment and attainment process has been performed, the weak areas were pointed out and probable gaps were identified. The CO-PO table thus prepared was reviewed by faculty members to determine which components of PO were either not met or met to level only. Discussions focused on whether level of introductory nature was adequate or does the institute need to develop more beyond syllabus topics, introduce additional electives, laboratory experiments, etc. to improve the level.
- For developing content beyond the syllabus, the feedback from alumni and industry were discussed thoroughly and analyzed. Also, the internet searching was done to assess

the demand of Industries and a review on the syllabus provided by VTU and other universities has been done to identify the gaps.

- Tables B 2.1.1.1 and B 2.1.1.2 list the POs and PSOs respectively.

A.1 Program Outcomes (POs) defined by NBA:

Table B 2.1.1.1: Program Outcomes (POs) defined by NBA

PO1	**Engineering Knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	**Problem Analysis**: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	**Design/development of Solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	**Conduct Investigations of Complex Problems**: Use research-based knowledge and research Methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	**Modern Tool Usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	**The Engineer and Society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	**Environment and Sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	**Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	**Individual and Team Work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	**Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	**Project Management and Finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments
PO12	**Life-long Learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

A.2 Program Specific Outcomes (PSOs) of Aeronautical Engineering Program:

Table B 2.1.1.2: PSOs of Aeronautical Engineering Program

PSO1	Apply the fundamental knowledge of Aerodynamics, Propulsion, Structures and Flight controls to solve core contemporary problems
PSO2	Demonstrate and solve multidisciplinary problems to build risk taking abilities & decision-making capabilities in Aeronautical field

A.3 Extent of compliance of the University Curriculum for attaining the Program Outcomes:

Table B 2.1.1.3: Extent of compliance of the University Curriculum for attaining the Program Outcomes and Program Specific Outcomes.

SUBJECT CODE	SUBJECT	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Fundamental Courses – Engineering Knowledge															
C102	Engineering Physics	✓	✓	✓										✓	✓
C103	Elements of Civil Engineering and Mechanics	✓	✓	✓										✓	✓
C104	Elements of Mechanical Engineering	✓	✓											✓	✓
C105	Basic Electrical Engineering	✓	✓	✓										✓	✓
C106	Workshop Practice	✓	✓											✓	✓
C107	Physics Lab	✓	✓	✓										✓	✓
C109	Engineering Chemistry	✓	✓	✓										✓	✓
C110	Programming in C and Data Structures	✓	✓	✓	✓									✓	
C112	Basic Electronics	✓	✓	✓										✓	✓
C113	CCP Lab	✓	✓	✓	✓	✓								✓	✓
C114	Engineering Chemistry Lab	✓	✓	✓										✓	
Fundamental Courses - Knowledge of Mathematics															
C101	Engineering Mathematics – I	✓	✓	✓	✓	✓								✓	✓
C108	Engineering Mathematics – II	✓	✓	✓	✓	✓								✓	✓
C201	Engineering Mathematics – III	✓	✓	✓	✓	✓								✓	✓
C210	Engineering Mathematics – IV	✓	✓	✓	✓	✓								✓	✓
Core Contemporary – Basic Courses															
C111	Computer Aided Engineering Drawing	✓	✓	✓	✓				✓	✓			✓	✓	✓
C202	Elements of Aeronautics	✓	✓	✓						✓	✓		✓	✓	✓
C203	Aerothermodynamics	✓	✓	✓	✓					✓			✓	✓	✓
C204	Mechanics of Materials	✓	✓	✓	✓	✓							✓	✓	✓
C205	Mechanics of Fluids	✓	✓	✓	✓								✓	✓	✓
C206	Measurement and Metrology	✓					✓	✓	✓	✓			✓	✓	✓

C207	Material Testing Lab	✓					✓	✓	✓	✓	✓		✓	✓	✓
C213	Mechanisms and Machine Theory	✓	✓	✓	✓					✓	✓		✓	✓	✓
C214	Aircraft Material Science	✓								✓	✓		✓	✓	✓
C215	Measurement and Metrology Lab	✓	✓	✓			✓	✓		✓	✓		✓	✓	✓
C302	Introduction to Composite Materials	✓	✓	✓						✓	✓		✓	✓	✓
C401	Control Engineering	✓	✓	✓	✓					✓			✓	✓	✓
Core Contemporary Courses - Aerodynamics															
C211	Aerodynamics I	✓	✓	✓	✓								✓	✓	✓
C307	Aerodynamics Lab	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
C309	Aerodynamics II	✓	✓	✓	✓								✓	✓	✓
C402	Computational Fluid Dynamics	✓	✓	✓	✓					✓	✓		✓	✓	✓
Core Contemporary Courses – Aircraft Propulsion															
C212	Aircraft Propulsion	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
C215	Turbo Machines	✓	✓	✓	✓					✓	✓		✓	✓	✓
C303	Heat and Mass Transfer	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓
C308	Energy Conversion and Fluid Mechanics Lab	✓	✓		✓					✓	✓		✓	✓	✓
C310	Gas Turbine Technology	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓
C316	Aircraft Propulsion Lab	✓	✓	✓	✓		✓	✓		✓	✓		✓	✓	✓
Core Contemporary Courses – Aircraft Structures and Performance															
C304	Aircraft Structures I	✓	✓	✓	✓								✓	✓	✓
C305	Theory of Vibrations	✓	✓	✓	✓								✓	✓	✓
C311	Aircraft Performance	✓	✓	✓						✓	✓		✓	✓	✓
C312	Aircraft Structures II	✓	✓	✓	✓					✓			✓	✓	✓
C314	Finite Element Method	✓	✓	✓									✓	✓	✓
C317	Aircraft Structures Lab	✓	✓	✓		✓				✓	✓		✓	✓	✓
C403	Aircraft Stability and Control	✓	✓	✓						✓	✓		✓	✓	✓
C404	Flight Simulation Lab	✓	✓	✓	✓	✓				✓	✓		✓	✓	✓
Specialized Courses – Management, Aircraft Systems, Helicopters, UAV and Space Technology															
C301	Management and Entrepreneurship	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓
C306	Basics of Rockets and Missiles	✓	✓	✓	✓					✓			✓	✓	✓
C313	Space Mechanics	✓	✓	✓	✓					✓	✓		✓	✓	✓
C315	Unmanned Aerial Vehicles	✓	✓	✓									✓	✓	✓
C406	Helicopter Dynamics	✓	✓	✓									✓	✓	✓
C407	Guidance, Navigation and Control	✓	✓	✓						✓	✓		✓	✓	✓

C413	Avionics	✓	✓							✓	✓		✓	✓	✓
C414	Flight Testing	✓	✓	✓						✓	✓		✓	✓	✓
Specialized Courses – Aircraft Design															
C 217	Computer Aided Aircraft Drawing	✓	✓	✓	✓	✓							✓	✓	✓
C405	Design, Modelling and Analysis Lab	✓	✓	✓	✓	✓				✓			✓	✓	✓
C410	Project Phase I	✓	✓	✓						✓	✓		✓	✓	✓
C412	Flight Vehicle Design	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	✓
C415	Professional Practice and Internship	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
C416	Project Work	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓
C417	Seminar	✓	✓	✓						✓			✓	✓	✓

A4. Process to identify the extent of Compliance of University Curriculum:

The process used to identify the extent of compliance of university curriculum is through getting feedback on gaps from different stakeholders. It includes

1. Seeking input from the teachers handling the course.
2. Seeking feedback from senior students
3. Seeking input from industry experts
4. Collecting feedback from placement cell/ Employers
5. Collecting alumni feedback

The figure 2.1.1.1 gives the process of Curriculum Gap analysis and the figure 2.1.1.2 shows the process for assessment on gap analysis.

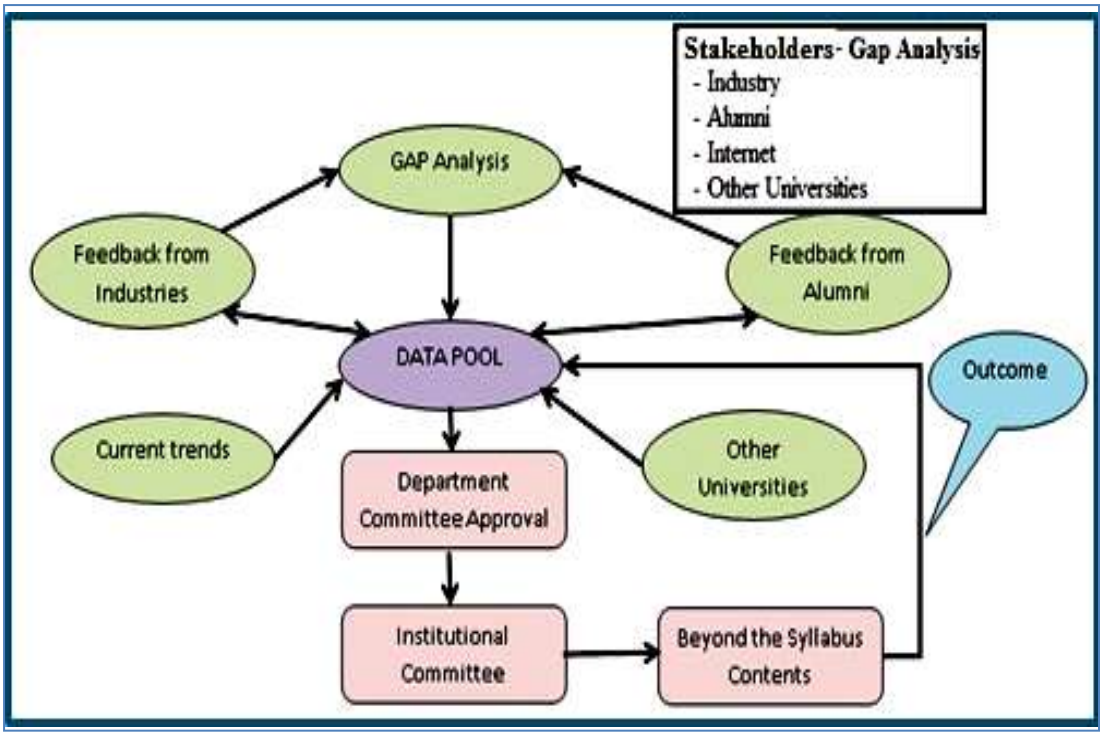


Figure 2.1.1.1: Process to identify the Curriculum Gaps

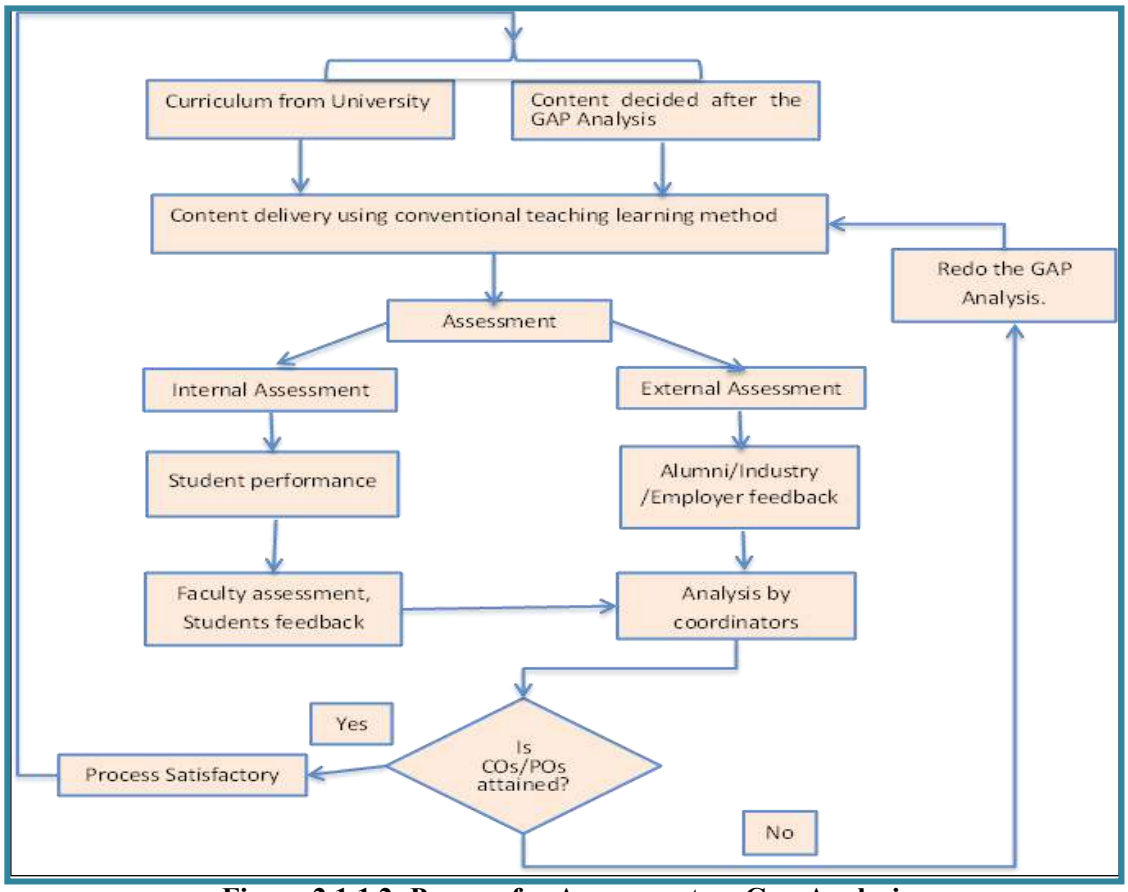


Figure 2.1.1.2: Process for Assessment on Gap Analysis

Implementation:

Identified content beyond the syllabus (Theory/Lab), if any, is included in lesson plan and covered in classroom by the faculty. If the topic/area is new, people from Industry are invited to deliver a talk.

Effectiveness:

Effectiveness of this process is analyzed through feedback from the students and their performance in examinations. Also, from the alumni and industry experts.

Feedback from Students: "*Graduate Exit Survey*", A questionnaire is prepared by the program coordinator and is given to students at the end of the program to get feedback on the POs and PSOs. The results are analyzed to see whether the POs and PSOs are strongly or loosely mapped. Figures 2.1.1.3 and 2.1.1.4 shows the snapshots of sample Graduates' Exit Survey form.

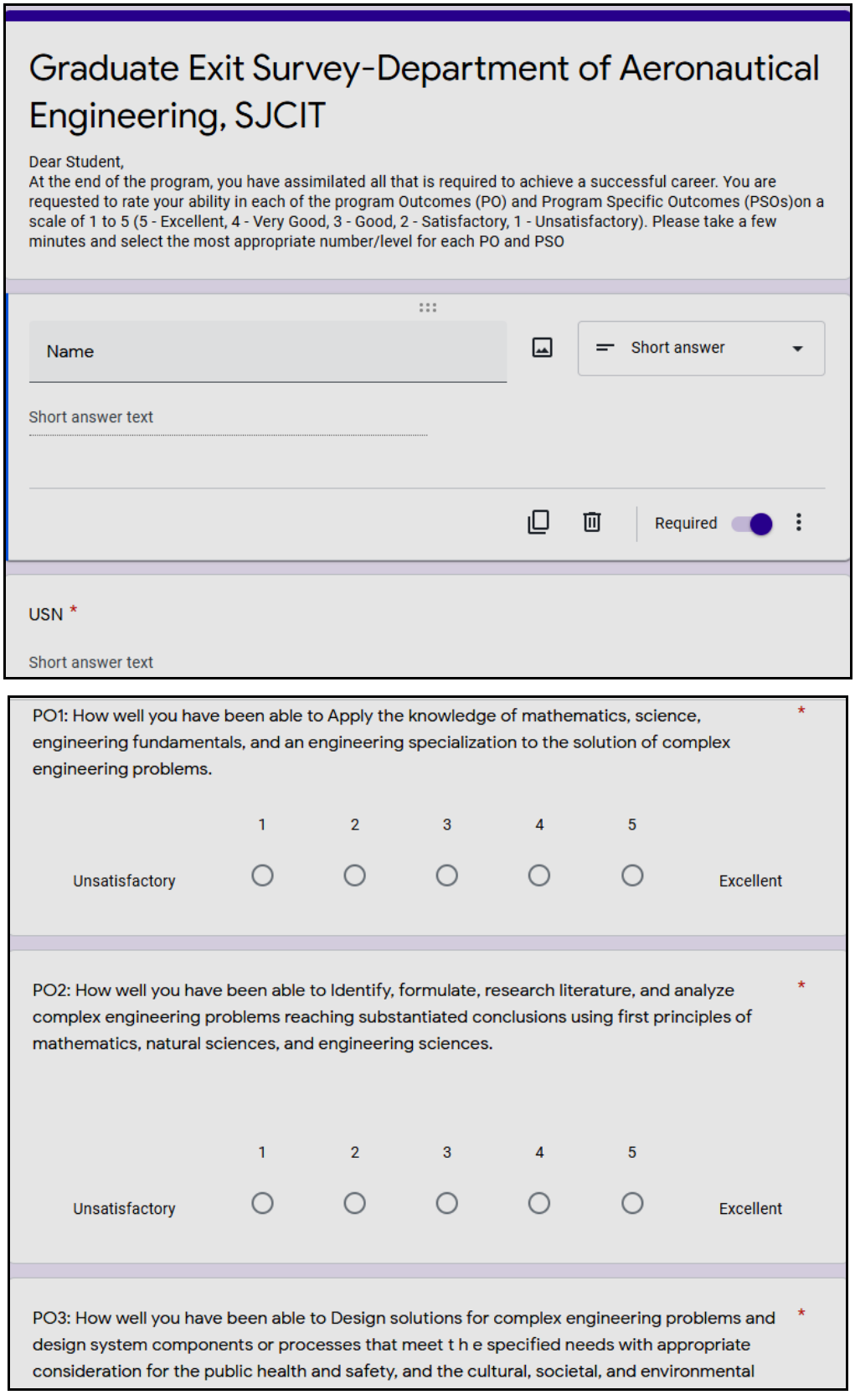
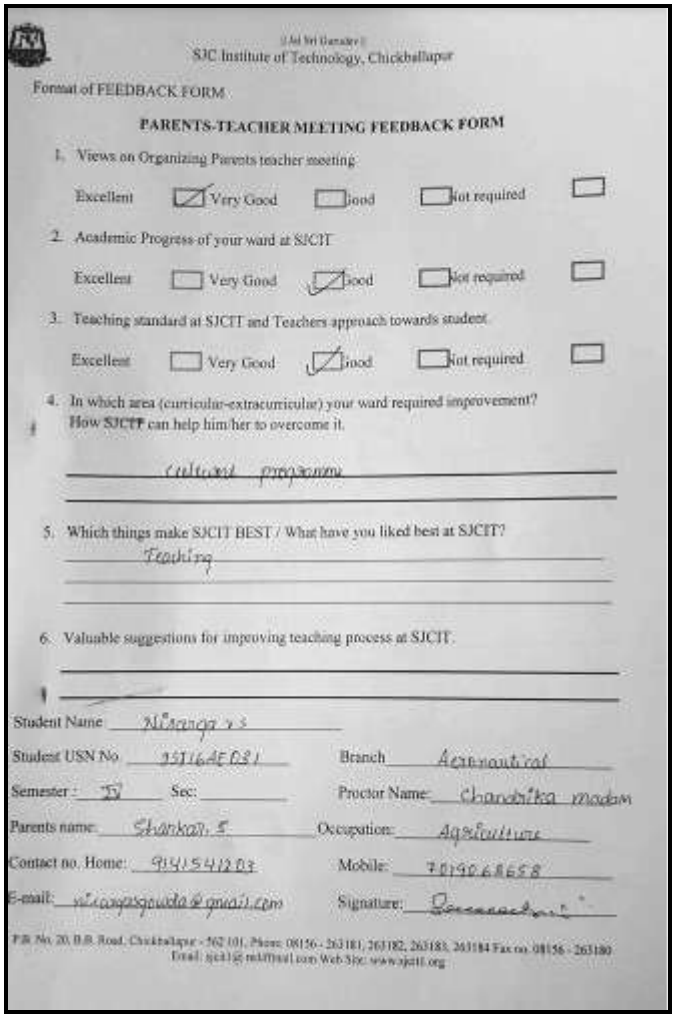


Figure 2.1.1.3 a & b: Graduate Exit Survey Form

Sl. No.	Timestamp	Name	USN	PO1: How well you have been able to Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex	PO2: How well you have been able to Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of	PO3: How well you have been able to Design solutions for complex engineering problems and design system components or processes that meet t h e specified needs with appropriate consideration	PO4: How well you have been able to Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the	PO5: How well you have been able to Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities
1	9/17/2021 14:51:22	Sandeep N	1SJ17AE037	5	5	5	5	5
2	9/17/2021 14:54:07	Abhilash M	1SJ16AE002	4	4	5	4	4
3	9/17/2021 14:54:35	MAHESH.D.N	1SJ17AE022	4	5	4	4	4
4	9/17/2021 15:10:53	JAHANAVI R	1SJ17AE016	3	3	3	3	3
5	9/17/2021 15:17:45	Eragowda HG	1SJ17AE014	4	4	4	4	4
6	9/17/2021 15:29:19	Firdose Banu	1SJ17AE015	4	4	4	4	4
7	9/17/2021 16:28:56	Pruthvija P	1SJ17AE033	4	4	4	4	4
8	9/17/2021 18:18:58	CH LOKESH	1SJ17AE012	5	4	5	5	5
9	9/17/2021 19:09:30	Suhas C	1SJ17AE044	4	5	4	5	3
10	9/17/2021 23:30:19	Abhijeet	1SJ17AE002	4	3	4	3	3
11	9/18/2021 8:19:08	Megha Mannikeri	1SJ17AE025	4	4	4	4	4
12	9/18/2021 10:16:47	Chandana N	1sj17ae013	4	4	4	4	4

Figure 2.1.1.4: Responses from Graduate Exit Survey

Feedback from Parents - The program coordinator will collect the feedback from the parents about their experience and also their ward's opinion on the program. It helps to improve the overall system. Figure 2.1.1.5 show the sample feedback form from the parents.



SJC Institute of Technology, Chickballapur

Format of FEEDBACK FORM

PARENTS-TEACHER MEETING FEEDBACK FORM

1. Views on Organizing Parents teacher meeting

Excellent ☑ Very Good ☐ Good ☐ Not required ☐

2. Academic Progress of your ward at SJCIT

Excellent ☐ Very Good ☑ Good ☐ Not required ☐

3. Teaching standard at SJCIT and Teachers approach towards student

Excellent ☐ Very Good ☑ Good ☐ Not required ☐

4. In which area (curricular-extracurricular) your ward required improvement? How SJCIT can help him/her to overcome it.

cultural programme

5. Which things make SJCIT BEST / What have you liked best at SJCIT?

Teaching

6. Valuable suggestions for improving teaching process at SJCIT.

Student Name: Niranjan s s

Student USN No: 1SJ16AE031 Branch: Aeronautical

Semester: IV Sec: Proctor Name: Chandrika Madam

Parents name: Shankar. S Occupation: Agriculture

Contact no. Home: 9141541203 Mobile: 7019068658

E-mail: niranjangowda@gmail.com Signature:

P.B. No. 20, B.B. Road, Chickballapur - 562 101. Phone: 08156 - 263181, 263182, 263183, 263184 Fax no: 08156 - 263180

Email: sjcit16@rediffmail.com Web Site: www.sjcit.org

Figure 2.1.1.5: Feedback from Parents

Feedback from the Recruiters/Employers: A questionnaire is prepared by the program coordinator and is given to the recruiters during/after the recruitment process to see whether the program outcomes and program specific outcomes are strongly or loosely attained. Figures 2.1.1.6 and 2.1.1.7 show the sample survey taken from the employers.

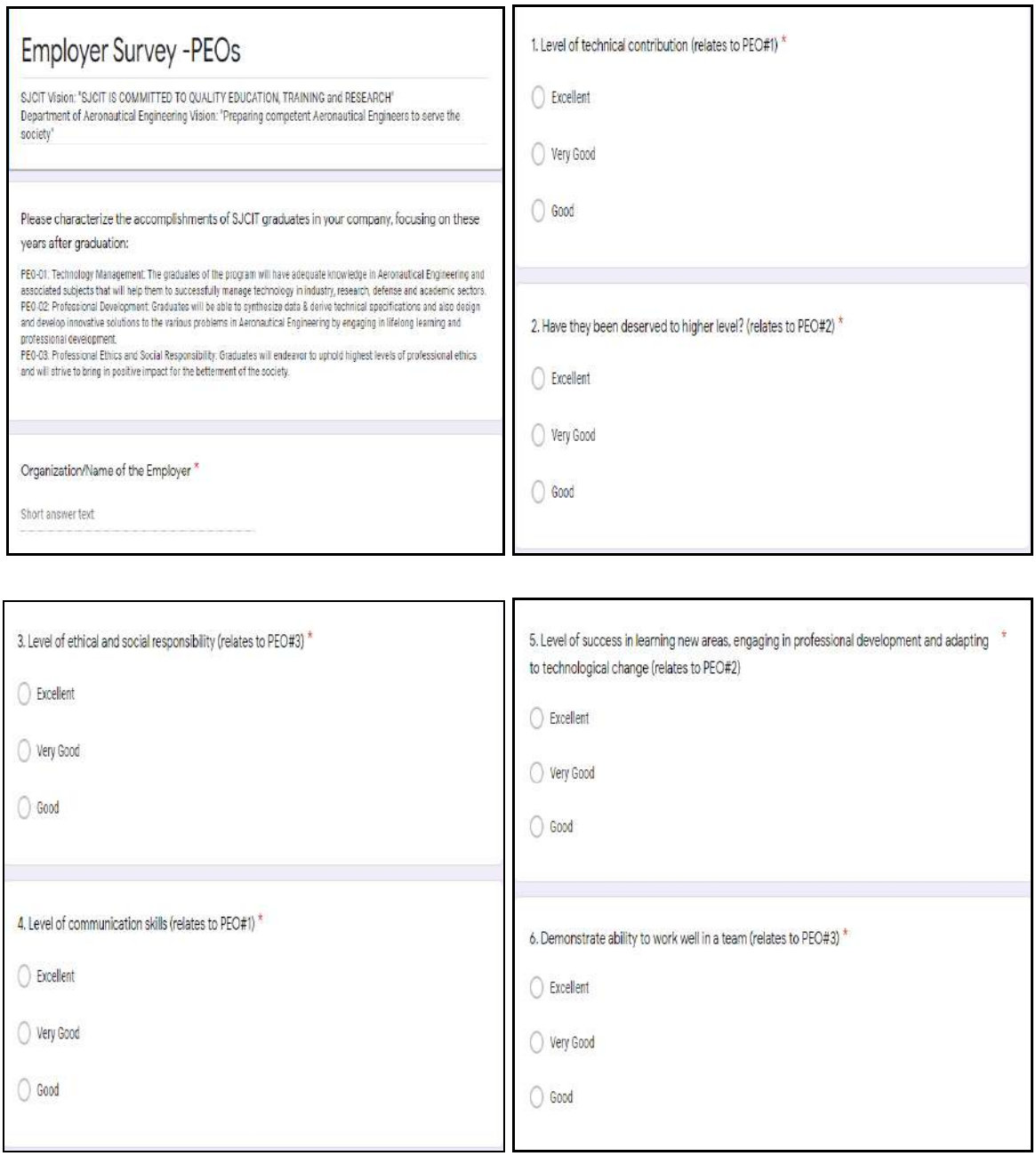


Figure 2.1.1.6: Sample Survey form - Employers

Organization/Name of the Employer	Name of the Graduate	1. Level of technical contribution (relates to PEO#1)	2. Have they been deserved to higher level? (relates to PEO#2)	3. Level of ethical and social responsibility (relates to PEO#3)	4. Level of communication skills (relates to PEO#1)	learning new areas, engaging in professional development and adapting to technological change (relates to	6. Demonstrate ability to work well in a team (relates to PEO#3)	7. Any other comments
CADES STUDEC TECHNOLOGIES INDIA PVT LTD	Akshay Kumar	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Quick learner
AXIS CADES	Gurushanthana Gowda	Excellent	Excellent	Excellent	Very Good	Excellent	Excellent	Committed
TCS	Dhanush G J	Excellent	Excellent	Excellent	Excellent	Good	Good	
TCS	Manjunath Patil	Very Good	Very Good	Excellent	Very Good	Good	Good	
Capgemini	Pavan T	Very Good	Very Good	Very Good	Very Good	Good	Good	
TCS	Chaitra	Very Good	Very Good	Excellent	Very Good	Good	Good	
TCS	Aravind Reddy	Excellent	Very Good	Excellent	Very Good	Good	Good	
P3 Consulting Pvt. Ltd (UMLAUT)	Pavan Reddy	Very Good	Very Good	Very Good	Very Good	Good	Good	
TCS	Kiran I Devapur	Very Good	Very Good	Excellent	Excellent	Good	Good	
TCS	Tanuja	Very Good	Very Good	Excellent	Very Good	Good	Good	
Sandl Engg Solutions Pvt. Ltd	Yashwanth S	Very Good	Very Good	Excellent	Very Good	Very Good	Very Good	

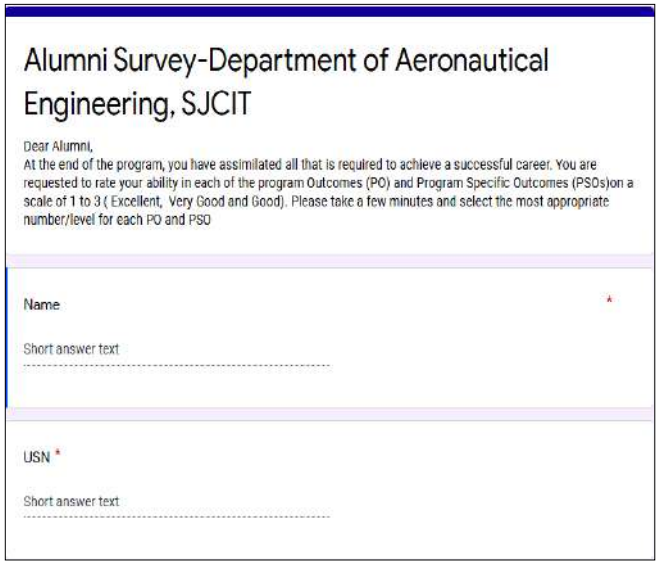
Figure 2.1.1.7: Sample responses from Employers on PEOs

Organization/Name of the Employer	Name of the Graduate	1. PSO1: Apply knowledge to improve solutions in their working environment	2. PSO2: Continue to learn and adopt to technological Change	3. PO1: Apply the knowledge of Engineering fundamentals	4. PO2: Analyze complex engineering problems to reach substantial conclusions	5. PO3: Design solutions to complex problems	6. PO4: Investigate and interpret the data.
Multiplex Drone Pvt Ltd	RAGHAVENDRA	Very Good	Very Good	Excellent	Very Good	Very Good	Very Good
Axis Cades	Gurushanthana Gowda	Very Good	Very Good	Excellent	Very Good	Good	Good
TCS	Dhanush G J	Excellent	Excellent	Excellent	Excellent	Good	Good
TCS	Manjunath Patil	Very Good	Very Good	Excellent	Very Good	Good	Good
Capgemini	Pavan T	Very Good	Very Good	Very Good	Very Good	Good	Good
TCS	Chaitra	Very Good	Very Good	Excellent	Very Good	Good	Good
TCS	Aravind Reddy	Excellent	Very Good	Excellent	Very Good	Good	Good
P3 Consulting Pvt. Ltd (UMLAUT)	Pavan Reddy	Very Good	Very Good	Very Good	Very Good	Good	Good
TCS	Kiran I Devapur	Very Good	Very Good	Excellent	Excellent	Good	Good
TCS	Tanuja	Very Good	Very Good	Excellent	Very Good	Good	Good
Sandl Engg Solutions Pvt. Ltd	Yashwanth S	Very Good	Very Good	Excellent	Very Good	Very Good	Very Good

Organization/Name of the Employer	Name of the Graduate	7. PO5: Select and apply appropriate modern tools	8. PO6: Responsible relevant to professional practice	9. PO7: Demonstrate the knowledge in societal and environmental contexts.	10. PO8: Commit to professional ethics and responsibilities	11. PO9: Function effectively as an individual and as a member in diverse teams	12. PO10: Effectively communicate and make presentation with clear instructions	knowledge and understanding of engineering and management principles	Recognize the need and engage in life long learning.
Multiplex Drone Pvt Ltd	RAGHAVENDRA	Excellent	Good	Excellent	Excellent	Excellent	Excellent	Very Good	Excellent
Axis Cades	Gurushanthana Gowda	Excellent	Very Good	Very Good	Excellent	Excellent	Excellent	Very Good	Excellent
TCS	Dhanush G J	Excellent	Very Good	Excellent	Very Good	Excellent	Excellent	Very Good	Excellent
TCS	Manjunath Patil	Excellent	Good	Excellent	Excellent	Excellent	Excellent	Very Good	Excellent
Capgemini	Pavan T	Very Good	Good	Very Good	Very Good	Excellent	Excellent	Very Good	Very Good
TCS	Chaitra	Excellent	Good	Excellent	Excellent	Excellent	Excellent	Very Good	Excellent
TCS	Aravind Reddy	Excellent	Good	Very Good	Excellent	Excellent	Excellent	Very Good	Excellent
P3 Consulting Pvt. Ltd (UMLAUT)	Pavan Reddy	Very Good	Good	Very Good	Very Good	Excellent	Excellent	Very Good	Very Good
TCS	Kiran I Devapur	Excellent	Good	Excellent	Very Good	Excellent	Excellent	Very Good	Excellent
TCS	Tanuja	Excellent	Good	Excellent	Excellent	Excellent	Excellent	Very Good	Excellent
Sandl Engg Solutions Pvt. Ltd	Yashwanth S	Excellent	Good	Excellent	Excellent	Excellent	Excellent	Very Good	Excellent
		2.82	1.20	2.64	2.64	3.00	3.00	2.00	2.82

Figure 2.1.1.8 (a) and (b): Sample responses from Employers on POs and PSOs

Feedback from Alumni: A questionnaire is prepared by the program and course coordinator and is given to the alumni. It will be done once in every year to see whether the POs and PSOs are strongly or loosely attained. Figures 2.1.1.9 to 2.1.1.12 show the sample Alumni survey - 2021



Alumni Survey-Department of Aeronautical Engineering, SJCIT

Dear Alumni,
At the end of the program, you have assimilated all that is required to achieve a successful career. You are requested to rate your ability in each of the program Outcomes (PO) and Program Specific Outcomes (PSOs)on a scale of 1 to 3 (Excellent, Very Good and Good). Please take a few minutes and select the most appropriate number/level for each PO and PSO

Name *

Short answer text

USN *

Short answer text

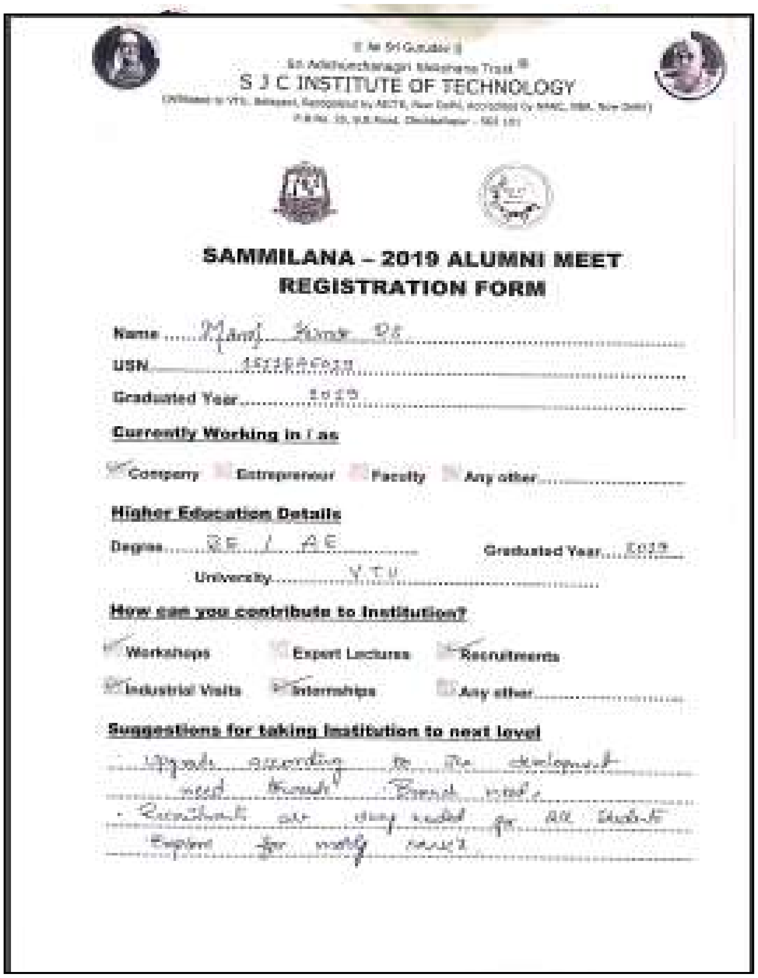
Figure 2.1.1.9: Alumni Survey – 2021

Timestamp	Name	USN	PO1: Engineering Knowledge: How well you have been able to Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	PO2: Problem Analysis: How well you have been able to Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	PO3:Design/development of Solutions: How well you have been able to Design solutions for complex engineering problems and design system components or processes that meet t h e specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	PO4: Conduct Investigations of Complex Problems: How well you have been able to Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.	PO5: Modern Tool Usage: How well you have been able to Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
11/6/2021 23:16	Vaishnavi Pundarikaksha	1SJ15AE048	Very Good	Very Good	Excellent	Excellent	Very Good
11/6/2021 23:22	Manoj J	1sj14ae025	Good	Good	Good	Good	Good
11/7/2021 0:03	Pavan Bellavi Venkatesh	1sj14ae034	Very Good	Excellent	Excellent	Very Good	Excellent
11/7/2021 0:16	Sivaprasad	1SJ14AE013	Very Good	Very Good	Very Good	Very Good	Very Good
11/7/2021 7:49	Dharanesha V N	1SJ14AE015	Good	Good	Good	Good	Very Good
11/7/2021 20:26	ARAVIND REDDY	1SJ14AE006	Excellent	Excellent	Very Good	Very Good	Very Good

Figure 2.1.1.10: Alumni Survey – 2021 (contd…)

Timestamp	Name	USN	PO6: The Engineer and Society: How well you have been able to Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.	PO7: Environment and Sustainability: How well you have been able to Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.	PO8:Ethics: How well you have been able to Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.	and Team Work: How well you have been able to Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	PO10: Communication: How well you have been able to Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	PO11:Project Management and Finance: How well you have been able to Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	PO12:Life-long Learning: How well you have been able to Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
11/6/2021 23:16	Vaishnavi Pundarikaksha	1SJ15AE048	Very Good	Excellent	Excellent	Very Good	Excellent	Excellent	Very Good
11/6/2021 23:22	Manoj J	1sj14ae025	Good	Good	Good	Good	Good	Good	Good
11/7/2021 0:03	Pavan Bellavi Venkatesh	1sj14ae034	Very Good	Very Good	Very Good	Excellent	Excellent	Excellent	Very Good
11/7/2021 0:16	Sivaprasad	1SJ14AE013	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good
11/7/2021 7:49	Dharanesha V N	1SJ14AE015	Good	Good	Very Good	Good	Very Good	Good	Good
11/7/2021 20:26	ARAVIND REDDY	1SJ14AE006	Very Good	Very Good	Very Good	Excellent	Excellent	Excellent	Excellent
11/8/2021 12:58	Ramya R	1SJ15AE032	Excellent	Very Good	Excellent	Excellent	Excellent	Excellent	Excellent

Figure 2.1.1.11: Alumni Survey – 2021 (contd…)



S J C INSTITUTE OF TECHNOLOGY

SAMMILANA – 2019 ALUMNI MEET
REGISTRATION FORM

Name ...... Manoj Kumar BS

USN ......

Graduated Year 2019

Currently Working in / as

Company Entrepreneur Faculty Any other......

Higher Education Details

Degree...... BE / AE Graduated Year...... 2019

University...... VTU

How can you contribute to Institution?

Workshops Expert Lectures Recruitments

Industrial Visits Internships Any other......

Suggestions for taking Institution to next level

Figure 2.1.1.12: Filled in Alumni forms during Alumni meet

B. List the curricular gaps for the attainment of defined POs and PSOs.

B.1 Curricular Gaps and recommended subjects to bridge Academia and Industry:

As a regular practice, before the beginning of the semester, all faculty meeting will be conducted at department level to decide on the gaps in each subject. Those gaps will be listed, and actions will be planned. In the end of the semester, those gaps, actions achieved will be listed. The sample end-semester subject wise gaps and their relevance to POs is given in Table B2.1.1.4.

Table B2.1.1.4 Subject wise Gaps and their relevance to POs

Subject Code/ Subject Name	Gap	Resource Person	Steps Taken	Date	Relevance to POs and PSOs
17AE34/ 18AE34 Mechanics of Materials	1.2D Equilibrium Equation 2.FOS and Limit load factor 3.Relationship b/w Elastic Constants 4.How SFD and BMD is important for Aeronautical Engineer 5. How Fatigue and fracture is experienced by A/C 6. Tocoma bridge failure due to resonance	Prof. Adithya A.R Dr. Bino Prince Raja	The topics were taught in the class to bridge the gap in the curriculum. More problems were solved and given as assignment	Throughout the semester	PO1, PO2, PO3, PO4, PO12, PSO1, PSO2
15AE36 Measurement and Metrology	1.History of measurements, Importance of measurement in daily life, 2. Traditional/Old measuring methods, Modern measuring instruments, 3.Quality Control using instruments, 4. Importance of Calibrations	Prof. Vinay P	The topics were taught in the class to bridge the gap in the curriculum.	Throughout the semester	PO1, PO2, PO3, PO12, PSO1
18AE44 Mechanisms and Machine Theory	1.D'Alembert's principle 2.Different types of gears 3.Gear tooth profile – involute and cycloidal 4.Speed governor 5.Applications of governors. 6.Gyroscopic effect on ship 7. Gyroscopic effect on two and four-wheeler	Prof. Mithun P S	The topics were taught in the class to bridge the gap in the curriculum More problems were solved and given as assignment	Throughout the semester	PO1, PO2, PO3, PO4, PO12
15AE45/17AE45 Aircraft Material Science	1. Basic functions of different parts of aircraft, 2. History of aircraft materials 3. Difference between alloys and super alloys	Prof. Vinay P	The topics were taught in the class to bridge the gap in the curriculum. Case study related to the study of various materials used in aircraft was given.	Throughout the semester	PO1, PO9, PO10, PO12, PSO1, PSO2
15AE52/17AE52 Composite Materials	1. History of composites, 2. Natural composites, Hybrid composites, 3. Difference 4. between composites and alloys, Manufacturing process of fibers. 5. Comparison between Natural & Synthetic Composites 6. Compression Moulding process 7. Characterization of Composite Material 8. Failure analysis of composites	Prof. Vinay P Dr. Bino Prince Raja	The topics were taught in the class to bridge the gap in the curriculum.	Throughout the semester	PO1, PO2, PO3, PO9, PO10, PO12, PSO1, PSO2

	varies from Conventional methods 9. Composites in Aerospace Industry				
15AE564 Basics of Rockets & Missiles	1. Burn rate, 2. Burning 3. Surface Area 4. Calculation of Range 5. Range Equation.	Prof. Praveen. N	The topics were taught in the class to bridge the gap in the curriculum and were covered through PPT and you tube videos	Throughout the semester	PO1, PO2, PO3, PO9, PO12, PSO1, PSO2
15AE62 Gas turbine Technology	1. Examples of Turboprop engine 2. Examples of Turbofan engines 3. Examples of turbojet engine 4. Recent trends in design & development of compressors 5. Sound suppression and thrust 6. Health monitoring of Engines 7. Engine Testing	Prof. Deepa M S	The topics were taught in the class to bridge the gap in the curriculum. NPTEL and YouTube videos on these topics were given to the students.	Throughout the semester	PO1, PO2, PO3, PO4, PO5, PO9, PO10 PO12, PSO1, PSO2
15AE663 /17AE654 Finite Element Method	1. Matrix and Numerical methods for differential equations, 2. Types of Beams, 3. Loads and reactions, Relationship between loads, shear force and bending moment, 4. Bending moment for cantilever beam	Prof. Vinay P	The topics were taught in the class to bridge the gap in the curriculum. More problems were solved and given as assignment	Throughout the semester	PO1, PO2, PO3, PO12,
18AE654 Theory of Vibrations	1. Effect of vibration on machines like lathe, shaping machine, milling machine and shaper. 2. Materials used in machinery to dampen vibration 3. Fourier theorem basics 4. Vibration measurement using transducers 5. Experimental modal analysis 6. Electrical analogous of mechanical systems 7. Degree of freedom of different mechanisms and its importance	Prof. Mithun P S	1. The topics were taught in the class to bridge the gap in the curriculum. 2. More problems were solved and given as assignment	Throughout the semester	PO1, PO2, PO3, PO4, PO12, PSO1
15AE661 Unmanned Aerial Vehicle	1. Applications of UAV 2. Basic forces experienced by UAV during Flight 3. Types of sensors used in A/c Industry 4. Thrust required and power required for Jet and Propeller driven a/c 5. UAV Applications in Agriculture and other industry	Dr. Bino Prince Raja	The topics were taught in the class to bridge the gap in the curriculum. NPTEL and YouTube videos on these topics were given to the students. Projects on modeling UAVs was given	Throughout the semester	PO1,PO2, PO3,PO4, PO5,PO12 PSO1, PSO2

15AE71 Control Engineering	1. Basic Electrical concepts and terms, 2. Mathematical model, 3. Stability of the system, 4. Usage of Semi log graph sheets	Prof. Vinay P	The topics were taught in the class to bridge the gap in the curriculum. More problems were solved and given as assignment	Throughout the semester	PO1, PO2, PO3, PO4, PO9, PSO1
15AE72 Computational Fluid Dynamics	1. Application and examples of flow models 2. Application and examples of flow problems 3. Uses of CFD & its application and case studies, 4. application of structural grids for different types of flow models 5. Advantages and disadvantages of their approaches 6. Problem on transformation from physical or computational domain 7. Application of their scheme and differences	Prof. Deepa M S	The topics were taught in the class to bridge the gap in the curriculum. NPTEL and YouTube videos on these topics were given to the students. Assignment on miniproject using ANSYS was given	Throughout the semester	PO1, PO2, PO3, PO4, PO5, PO9, PO10 PO12, PSO1, PSO2
15AE743 Helicopter Dynamics	1. Introduction to Rotor crafts 2. Definitions Comparison 3. Components of Helicopter 4. Different configurations with pics & video	Prof. Chandrika MB	The topics were taught in the class to bridge the gap in the curriculum and were covered through PPT and you tube videos	Throughout the semester	PO1, PO2, PO3, PO9, PO12, PSO1, PSO2
15AE82 Flight Vehicle Design –	1. Bird Strike 2. Method to find out Airfoil from the wing (Group task) 3. Development of Quadcopter 4. A/c Lighting System 5. Cockpit Meaning 6. Palm copter	Prof. Adithya A.R	The topics were taught in the class to bridge the gap in the curriculum and were covered through PPT and you tube videos	Throughout the semester	PO1, PO2, PO3, PO4, PO5, PO8, PO9, PO10, PO11, PO12, PSO1, PSO2
15AE831 Flight Testing	1. Flight testing parameters for Aircraft Design process 2. How Errors can be avoided in Aircraft Design Process 3. Other Stability Parameters 4. Flight Testing Requirements for Civil & Military aircraft	Dr. Bino Prince Raja	The topics were taught in the class to bridge the gap in the curriculum. NPTEL and YouTube videos on these topics were given to the students	Throughout the semester	PO1, PO2, PO3, PSO2

B.2 Classification of Gaps

Based on the Table B2.1.1.4, the identified gaps are classified under four major categories:

1. Knowledge on modern tool usage
2. Fundamental concepts
3. Advanced topics and latest trends
4. General topics.

The gaps in Table B2.1.1.5are consolidate under above categories and theactions taken along with the remedial measures are listed down.

B3. Consolidation of Gaps and the Actions Taken:

Table B2.1.1.5: Gap Analysis and the Actions Taken

Sl. No	Categories	Gaps	Actions Taken	Remedial Measures
1	**Tools**	Simulation tools, Modelling tools, Solvers	1. Extra classes conducted for the subjects which needed more in-depth knowledge on tools 2. Tech talks were arranged to bring subject experts from reputed institutions/industries 3. Workshops were conducted for both students as well as faculties to get familiarity with the tools and languages 4. Making students to do some mini projects/projects in these areas for familiarization 5. Certification course in CATIA V5 from M/s EDS Technologies is organized by the department during semester vacation/weekends.	1. As a regular practice, all faculty meeting will happen thrice as minimum, in our department under the guidance of our HoD, AE. a. In the beginning of the semester b. In the middle of the semester c. In the end of the semester d. In the all-faculty meetings, issues like the content beyond syllabus/gaps in the subjects/curriculum will be discussed elaborately. 2. The identified gaps will be listed and remedial measures will be planned. 3. In the mid-sem meeting, the status of the remedial measures is monitored. 4. Through the Head of the Department, the identified gaps will be informed to the Board of Studies. 5. The progress as well as the final status will be discussed in the end-sem meeting 6. Stakeholders' opinion will be taken regularly to find out their expectations as well as current trends. That information will be again discussed in the staff meetings to plan for next course of action.
2	**Fundamental concepts**	Introduction to Mechanics of Materials. Propulsion, Structures. Aerodynamics	1. Extra classes allotted in the timetable itself for the subjects which needed more emphasis on the basics 2. If the concept can be explained by practical, then practical demo classes were arranged for those subjects 3. Using visual aids, simple audio or video lectures were shown to clarify the concepts 4. Assignments and seminars were given to make the students familiar with the concepts 5. Lecture notes were provided 6. Making students to do some mini projects in those areas for familiarization	
3	**Advanced concepts and trends**	Applications for Vibrations, Computational Fluid Dynamics, Stability and Control, Performance	1. Tech talks were arranged to bring subject experts from reputed institutions/industries 2. Workshops were conducted for both students as well as faculties to get familiarity 3. Encourage students to do internships in their vacation time to get familiar with the latest technologies 4. Emphasizing students to do their final year projects in the advanced concepts	

			5. Deputing faculties to attend workshops and seminars on the latest trends 6. Conducted National/International conference in the current trends to help the faculties/ students to update their knowledge as well as present their papers 7. Presented projects to KSCST to get funds for the innovative projects. This will motive the students to learn advanced concepts and try to implement them.	
4	**Advanced topics**	Recent trends in the field, testing facilities for various components of the aircraft.	1. Assignments were given 2. Lecture notes were provided 3. Extra experiments were conducted in the lab 4. Guidance is given to students to implement these concepts in their regular course end projects 5. Guest lectures and Industrial visits were organized	

2.1.2 State the delivery details of the content beyond the syllabus for theattainment of POs and PSOs (10)

A. Delivery details of Content beyond syllabus

The students need to be trained in the areas of modern tool usage, professional ethics, societal and environment needs and communication skills. Students will gain the idea to work as an individual and in team by doing project work, visiting various industries and by undergoing internships. Students actively participate in NCC, NSS and Swachh Bharath Abhiyan programs, organized in the college to serve the society. Students also participate in various Workshops, Seminars, Symposiums etc. Students also actively organize and participate in various events conducted as part of the Club activity which will enhance their project management skills in multidisciplinary environment. The department also motivates and encourage students to participate in events organized by other Institutes/Colleges.

- Assignments/Case Studies/ Mini Projects on Contemporary topics
- Additional Laboratory Experiments
- Training on Soft skills and Value Addition Programs
- Guest Lectures/Technical Talks/Demonstrations
- Workshops/Conferences/Symposium
- Student Chapter/Club Activity

- Industrial Visits and Internships
- Extension Activities- NSS/NCC/Blood Donation/Sports

B. Mapping of content beyond Syllabus with the POs & PSOs

Tables B 2.1.2.1 and B 2.1.2.2 show the mapping of content beyond syllabus with POs and PSOs respectively.

Table B2.1.2.1: Mapping of Content beyond Syllabus with POs

POs/Activity	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Assignments/Case Studies/ Mini Projects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Training on Soft Skills/ Value Added Course	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓
Guest Lectures/ Technical Talks/ Demonstrations	✓	✓	✓	✓		✓	✓					✓
Workshops/ Conferences/ Symposium	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Student Chapter/ Club Activity	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Industrial Visits & Internships	✓	✓	✓	✓		✓	✓			✓	✓	✓
Extension Activities/ NSS/NCC/Blood Donation/ Sports						✓	✓	✓	✓	✓	✓	✓

Table B2.1.2.2: Mapping of Content beyond Syllabus with PSOs

PSOs/Activity	PSO1	PSO2
Assignments/Case Studies/ Mini Projects	✓	✓
Training and Soft skills	✓	✓
Guest Lectures/ Technical Talks/ Demonstrations	✓	✓
Workshops/ Conferences / Symposium	✓	✓
Student Chapter/ Club Activity	✓	✓
Industrial Visits & Internships	✓	✓

Tables B 2.1.2.3, B2.1.2.4 and B2.1.2.5 shows the specific gaps and actions taken in last three years.

Table B 2.1.2.3: Gaps and the Actions Taken during 2020 – 2021

CAY (2020-21) - Gaps and the Actions Taken during 2020 - 2021

Sl. No.	Gap/Topic	ActionTaken	Date-Month-Year	Resource Person with Designation	% of Students	Relevance to POs and PSOs
1	Professional Development, career guidance, Job opportunities	Career Opportunities in Aeronautical and Aerospace Engineering	05/05/2021	Dr. Munikrishna Nagaram CTO, SandI Pvt. Ltd., Bengaluru	90%	PO6, PO7, PO8, PO11 PSO1, PSO2
2	Professional Development, Entrepreneurship	Technology Entrepreneur as a Career Option	07/05/2021	Dr. Nikhil Vijay Shinde Director, SandI Pvt. Ltd., Bengaluru	95%	PO6, PO7, PO8, PO11 PSO1, PSO2
4	Design/Develop Aircraft Products and Regulations/ specifications for design of aircraft	CFD Analysis of Fluid Flow and Heat transfer characteristics in Gas Turbine	10/05/2021	Dr. Arun Kumar G L Assistant Professor Department of Mechanical Engineering, NMIT, Bengaluru	85%	PO3, PO4, PSO1, PSO2
5	Design/Develop Aircraft Products and Regulations/ specifications for design of aircraft	Processing, Characterization & Applications of Advanced Materials	7/7/2021	Dr. Devaraj S Professor & Head(R&D) School of Mechanical Engineering, Reva University, Bengaluru	90%	PO3, PO4, PSO1, PSO2

Table B 2.1.2.4: Gaps and the Actions Taken during 2019 – 2020

CAYm1 (2019-20) - Gaps and the Actions Taken during 2019 - 2020

Sl. No.	Gap/Topic	ActionTaken	Date-Month-Year	Resource Person with Designation	% of Students	Relevance to POs andPSOs
1	Design/Develop Aircraft Products and Regulations/ specifications for design of aircraft	Webinar on "Stealth Technology"	20/8/2020	Mr. Isaac Christopher, Assistant Engineer (LEVEL 2), Boeing Defence Department, Bengaluru	90%	PO6, PO7, PO8, PO11 PSO1, PSO2
2	Design/Develop Aircraft Products and Regulations/ specifications for design of aircraft	Guest Lecture on "Ground Effect on Aircraft"	3/10/2019	Dr. Balakrishnan Narayan Rao, Professor, Indian Institute of Science, Bengaluru	100%	PO6, PO7, PO8, PO11 PSO1, POS2
3	Modern Tool Usage	CATIA V5 LEVEL I Programme	3.02.2020 to 29.02.2020 (Week End Classes)	M/s EDS Technologies, Bengaluru	30%	PO5, PO9, PO12, PSO11, PSO12

Table B 2.1.2.5: Gaps and the Actions Taken during 2018 – 2019

CAYm2 (2018-19) Gaps and the Actions Taken during 2018 - 2019

Sl. No	Gap/Topic	ActionTaken	Date- Month-Year	Resource Person with Designation	% of Students	Relevance to POs andPSOs
1	Design/Develop Aircraft Products and Regulations/ specifications for design of aircraft	Guest Lecture on "Design of Typical fighter Aircraft"	8/04/2019	Dr. H K Narahari, Professor, Department of Automotive and Aeronautical Engineering Ramaiah University of Applied Sciences, Bengaluru	100%	PO6, PO7, PO8, PO11 PSO1, PSO2
2	Regulations/specifications for manufacturing and testing of aircraft and its components	Guest Lecture on "Ground Testing of Aircraft and engines"	8/4/2019	Dr. T R Rajanna, General Manager, AERDC, HAL, Bengaluru	100%	PO6, PO7, PO8, PO11 PSO1, PSO2
3	Industry Institute Interaction	Roadshow on Industry-Institute Interaction	25/9/2018	Confederation of Indian Industry	20%	PO9, PO10, PO11, PO12 PSO1, PSO2

Table B 2.1.2.6: Gaps and the Actions Taken during 2017 – 2018

CAYm3 (2017-18) Gaps and the Actions Taken during 2017 - 2018

Sl. No	Gap/Topic	ActionTaken	Date- Month-Year	Resource Person with Designation	% of Students	Relevance to POs andPSOs
1	Modern Tool Usage	CATIA V5 LEVEL I Programme	17th March 2018 to 27th May 2018(on Saturdays and Sundays)	M/s EDS Technologies, Bengaluru	50%	PO5, PO9, PO12, PSO11, PSO12
2	Modern Tool Usage, ethics, Individual and Team Work, Communication, Project Management and finance, Lifelong learning	AVION -2018 (Club Activity)	10th and 11th May 2018	Club Activity	80%	PO6, PO7, PO8, PO9 PO10, PO11, PO12 PSO1, PSO2
3	Maintain and service of Aircraft products	Guest Lecture on "Gas Turbine Life Cycle Cost Optimization"	1st March 2018	Mr. Andrew Swingler, Director of Assystem, Bengaluru	100%	PO4, PO5, PO9, PO10, PO11, PO12 PSO1, PSO2
4	Service and market Aircraft products and endeavor to improve solutions	Workshop on Agile Systems	28th October 2017	TCS Team lead by Wg. Cdr. Haridas	100%	PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2
5	Design and Develop Aerospace products and learn, adopt the regulations/ specifications for design	GUEST Lecture on "Design and Development of Aircraft Power Plants for Fighter Aircraft"	7th April 2017	Dr. R K Mishra, CEMILAC (DRDO)	100%	PO6, PO7, PO8, PO11, PO12 PSO1, POS2

C. On-Campus Skill Development Courses Conducted by External Professional Trainers:

Table B 2.1.2.6 gives the on-campus skill development courses conducted by external professional trainers.

Skill Development Courses	Trainers
Soft Skills	ZestTech, Hit Bulls Eye, Infosys Springboard, Corempo
Aptitude -Fundamentals	
Aptitude - Advanced	

Table B 2.1.2.6: On-Campus Skill Development Courses by External Professional Trainers

2.2. Teaching - Learning Processes (100)

2.2.1. Describe Processes followed to improve quality of Teaching & Learning (25)

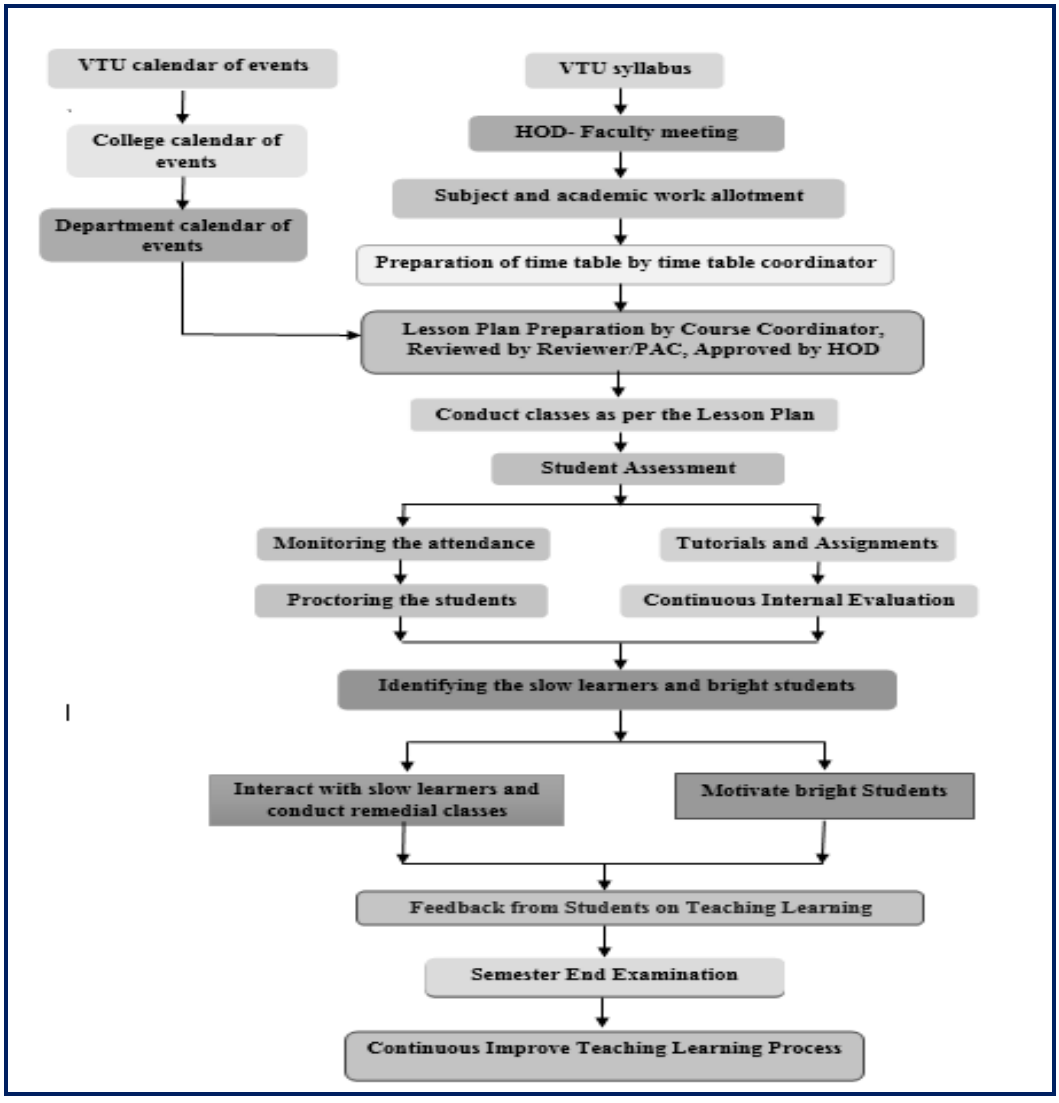


Figure 2.2.1.1 Process followed for Teaching and Learning

Figure 2.2.1.1 describes the sequence of events and steps followed in Teaching Learning Process. Figure 2.2.1.2 shows the teaching aids in learning process.

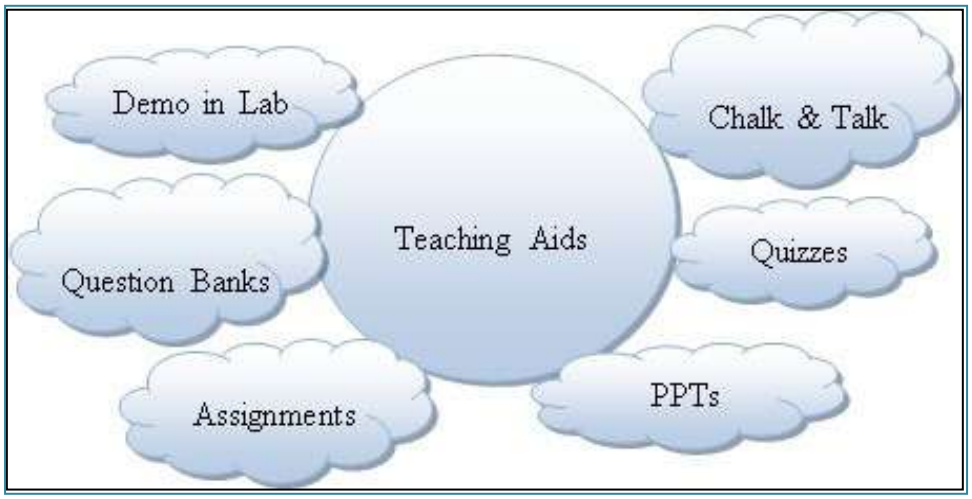


Figure 2.2.1.2: Components of Teaching Learning Process

2.2.1.1 Adherence to Academic Calendar (Institute and Department calendar)

Institutional Calendar is prepared every semester in line with the University academic calendar. It contains the events of the University and the events of the Institute which are useful in overall development of the students. Major events are earmarked and the date of conduction of these events is mentioned in the Academic Calendar. The Principal, IQAC and the College management makes sure that the events are organized as per the planned schedule.

Features of Academic Calendar:

The SJCIT's Calendar of Events is prominently displayed on all notice boards and circulated to students at the beginning of the semester. The academic calendar prepared defines the schedule for various activities such as:

- Commencement and Closure of Classes
- Orientation Program schedules
- List of Holidays (as announced by Karnataka State)
- Internal Assessment (IA) Test Schedule
- Project Presentation/Open House/Assignment Submission/Seminars/ PersonalityDevelopment Program
- Techno-cultural / Sports events, etc.
- Technical talks
- Final Internal Lab Assessment /Test

- Based on the information listed above, teachers estimate number of classes available during the semester and appropriately prepare the lesson plan

- The planning and organizing of various co-curricular and extracurricular activities and festivals like- Independence Day, Republic Day, Rajyostava, Ganesha Chaturthi, Dandiya, Ayudha Pooja, Ramanavami, etc. are celebrated by the college, by involving staff, student cultural bodies.
- The schedule and conduction of Internal Assessments by all the departments will be as per the calendar of events. Three tests are planned in each semester: the first test is planned six weeks after the commencement of classes, second test during the tenth week and the third being towards the end of the semester.
- Final Lab Assessment Week is scheduled in the College Calendar of Events, whereas the Cycle-wise Lab tests are scheduled at the department level.
- Minor changes in the calendar of events are informed through Circulars to all Departments.

Department Calendar of Events is prepared in line with the Institution Calendar of Events. This includes events like technical talks to augment the subject knowledge, Orientation programme schedule, class teachers and proctors meet, progress report reviewmeet schedule, monitoring bright students and weak students, workshops for enhancing the fundamentals in advanced concepts, practicing projects schedule, mini and main project work schedule, departmental fest schedule, lab tests schedule etc.,

Figures 2.2.1.3 shows the sample University Calendar of Events. Figures 2.2.1.4 and 2.2.1.5 show the sample Calendar of Events of the Institute and the department respectively.

University Calendar of Events:

Academic Calendar for ODD Semester of UG programmes for year 2021-22

	V semester B.E./B.Tech.	V semester B.Arch./ B.Plan.	VII semester B.E./B.Tech.	VII semester B.Plan./B.Arch	IX semester B.Arch	III semester B.E./ B.Tech.	III Semester B.Arch.	III semester B. Plan	I semester B.E./B.Tech.	I semester B.Arch/B.Plan
Commencement of ODD Semester	01.10.2021	01.10.2021	01.10.2021	01.10.2021	01.10.2021	18.10.2021	18.10.2021	18.10.2021		
Last Working day of ODD Semester	31.01.2022	31.01.2022	31.01.2022	31.01.2022	31.01.2022	19.02.2022	19.02.2022	19.02.2022		
Practical Examination	01.02.2022 To 10.02.2022	01.02.2022 To 10.02.2022	01.02.2022 To 10.02.2022	01.02.2022 To 10.02.2022	---	21.02.2022 To 04.03.2022	21.02.2022 To 04.03.2022	21.02.2022 To 04.03.2022		
Theory Examinations	11.02.2022 To 25.03.2022	11.02.2022 To 25.03.2022	11.02.2022 To 25.03.2022	11.02.2022 To 25.03.2022	---	07.03.2022 To 25.03.2022	07.03.2022 To 25.03.2022	07.03.2022 To 25.03.2022	Will be announced later	
Internship	---	---	---	---	---	---	---	---		
Internship Viva Voce/ Project viva	---	---	---	---	---	---	---	---		
Summer Project / Professional training / Organization Study	---	---	---	---	---	---	---	---		
Submission of the report to University	---	---	---	---	---	---	---	---		
Commencement of EVEN Semester	04.04.2022	04.04.2022	04.04.2022	04.04.2022*	07.02.2022	11.04.2022	11.04.2022	11.04.2022		

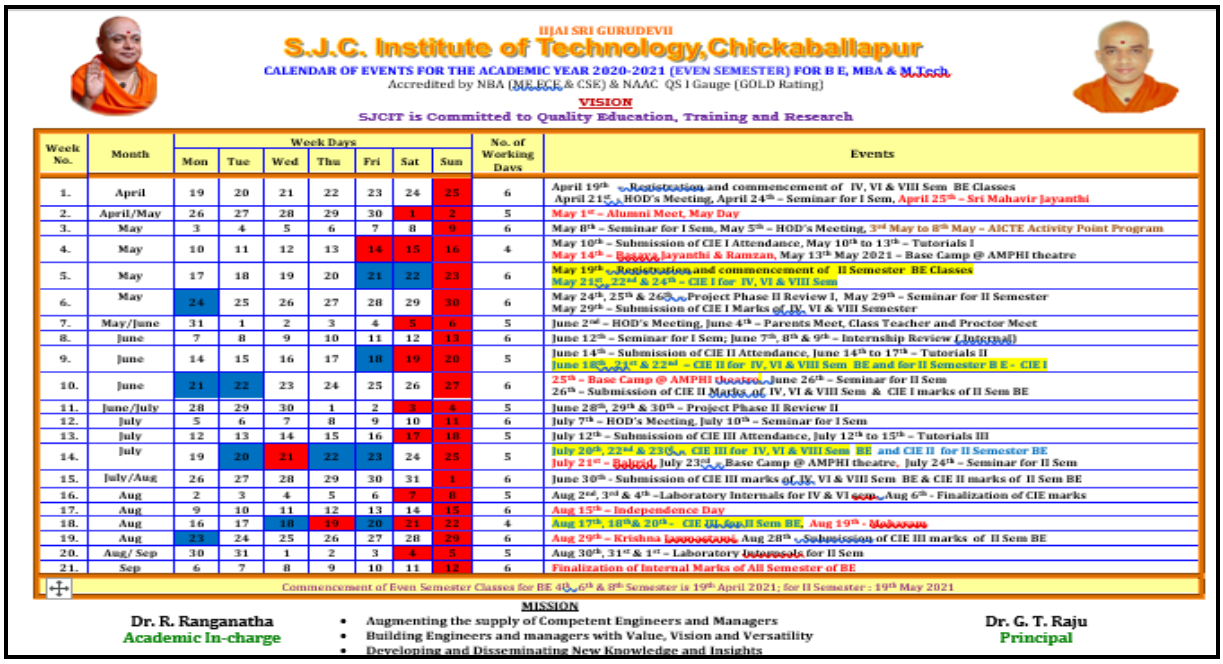
Please Note:

- The academic sessions for ODD semesters should commence from the **dates mentioned** above.
- The Institute needs to function for **six days** a week with additional hours (**Saturday is a full working day**). #if required the college can plan to have extra classes even on Sundays also.
- Faculty should conduction additional tutorial classes ONLINE to solve the doubts of the students.
- The faculty/staff shall be available to undertake any work assigned by the university.
- Notification regarding the Calendar of Events relating to the conduct of University **Examinations** will be issued by the Registrar (Evaluation) from time to time.
- Academic Calendar **may be modified** based on guidelines/directions issued in the future by MHRD/UGC/AICTE/State Government.
- Academic Calendar is also applicable for **Autonomous Colleges.** In case if any changes are to be effected by Autonomous Colleges in the academic terms and examination schedule, they could do so with the approval of the University.
- The offline classes may be conducted either by **staggering** the timings in 02 sessions in a day with 50% capacity for each session or full day session with 50% capacity on alternative days, following all SOPs.
- The college has to conduct offline classes to cover **80%** of the syllabus of the courses; however, **20%** of the syllabus can be covered in virtual (Online) mode. **Attendance** of the students' for offline and online classes is mandatory and record should be maintained and submitted to university whenever informed.
- Students joining to VII semester B.E./B.Tech., should complete the **Internship** before the commencement of the classes.

REGISTRAR

Figure 2.2.1.3: University Calendar of Events (April 2021 – September 2021)

Academic calendar of events of College for Even semester 2020-21:



IIJAI SRI GURUDEVII

S.J.C. Institute of Technology,Chickaballapur

CALENDAR OF EVENTS FOR THE ACADEMIC YEAR 2020-2021 (EVEN SEMESTER) FOR B E, MBA & M.Tech.

Accredited by NBA (ME,ECE,& CSE) & NAAC QS I Gauge (GOLD Rating)

VISION

SJCIT is Committed to Quality Education, Training and Research

Week No.	Month	Week Days							No. of Working Days	Events
		Mon	Tue	Wed	Thu	Fri	Sat	Sun		
1.	April	19	20	21	22	23	24	25	6	April 19th – Registration and commencement of IV, VI & VIII Sem BE Classes April 21st – HOD's Meeting, April 24th – Seminar for I Sem, April 25th – Sri Mahavir Jayanthi
2.	April/May	26	27	28	29	30	1	2	5	May 1st – Alumni Meet, May Day
3.	May	3	4	5	6	7	8	9	6	May 8th – Seminar for I Sem, May 5th – HOD's Meeting, 3rd May to 8th May – AICTE Activity Point Program
4.	May	10	11	12	13	14	15	16	4	May 10th – Submission of CIE I Attendance, May 10th to 13th – Tutorials I May 14th – Basava Jayanthi & Ramzan, May 13th May 2021 – Base Camp @ AMPHI theatre
5.	May	17	18	19	20	21	22	23	6	May 19th – Registration and commencement of II Semester BE Classes May 21st, 22nd & 24th – CIE I for IV, VI & VIII Sem
6.	May	24	25	26	27	28	29	30	6	May 24th, 25th & 26th – Project Phase II Review I, May 29th – Seminar for II Semester May 29th – Submission of CIE I Marks of IV, VI & VIII Semester
7.	May/June	31	1	2	3	4	5	6	5	June 2nd – HOD's Meeting, June 4th – Parents Meet, Class Teacher and Proctor Meet
8.	June	7	8	9	10	11	12	13	6	June 12th – Seminar for I Sem; June 7th, 8th & 9th – Internship Review I (Internal)
9.	June	14	15	16	17	18	19	20	5	June 14th – Submission of CIE II Attendance, June 14th to 17th – Tutorials II June 18th, 21st & 22nd – CIE II for IV, VI & VIII Sem BE and for II Semester B E - CIE I
10.	June	21	22	23	24	25	26	27	6	25th – Base Camp @ AMPHI theatre, June 26th – Seminar for II Sem 26th – Submission of CIE II Marks of IV, VI & VIII Sem & CIE I marks of II Sem BE
11.	June/July	28	29	30	1	2	3	4	5	June 28th, 29th & 30th – Project Phase II Review II
12.	July	5	6	7	8	9	10	11	6	July 7th – HOD's Meeting, July 10th – Seminar for I Sem
13.	July	12	13	14	15	16	17	18	5	July 12th – Submission of CIE III Attendance, July 12th to 15th – Tutorials III
14.	July	19	20	21	22	23	24	25	5	July 20th, 22nd & 23rd – CIE III for IV, VI & VIII Sem BE and CIE II for II Semester BE July 21st – Bakrid, July 23rd – Base Camp @ AMPHI theatre, July 24th – Seminar for II Sem
15.	July/Aug	26	27	28	29	30	31	1	6	June 30th - Submission of CIE III marks of IV, VI & VIII Sem BE & CIE II marks of II Sem BE
16.	Aug	2	3	4	5	6	7	8	5	Aug 2nd, 3rd & 4th –Laboratory Internals for IV & VI sem, Aug 6th - Finalization of CIE marks
17.	Aug	9	10	11	12	13	14	15	6	Aug 15th – Independence Day
18.	Aug	16	17	18	19	20	21	22	4	Aug 17th, 18th & 20th - CIE III for II Sem BE, Aug 19th - Muharram
19.	Aug	23	24	25	26	27	28	29	6	Aug 29th – Krishna Janmashtami, Aug 28th – Submission of CIE III marks of II Sem BE
20.	Aug/ Sep	30	31	1	2	3	4	5	5	Aug 30th, 31st & 1st – Laboratory Internals for II Sem
21.	Sep	6	7	8	9	10	11	12	6	Finalization of Internal Marks of All Semester of BE

Commencement of Even Semester Classes for BE 4th, 6th & 8th Semester is 19th April 2021; for II Semester : 19th May 2021

MISSION

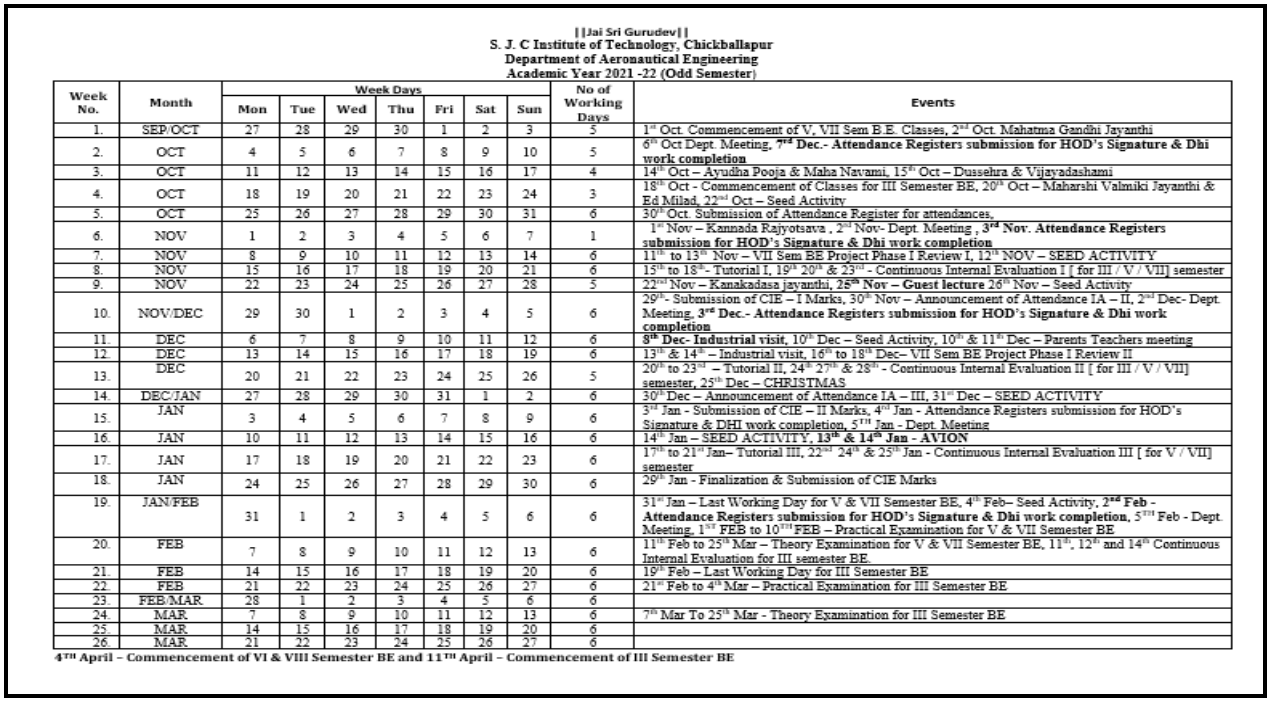
- Augmenting the supply of Competent Engineers and Managers
- Building Engineers and managers with Value, Vision and Versatility
- Developing and Disseminating New Knowledge and Insights

Dr. R. Ranganatha
Academic In-charge

Dr. G. T. Raju
Principal

Figure 2.2.1.4: College Calendar of Events (April 2021 – September 2021)

Academic calendar of events of the Department of Aeronautical Engineering for ODD semester 2021-22:



||Jai Sri Gurudev||

S. J. C Institute of Technology, Chickballapur

Department of Aeronautical Engineering

Academic Year 2021 -22 (Odd Semester)

Week No.	Month	Week Days							No of Working Days	Events
		Mon	Tue	Wed	Thu	Fri	Sat	Sun		
1.	SEP/OCT	27	28	29	30	1	2	3	5	1st Oct. Commencement of V, VII Sem B.E. Classes, 2nd Oct. Mahatma Gandhi Jayanthi
2.	OCT	4	5	6	7	8	9	10	5	6th Oct Dept. Meeting, **7th Dec.- Attendance Registers submission for HOD's Signature & Dhi work completion**
3.	OCT	11	12	13	14	15	16	17	4	14th Oct – Ayudha Pooja & Maha Navami, 15th Oct – Dussehra & Vijayadashami
4.	OCT	18	19	20	21	22	23	24	3	18th Oct - Commencement of Classes for III Semester BE, 20th Oct – Maharshi Valmiki Jayanthi & Ed Milad, 22nd Oct – Seed Activity
5.	OCT	25	26	27	28	29	30	31	6	30th Oct. Submission of Attendance Register for attendances,
6.	NOV	1	2	3	4	5	6	7	1	1st Nov – Kannada Rajyotsava , 2nd Nov- Dept. Meeting , **3rd Nov. Attendance Registers submission for HOD's Signature & Dhi work completion**
7.	NOV	8	9	10	11	12	13	14	6	11th to 13th Nov – VII Sem BE Project Phase I Review I, 12th NOV – SEED ACTIVITY
8.	NOV	15	16	17	18	19	20	21	6	15th to 18th- Tutorial I, 19th 20th & 23rd – Continuous Internal Evaluation I [for III / V / VII] semester
9.	NOV	22	23	24	25	26	27	28	5	22nd Nov – Kanakadasa jayanthi, **25th Nov – Guest lecture** 26th Nov – Seed Activity
10.	NOV/DEC	29	30	1	2	3	4	5	6	29th- Submission of CIE – I Marks, 30th Nov – Announcement of Attendance IA – II, 2nd Dec- Dept. Meeting, **3rd Dec.- Attendance Registers submission for HOD's Signature & Dhi work completion**
11.	DEC	6	7	8	9	10	11	12	6	**8th Dec- Industrial visit**, 10th Dec – Seed Activity, 10th & 11th Dec – Parents Teachers meeting
12.	DEC	13	14	15	16	17	18	19	6	13th & 14th – Industrial visit, 16th to 18th Dec– VII Sem BE Project Phase I Review II
13.	DEC	20	21	22	23	24	25	26	5	20th to 23rd – Tutorial II, 24th 25th & 28th - Continuous Internal Evaluation II [for III / V / VII] semester, 25th Dec – CHRISTMAS
14.	DEC/JAN	27	28	29	30	31	1	2	6	30th Dec – Announcement of Attendance IA – III, 31st Dec – SEED ACTIVITY
15.	JAN	3	4	5	6	7	8	9	6	3rd Jan - Submission of CIE – II Marks, 4th Jan - Attendance Registers submission for HOD's Signature & DHI work completion, 5TH Jan - Dept. Meeting
16.	JAN	10	11	12	13	14	15	16	6	14th Jan – SEED ACTIVITY, **13th & 14th Jan - AVION**
17.	JAN	17	18	19	20	21	22	23	6	17th to 21st Jan– Tutorial III, 22nd 24th & 25th Jan - Continuous Internal Evaluation III [for V / VII] semester
18.	JAN	24	25	26	27	28	29	30	6	29th Jan - Finalization & Submission of CIE Marks
19.	JAN/FEB	31	1	2	3	4	5	6	6	31st Jan – Last Working Day for V & VII Semester BE, 4th Feb– Seed Activity, **2nd Feb - Attendance Registers submission for HOD's Signature & Dhi work completion**, 5TH Feb - Dept. Meeting, 1ST FEB to 10TH FEB – Practical Examination for V & VII Semester BE
20.	FEB	7	8	9	10	11	12	13	6	11th Feb to 25th Mar – Theory Examination for V & VII Semester BE, 11th, 12th and 14th Continuous Internal Evaluation for III semester BE.
21.	FEB	14	15	16	17	18	19	20	6	19th Feb – Last Working Day for III Semester BE
22.	FEB	21	22	23	24	25	26	27	6	21st Feb to 4th Mar – Practical Examination for III Semester BE
23.	FEB/MAR	28	1	2	3	4	5	6	6	
24.	MAR	7	8	9	10	11	12	13	6	7th Mar To 25th Mar - Theory Examination for III Semester BE
25.	MAR	14	15	16	17	18	19	20	6	
26.	MAR	21	22	23	24	25	26	27	6	

4TH April – Commencement of VI & VIII Semester BE and 11TH April – Commencement of III Semester BE

Figure 2.2.1.5 Academic Calendar of Events of department for ODD semester

2.2.1.2 Initiatives to improve Instruction Methods to focus on Student Centric Learning

Classroom Teaching:

The lecture delivery by the faculty is through a set of educational technology/tools such as

- Chalk and Talk - Lecturing is done using green/black board.
- Power Point Presentation (PPT).
- Demonstration in Lab
- Usage of Charts & Models
- Assignments, Question bank and Quiz

- **Creative thinking to enhance student learning**

Students are assigned to do mini projects and case studies and its plan of work so that they can focus on developing creativity and build up confidence through hands-on projects.

- **Focused group study**

Students are divided into specific groups and are assigned specific topics related to curricular learning. These groups study the topics in detail through library books, internet, and library journals. Thereafter, the topics are presented as Seminars in the classroom in front of faculty as well as their peer classmates. This will make the students confident by having healthy discussions on their topic and the students can present their topics as paper in National or International conferences, if possible.

- **Simulation classes and labs**

Topics are explained to students in class rooms with e-content in the form of animation and working pictures from YouTube to make them understand more clearly about the concepts and mechanisms and their application in real life.

- **ICT usage**

Students are provided with knowledge and proficiency in the usage of ICTs. These ICTs enable both teachers and students to effectively involve in teaching learning process. Special training is offered to the students in the lab using ICTs on regular basis.

- **Problem based learning: Student-directed learning**

Attempts are made to create excitement in the classroom through posing problems related to the topic and finding solutions thereby presenting and learning the topic, which ensures students do more than listening through active participation.

- **Maintenance of Course files:**

For each course, a course file is prepared by the concerned faculty. The course file consists of following items.

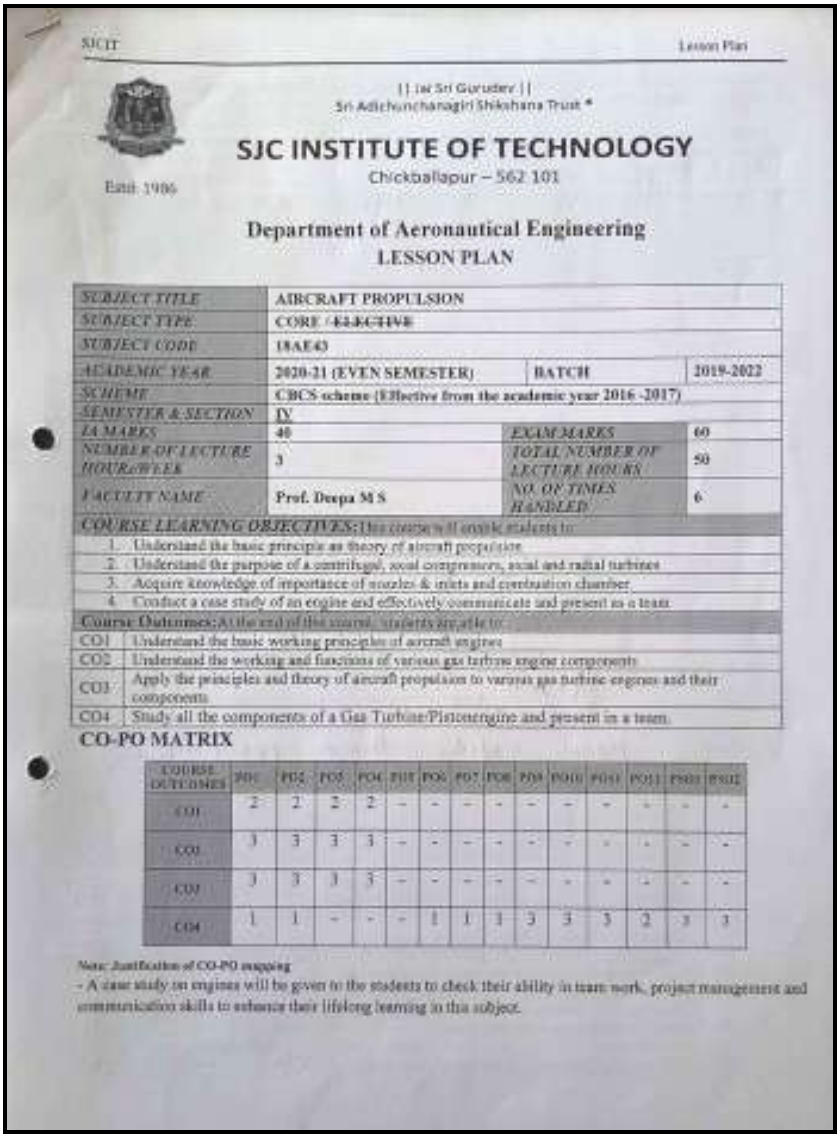
a. Teaching plan:

The department envisages on developing and deploying Teaching plan for each of the subjects. This involves:

- Preparation of lesson plan covering the entire prescribed syllabus
- Development of study material in various formats (.doc, .pdf, .ppt, etc.)
- The faculty selects the appropriate teaching Methodology for every module: say using black board for initial introduction and concept presentation, short video / slide presentations for advanced conceptpresentation, etc.
- Conceptualizing the current trends by announcing themes / topics for seminars, case studies and mini projects well in advance.
- Preparation of question bank for both theory and lab
- Setting of model question papers in case of non-availability of previous university question paper – as in case of syllabus revision
- Assignment Questions for practice of the current problems (in numerical subjects such as Aerothermodynamics, Mechanics of fluid, Turbomachines etc.) and revision of the completed chapters (say in Aerodynamics, Aircraft Structures etc.).
- The distribution of the course material including the question bank among the students will be done during the semester.
- Lesson plans, course files and work diaries are maintained by each faculty for their respective courses and are reviewed periodically by HoD.
- Members of IQAC consisting of Principal, IQAC Chairman and concerned HoD are entrusted with the responsibility of carrying out the academic audit of the faculty members with regard to their capabilities, preparation and performance. The academic audit is structured in a systematic and scientific way to review the academic system for improvement of quality. It is a faculty-driven model of ongoing self-reflection, peer feedback, collaboration and teamwork based on structured conversation to improve quality in teaching and learning.
- The proforma of the presentation is designed to capture not only the adequacy and competence of the faculty, but also helps to evaluate the efficiency of the techniques used in the Teaching-Learning process and also to provide suggestions for the professional development of the faculty leading to an improvement in the teaching-learning process.

b. The Course Objectives are defined for each course in line with the POs.

c. Lesson Plan: Lesson plan is prepared for each course by the faculty before the commencement of the semester and it is duly approved after a thorough scruitiny by the HoD. The lesson plan encompasses the learning outcomes and the assessment of outcomes. Figures 2.2.1.7 to 2.2.1.9 shows the sample lesson plan with COs and CO-PO matrix, Module wise content coverage, textbooks and references etc.,



SJCIT Lesson Plan

|| Jai Sri Gurudev ||
Sri Adichunchanagiri Shikshana Trust ®

Estd: 1986

SJC INSTITUTE OF TECHNOLOGY
Chickballapur – 562 101

Department of Aeronautical Engineering
LESSON PLAN

SUBJECT TITLE	AIRCRAFT PROPULSION		
SUBJECT TYPE	CORE / ~~ELECTIVE~~		
SUBJECT CODE	18AE43		
ACADEMIC YEAR	2020-21 (EVEN SEMESTER)	BATCH	2019-2022
SCHEME	CBCS scheme (Effective from the academic year 2016 -2017)		
SEMESTER & SECTION	IV		
IA MARKS	40	*EXAM MARKS*	60
NUMBER OF LECTURE HOURS/WEEK	3	*TOTAL NUMBER OF LECTURE HOURS*	50
FACULTY NAME	Prof. Deepa M S	*NO. OF TIMES HANDLED*	6

COURSE LEARNING OBJECTIVES: This course will enable students to:

1. Understand the basic principle an theory of aircraft propulsion
2. Understand the purpose of a centrifugal, axial compressors, axial and radial turbines
3. Acquire knowledge of importance of nozzles & inlets and combustion chamber
4. Conduct a case study of an engine and effectively communicate and present as a team

Course Outcomes: At the end of this course, students are able to:

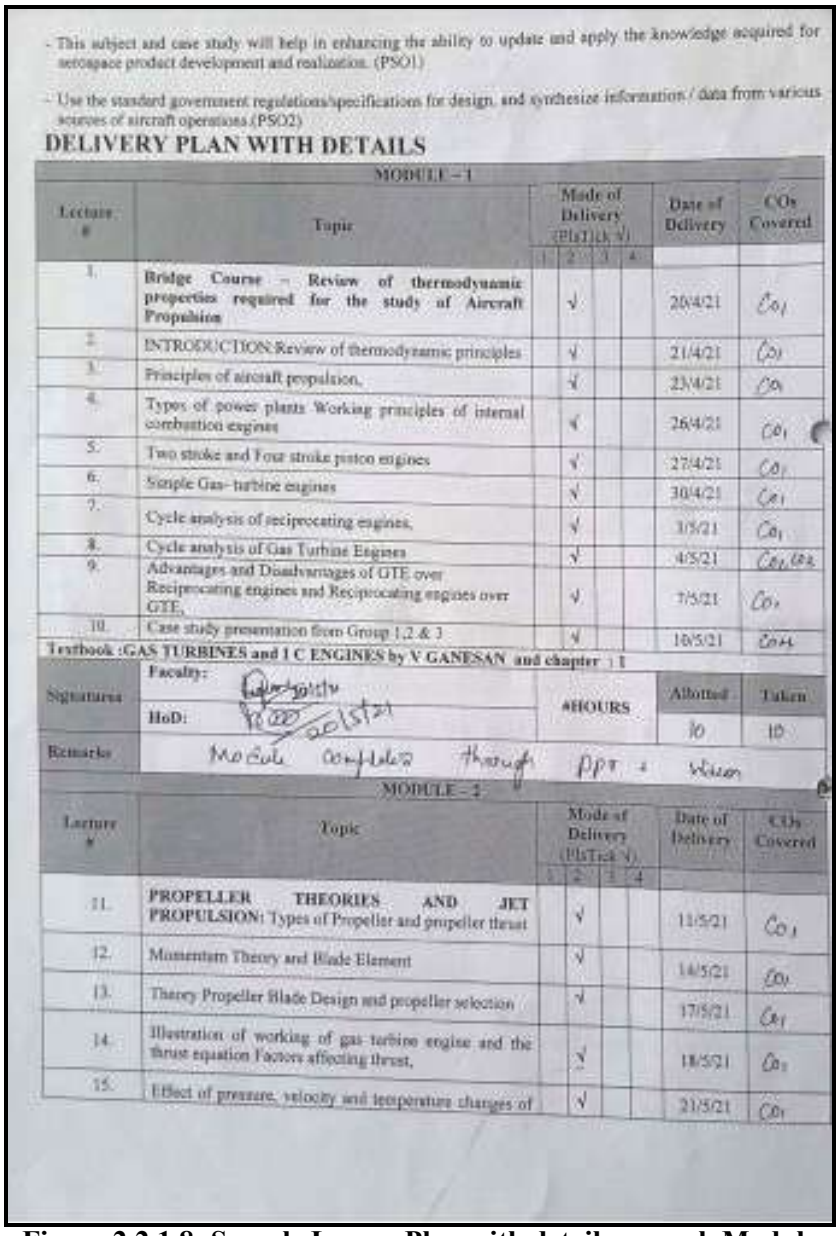
CO1	Understand the basic working principles of aircraft engines
CO2	Understand the working and functions of various gas turbine engine components
CO3	Apply the principles and theory of aircraft propulsion to various gas turbine engines and their components
CO4	Study all the components of a Gas Turbine/Piston engine and present as a team

CO-PO MATRIX

COURSE OUTCOMES	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	2	-	-	-	-	-	-	-	-	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-	-	-
CO3	3	3	3	3	-	-	-	-	-	-	-	-	-	-
CO4	1	1	-	-	-	1	1	1	3	3	3	2	3	3

Note: Justification of CO-PO mapping
- A case study on engines will be given to the students to check their ability in team work, project management and communication skills to enhance their lifelong learning in this subject.

Figure 2.2.1.7: Sample Lesson Plan with COs and CO-PO matrix



- This subject and case study will help in enhancing the ability to update and apply the knowledge acquired for aerospace product development and realization. (PSO1)
- Use the standard government regulations/specifications for design, and synthesize information / data from various sources of aircraft operations (PSO2)

DELIVERY PLAN WITH DETAILS

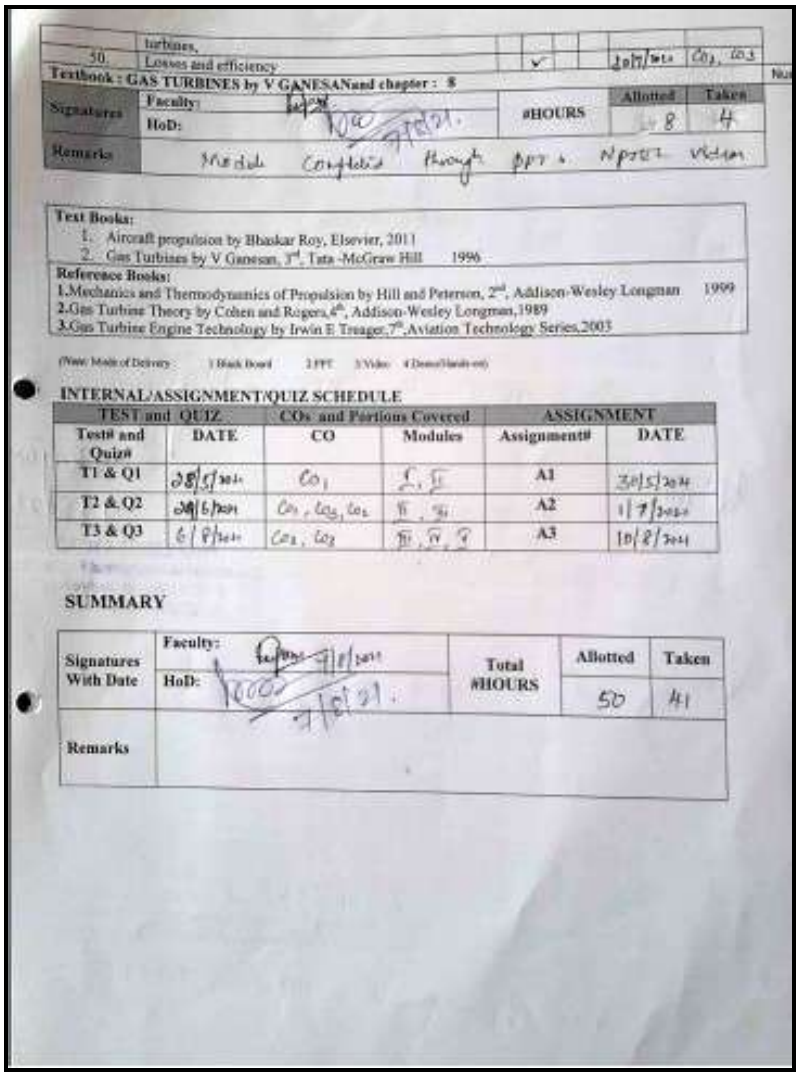
MODULE – 1							
Lecture #	Topic	Mode of Delivery (Pls Tick √) 1	2	3	4	Date of Delivery	COs Covered
1.	**Bridge Course – Review of thermodynamic properties required for the study of Aircraft Propulsion**	√				20/4/21	CO_1
2.	INTRODUCTION: Review of thermodynamic principles	√				21/4/21	CO_1
3.	Principles of aircraft propulsion,	√				23/4/21	CO_1
4.	Types of power plants Working principles of internal combustion engines	√				26/4/21	CO_1
5.	Two stroke and Four stroke piston engines	√				27/4/21	CO_1
6.	Simple Gas- turbine engines	√				30/4/21	CO_1
7.	Cycle analysis of reciprocating engines,	√				3/5/21	CO_1
8.	Cycle analysis of Gas Turbine Engines	√				4/5/21	CO_1, CO_2
9.	Advantages and Disadvantages of GTE over Reciprocating engines and Reciprocating engines over GTE,	√				7/5/21	CO_1
10.	Case study presentation from Group 1,2 & 3	√				10/5/21	CO4

Textbook :**GAS TURBINES and I C ENGINES by V GANESAN and chapter : 1**

Signatures	Faculty:	#HOURS	Allotted	Taken
	HoD:		10	10
Remarks	Module completed through PPT & Videos			

MODULE – 2							
Lecture #	Topic	Mode of Delivery (Pls Tick √) 1	2	3	4	Date of Delivery	COs Covered
11.	**PROPELLER THEORIES AND JET PROPULSION:** Types of Propeller and propeller thrust	√				11/5/21	CO_3
12.	Momentum Theory and Blade Element	√				14/5/21	CO_3
13.	Theory Propeller Blade Design and propeller selection	√				17/5/21	CO_3
14.	Illustration of working of gas turbine engine and the thrust equation Factors affecting thrust,	√				18/5/21	CO_3
15.	Effect of pressure, velocity and temperature changes of	√				21/5/21	CO_3

Figure 2.2.1.8: Sample Lesson Plan with details on each Module



	turbines,					
50.	Losses and efficiency	✓				

Textbook : GAS TURBINES by V GANESANand chapter : 8

			Allotted	Taken
Signatures	Faculty:	#HOURS	8	4
	HoD:			
Remarks	Module completed through ppt & Notes			

Text Books:
1. Aircraft propulsion by Bhaskar Roy, Elsevier, 2011
2. Gas Turbines by V Ganesan, 3rd, Tata -McGraw Hill 1996

Reference Books:
1.Mechanics and Thermodynamics of Propulsion by Hill and Peterson, 2nd, Addison-Wesley Longman 1999
2.Gas Turbine Theory by Cohen and Rogers,4th, Addison-Wesley Longman,1989
3.Gas Turbine Engine Technology by Irwin E Treager,7th,Aviation Technology Series,2003

(Note: Mode of Delivery 1 Black Board 2 PPT 3 Video 4 Demo/Hands-on)

INTERNAL/ASSIGNMENT/QUIZ SCHEDULE

TEST and QUIZ		COs and Portions Covered		ASSIGNMENT	
Test# and Quiz#	DATE	CO	Modules	Assignment#	DATE
T1 & Q1	28/5/2021	CO1	1, 2	A1	30/5/2021
T2 & Q2	28/6/2021	CO1, CO2, CO3	3, 4	A2	1/7/2021
T3 & Q3	6/8/2021	CO3, CO4	5, 6, 7	A3	10/8/2021

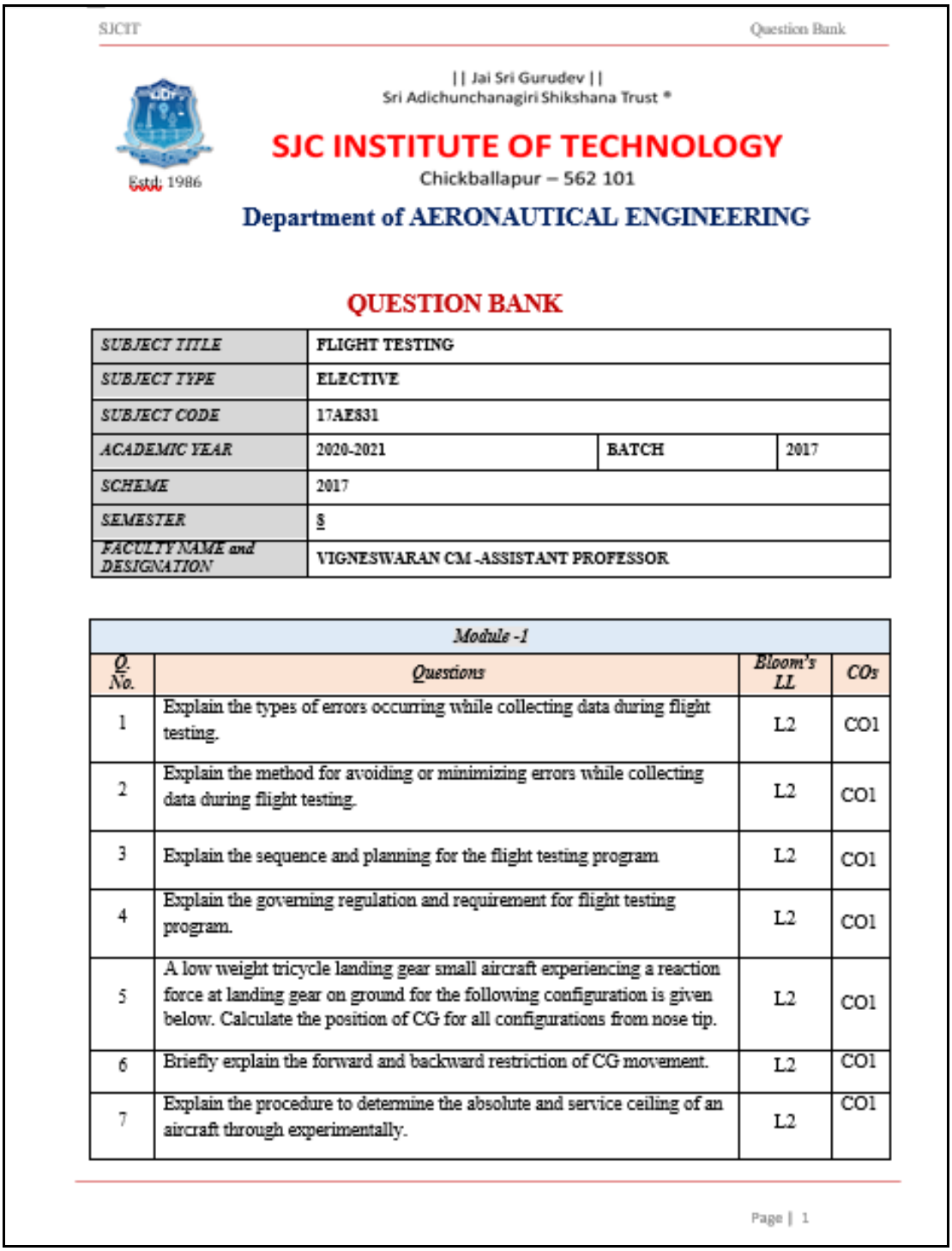
SUMMARY

			Allotted	Taken
Signatures With Date	Faculty:	Total #HOURS	50	41
	HoD:			
Remarks				

Figure 2.2.1.9: Sample Lesson Plan with details on text and reference books

d. Question Bank:

Question banks are prepared for each topic in the course based on the course objectives and considering the nature of the university question papers. The previous question papers of University are also maintained in the course files. The question banks will be shared to the students then and there on need basis. Figures 2.2.1.10a, 2.2.1.10b and 2.2.1.10c shows the sample question banks.



SJCIT Question Bank

|| Jai Sri Gurudev ||
Sri Adichunchanagiri Shikshana Trust ®

Estd: 1986

SJC INSTITUTE OF TECHNOLOGY

Chickballapur – 562 101

Department of AERONAUTICAL ENGINEERING

QUESTION BANK

SUBJECT TITLE	FLIGHT TESTING		
SUBJECT TYPE	ELECTIVE		
SUBJECT CODE	17AE831		
ACADEMIC YEAR	2020-2021	BATCH	2017
SCHEME	2017		
SEMESTER	8		
FACULTY NAME and DESIGNATION	VIGNESWARAN CM -ASSISTANT PROFESSOR		

Module -1			
Q. No.	*Questions*	*Bloom's LL*	*COs*
1	Explain the types of errors occurring while collecting data during flight testing.	L2	CO1
2	Explain the method for avoiding or minimizing errors while collecting data during flight testing.	L2	CO1
3	Explain the sequence and planning for the flight testing program	L2	CO1
4	Explain the governing regulation and requirement for flight testing program.	L2	CO1
5	A low weight tricycle landing gear small aircraft experiencing a reaction force at landing gear on ground for the following configuration is given below. Calculate the position of CG for all configurations from nose tip.	L2	CO1
6	Briefly explain the forward and backward restriction of CG movement.	L2	CO1
7	Explain the procedure to determine the absolute and service ceiling of an aircraft through experimentally.	L2	CO1

Page | 1

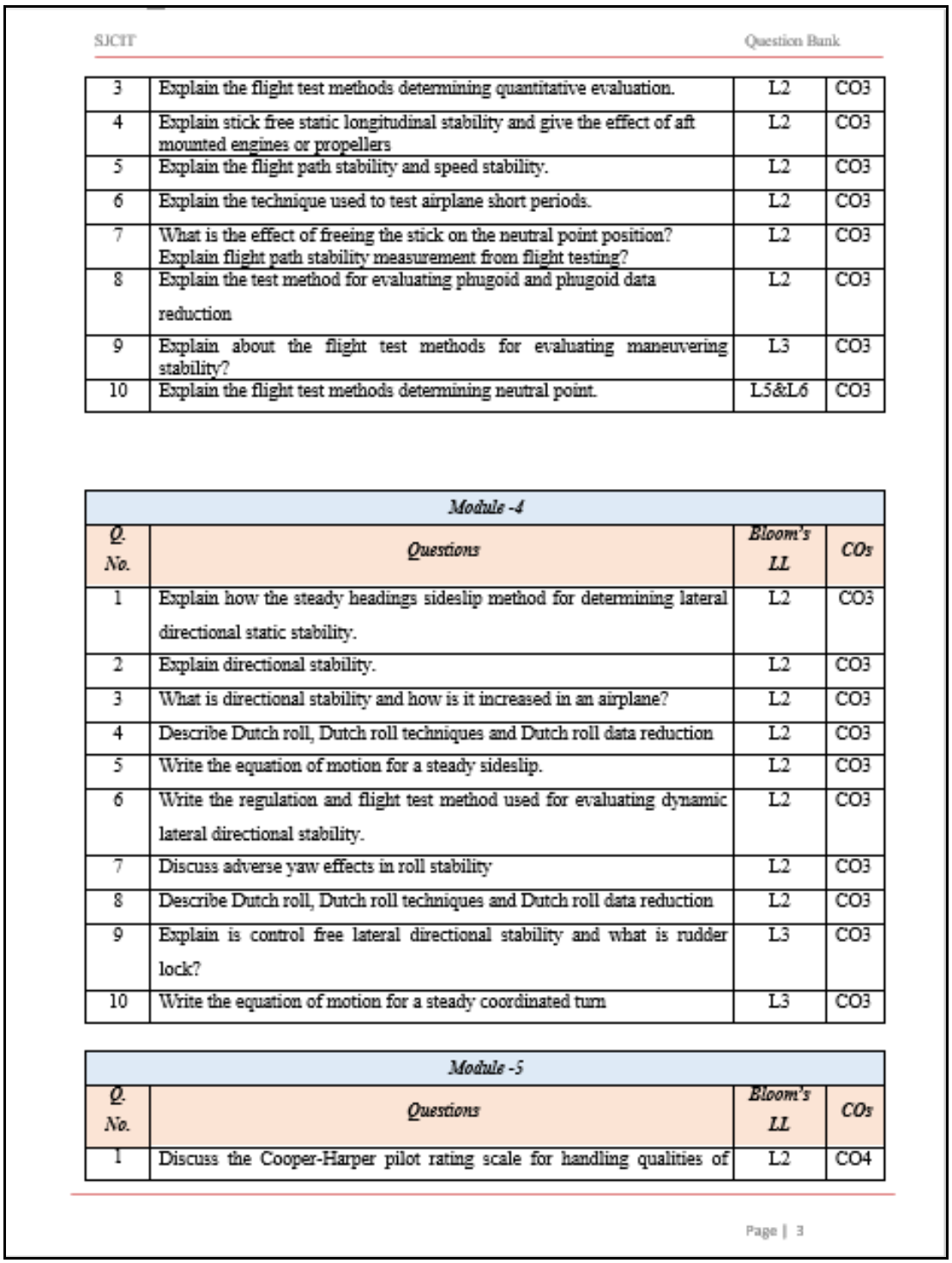
Figure 2.2.1.10a: Sample Question Bank

8	Explain the various methods used to calculate the takeoff and landing distance.	L2	CO1
9	Explain the sequence and planning for the flight-testing program	L3	CO1
10	Explain the FAR governing regulation and requirement for flight testing program.	L3	CO1

Module -2			
Q. No.	*Questions*	*Bloom's LL*	*COs*
1	Brief the test methods used for take-off and landing tests?	L2	CO2
2	Discuss the relationship between radius of turn, flight velocity and load factor during a steady level turn?	L2	CO2
3	Derive the expression for take-off ground run.	L2	CO2
4	Explain the primary limitations of turning performance of an airplane.	L2	CO2
5	Derive the expression for LANDING ground run.	L2	CO2
6	Explain the procedure to determine the absolute and service ceiling of an aircraft through experimentally.	L2	CO2
7	Explain the procedure to determine the absolute and service ceiling of an aircraft through theoretically.	L2	CO2
8	Explain the procedure to determine the rate of climb of an aircraft through theoretically.	L2	CO2
9	Explain the procedure to determine the rate of climb of an aircraft through experimentally.	L3	CO2
10	Explain the procedure to determine the drag of an aircraft through experimentally.	L5&L6	CO2

Module -3			
Q. No.	*Questions*	*Bloom's LL*	*COs*
1	Explain about the flight test methods for evaluating maneuvering stability?	L2	CO3
2	Explain the flight test methods determining neutral point.	L2	CO3

Figure 2.2.1.10b: Sample Question Bank



SJCIT Question Bank

3	Explain the flight test methods determining quantitative evaluation.	L2	CO3
4	Explain stick free static longitudinal stability and give the effect of aft mounted engines or propellers	L2	CO3
5	Explain the flight path stability and speed stability.	L2	CO3
6	Explain the technique used to test airplane short periods.	L2	CO3
7	What is the effect of freeing the stick on the neutral point position? Explain flight path stability measurement from flight testing?	L2	CO3
8	Explain the test method for evaluating phugoid and phugoid data reduction	L2	CO3
9	Explain about the flight test methods for evaluating maneuvering stability?	L3	CO3
10	Explain the flight test methods determining neutral point.	L5&L6	CO3

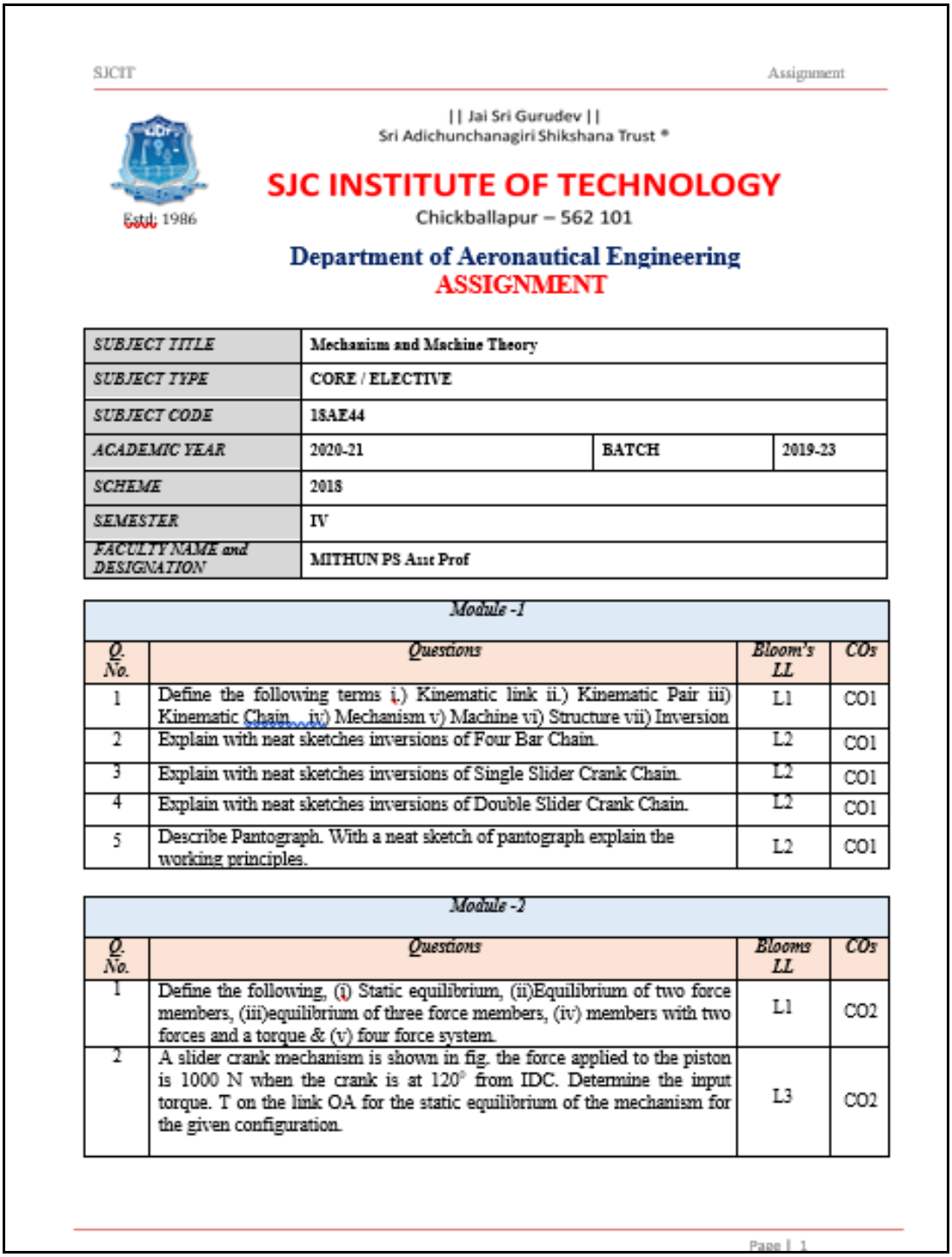
Module -4			
Q. No.	*Questions*	*Bloom's LL*	*COs*
1	Explain how the steady headings sideslip method for determining lateral directional static stability.	L2	CO3
2	Explain directional stability.	L2	CO3
3	What is directional stability and how is it increased in an airplane?	L2	CO3
4	Describe Dutch roll, Dutch roll techniques and Dutch roll data reduction	L2	CO3
5	Write the equation of motion for a steady sideslip.	L2	CO3
6	Write the regulation and flight test method used for evaluating dynamic lateral directional stability.	L2	CO3
7	Discuss adverse yaw effects in roll stability	L2	CO3
8	Describe Dutch roll, Dutch roll techniques and Dutch roll data reduction	L2	CO3
9	Explain is control free lateral directional stability and what is rudder lock?	L3	CO3
10	Write the equation of motion for a steady coordinated turn	L3	CO3

Module -5			
Q. No.	*Questions*	*Bloom's LL*	*COs*
1	Discuss the Cooper-Harper pilot rating scale for handling qualities of	L2	CO4

Page | 3

Figure 2.2.1.10c: Sample Question Bank

e. Assignment Questions is prepared and are included in the course files. Figures 2.2.1.11a and 2.2.1.11b show the sample assignment questions.



SJCIT Assignment

|| Jai Sri Gurudev ||
Sri Adichunchanagiri Shikshana Trust ®

Estd: 1986

SJC INSTITUTE OF TECHNOLOGY
Chickballapur – 562 101

Department of Aeronautical Engineering
ASSIGNMENT

SUBJECT TITLE	**Mechanism and Machine Theory**		
SUBJECT TYPE	**CORE / ELECTIVE**		
SUBJECT CODE	**18AE44**		
ACADEMIC YEAR	**2020-21**	**BATCH**	**2019-23**
SCHEME	**2018**		
SEMESTER	**IV**		
FACULTY NAME and DESIGNATION	**MITHUN PS Asst Prof**		

Module -1

Q. No.	*Questions*	*Bloom's LL*	*COs*
1	Define the following terms i.) Kinematic link ii.) Kinematic Pair iii) Kinematic Chain iv) Mechanism v) Machine vi) Structure vii) Inversion	L1	CO1
2	Explain with neat sketches inversions of Four Bar Chain.	L2	CO1
3	Explain with neat sketches inversions of Single Slider Crank Chain.	L2	CO1
4	Explain with neat sketches inversions of Double Slider Crank Chain.	L2	CO1
5	Describe Pantograph. With a neat sketch of pantograph explain the working principles.	L2	CO1

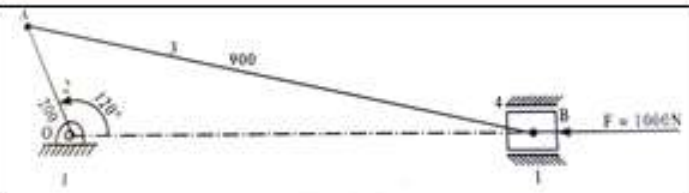
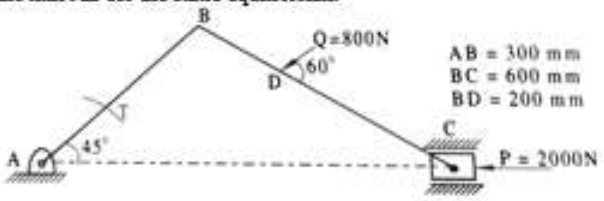
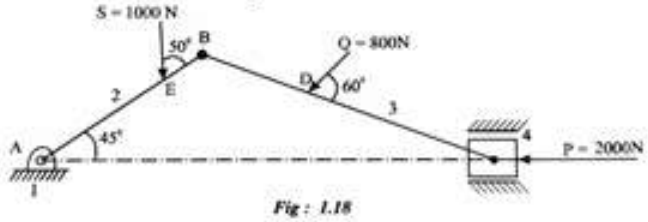
Module -2

Q. No.	*Questions*	*Blooms LL*	*COs*
1	Define the following, (i) Static equilibrium, (ii)Equilibrium of two force members, (iii)equilibrium of three force members, (iv) members with two forces and a torque & (v) four force system.	L1	CO2
2	A slider crank mechanism is shown in fig. the force applied to the piston is 1000 N when the crank is at 120° from IDC. Determine the input torque. T on the link OA for the static equilibrium of the mechanism for the given configuration.	L3	CO2

Page | 1

Figure 2.2.1.11a: Sample Assignment Questions

SJCIT Assignment

			
3	For the slider crank mechanism shown in fig. determine the input torque T on the link AB for the static equilibrium. 	L3	CO2
4	For the slider crank mechanism shown in fig. determine the input torque T on the link AB for static equilibrium.  *Fig : 1.18* *AB = 300 mm, BC = 600 mm* *BD = 200 mm, AE = 200 mm*	L4&L5	CO2
5	Determine an expression for velocity and acceleration of the piston in a reciprocating mechanism by using complex algebra method	L3	CO2

Module -3			
Q. No.	*Questions*	*Bloom's LL*	*COs*
1	Explain the law of gearing	L3	CO3
2	Determine an expression for minimum number of teeth on pinion to avoid interference.	L3	CO3
3	A pinion having 30 teeth drives a gear having 80 teeth. The profile of the gears is involute with 20° pressure angle, 12mm module and 10 mm addendum. Calculate the length of path of contact, arc of contact and contact ratio	L3	CO3
4	Two gears in mesh have 28 and 45 teeth respectively and standard addendum of one module. The module and pressure angles are 6 mm and 20° respectively. Calculate	L3	CO3

Page | 2

Figure 2.2.1.11b: Sample Assignment Questions

f. Quiz questions: The Quiz questions will be collected and kept in the course file. As per the curriculum, the faculties will conduct minimum two quiz in the class and document them. Figures 2.2.1.12a and 2.2.1.12b shows the sample quizquestions and figure 2.2.1.12c shows the responses for the quiz conducted.

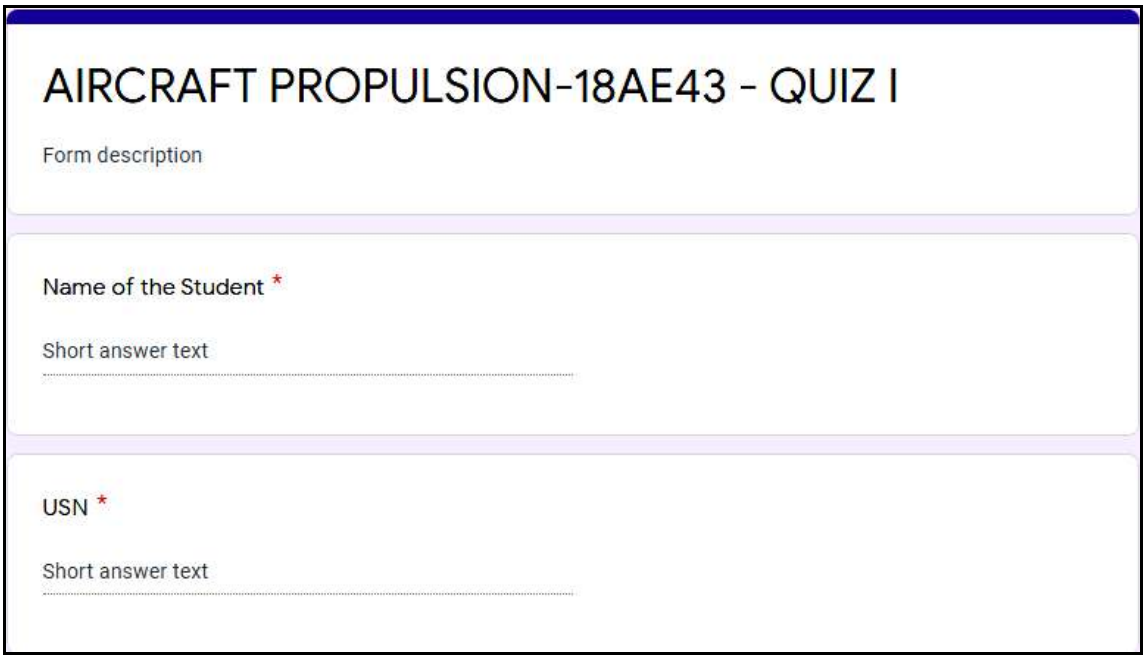


Figure 2.2.1.12a: Sample Quiz Questions

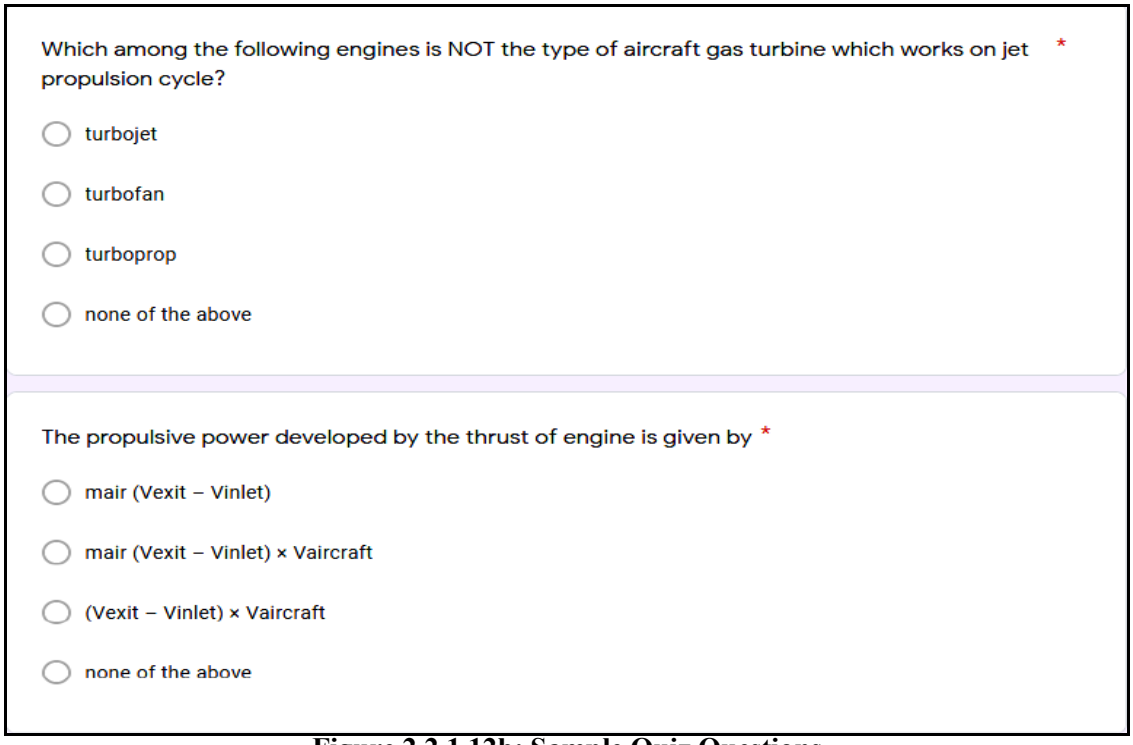


Figure 2.2.1.12b: Sample Quiz Questions

Timestamp	Score	Name of the Student	USN	Gas turbine as compared to steam turbine	Gas turbines are suitable for aircraft propulsion because	following engines is NOT the type of aircraft gas turbine which works on jet propulsion cycle?
8/14/2021 11:14:41	8 / 25	YOGESH E S	1SJ18AE063	all of these	all of these	turbojet
8/14/2021 11:15:27	19 / 25	Divyashree N	1SJ19AE005	all of these	all of these	none of the above
8/14/2021 11:16:04	20 / 25	Manjunath J	1SJ19AE012	all of these	all of these	none of the above
8/14/2021 11:16:31	21 / 25	MUZAMMIL PASHA S B	1SJ19AE015	all of these	all of these	none of the above
8/14/2021 11:16:59	21 / 25	AYUSH BOTHRA	1SJ19AE003	all of these	all of these	none of the above
8/14/2021 11:17:11	20 / 25	SHIVARAJ VENKOB	1SJ19AE027	requires less space for installation	all of these	none of the above
8/14/2021 11:17:13	21 / 25	Sujay R Hiremath	1SJ19AE036	all of these	all of these	none of the above
8/14/2021 11:18:19	20 / 25	Vinay KV	1SJ19AE046	all of these	all of these	none of the above
8/14/2021 11:18:20	18 / 25	Punith P	1SJ19AE020	all of these	all of these	none of the above
8/14/2021 11:18:33	20 / 25	Senagasetty Durga Dadee	1SJ19AE024	all of these	all of these	none of the above
8/14/2021 11:18:47	24 / 25	VISHWANATH HIREKEN	1SJ19AE043	all of these	all of these	none of the above
8/14/2021 11:18:48	24 / 25	NACHIKET S	1SJ19AE016	all of these	all of these	none of the above
8/14/2021 11:18:48	21 / 25	Niveditha S	1SJ19AE018	all of these	all of these	none of the above
8/14/2021 11:18:57	20 / 25	Varshini R	1SJ19AE037	has less efficiency	all of these	none of the above
8/14/2021 11:19:08	23 / 25	Keerthan Kumar n	1SJ20AE400	all of these	all of these	none of the above
8/14/2021 11:19:09	18 / 25	Vishwajith M	1SJ19AE042	has compressor and combustion chamber	all of these	none of the above
8/14/2021 11:19:15	20 / 25	Sristi Prakash Honakeri	1SJ19AE032	all of these	all of these	none of the above
8/14/2021 11:19:58	20 / 25	Deepak M	1SJ19AE004	all of these	all of these	none of the above
8/14/2021 11:19:59	20 / 25	Nandavaraprasad DM	1SJ19AE017	all of these	all of these	none of the above
8/14/2021 11:20:00	20 / 25	Akash R	1SJ19AE001	all of these	all of these	none of the above
8/14/2021 11:20:00	20 / 25	VENU P K	1SJ19AE040	has less efficiency	all of these	none of the above
8/14/2021 11:20:12	20 / 25	Raghavendra mylar	1si19ae021	all of these	all of these	none of the above

Figure 2.2.1.12c: Responses for the Quiz conducted

2.2.1.3 Interactive Learning

The usage of Interactive Learning in the Teaching Learning Process by faculty has found to be effective in making the student stay focused in the class, improving their problem-solving ability, enhancing their analytical thinking and so on. Basically, an orientation program for newly inducted faculty handled by senior faculty tries to incorporate the Teaching – Learning Methodology found to be effective over a period of time. In this program, the faculties are trained in the following concepts:

- Review of previous class material at the start of class
- Ask questions directed to smaller groups of students so as to motivate them to come up with the answer
- Problem Solving: Solve one problem and make students solve the next while moving around the class
- A large problem is broken into steps with a few being solved/ completed by the teacher and asking the student groups to attempt the others. The groups should generally be given enough time to think about what they have been asked to do and begin formulating a response but not necessarily enough to reach closure
- Summarizing the major points in the lecture just concluded/ explanation up to a point by select students
- Peer to peer learning to solve given problem enabling group learning during tutorials.
- Use of ICT – ppts, videos, taking development /sectional models to the class for better visualization are regularly incorporated.
- In the laboratories, the following practice / system is mandatory.
    - ➢ Teachers are well versed with all the respective lab experiments. This is ensured by the respective HoDs.
    - ➢ Students come prepared with the knowledge of the experiment to be performed. Prior explanation by faculty in the instruction class and lab manuals distributed beforehand supports this activity.
    - ➢ During the lab conduction, the students demonstrate the output to the facility which is another illustration of interactive learning. They also draw suitable inferences about the experiment which enhances their analytical thinkingability.

➢ Viva voce after the conduction of every experiment is a compulsory which supports their recall and clarity in the concepts

2.2.1.4 Collaborative Learning

The array of skills that a student acquires when exposed to collaborative learning is vast, pertaining to teamwork, decision making skills, time management skill, conflict management skills, interdependence, self-assessment (individual accountability) to development of leadership and communication skills. The students at SJCIT undergo cooperative learning at various points spread over their entire study period.

A brief explanation of teaching methods adopted by the faculty of the department for interactive and collaborative learning is shown below

Lectures	Classroom lectures are conducted using basic and conventional method of disseminating information to the students as per the curriculum. Students are encouraged to understand, apply and analyse the engineering problems.
Power point Presentations	Ideas and concepts taught during lectures are reinforced in the minds of students with the aid of presentations and videos.
Tutorials	Tutorials help the students in analysing and solving the engineering problems on the basis of the theory dealt during lectures. The tutorial sessions make the concept clear to the students.
Assignments	Assignments make students self-reliant in solving problems through understanding of theory through practice
Laboratory Experiments	Exposes the students to experimental and practical aspects of theory studied in classrooms. Lab-experiments help students to verify the theory concepts by interpretation of results. Laboratory experiments are carried out in teams, which helps in developing the spirit of working in a team
Seminars	Students are made to present a seminar during their academic year. In this, the students are supposed to present on a particular topic by referring to various books, Journals of National and International repute.
Case Study/ Mini Projects	Current topic related to the subject will be given to a group of students informing them to study about the topic, research going on related to the topic, submit a report and present in the class

Flip Class	Topics related to the course will be circulated to the students through google group (group mail) instructing them to prepare for the topic before the scheduled class. The Course coordinator prepares a list of questions and asks the students to answer the same during the class.

Methodologies to Support Weak Students and Encourage Bright Students:

Slow Learners

- Student who fails in more than 2 subjects in Semester End Examination of previous semester, scored < 9 in CIE I and having attendance less than 75% in current semester are considered as slow learners.
- Subject teachers will identify the slow learners in their respective course
- After identifying, the student performances are informed to their parents and special classes are conducted after the college working hours or after the last working day.

Mentoring System: Guidelines for Weak Students:

Identification Criteria	Actions
Students scoring less than 50% marks in Internal Assessmentand having attendance < 75%	1. Student Mentor/Counselor follow-up their progress regularly. Advising students to attend the classes/labs regularly and prepare better for the internals by interacting with concerned course faculty 2. Intimating their parents through Call or SMS to advice their wards and also to meet the class teachers as well as the HoD for further course of actions
Diploma (lateral entry) students, who entered with poor fundamental knowledge	1. Conduction of remedial classes 2. Conduction of special classes on weekends as well as in the evenings 3. Conduction of special laboratory classes
Students who fail in semester examinations	1. Conduction of extra classes 2. Boosting their morale with personal attention

Table B 2.2.1.13a: Weak Students V/S Actions

S. No.	USN	NAME	Performance in University Exams – Semester wise							
			I	II	III	IV	V	VI	VII	VIII
1	1SJ17AE021	MAGDUM ARIHANT RAJGONDA	7	8.08	6.5	6.64	7.27	8.23	7.17	8.7
2	1SJ17AE024	MANOJ C	7.92	5.83	3.31	5.59	5.67	6.93	6.79	8.7
3	1SJ17AE037	SANDEEP N	3.67	5.25	4	5.86	7.38	8.73	7.13	8.7
4	1SJ17AE042	SUBHAM	7.92	8	6.64	5.71	6.6	7.73	7	8.7

Table B 2.2.1.13b: Sample Students showing the improvement in academics gradually after counseling

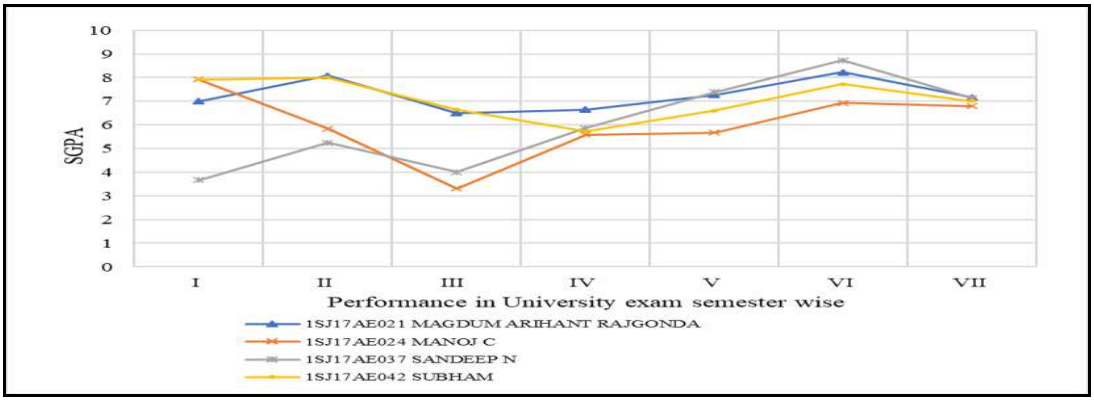


Figure 2.2.1.13c: Students showing the improvement in Academics after counseling

Guidelines to Identify Bright Students:

Bright Students

- Students with good academic performance in Semester End Examination are considered as bright students.
- Students are encouraged to participate in workshops, seminars, paper presentations.
- Students are given chance to organize technical programs at department level and club activities
- Students are appreciated by giving extra library cards.

Figures 2.2.1.14a & 2.2.1.14b shows the certificates, rank holders, encouragement to bright students

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

KARNATAKA, INDIA

RC 19 000366

RANK CERTIFICATE

Mr./Ms. RAMYA R (1SJ15AE032)

of S.J.C. INSTITUTE OF TECHNOLOGY, CHICKBALLAPUR

has passed the B.E (Aeronautical Engineering)

Degree Examination with Fifth Rank at the said Examination held during July 2019

Date : FEB 08, 2020

Registrar (Evaluation)

Figure 2.2.1.14a: University Rank Holder

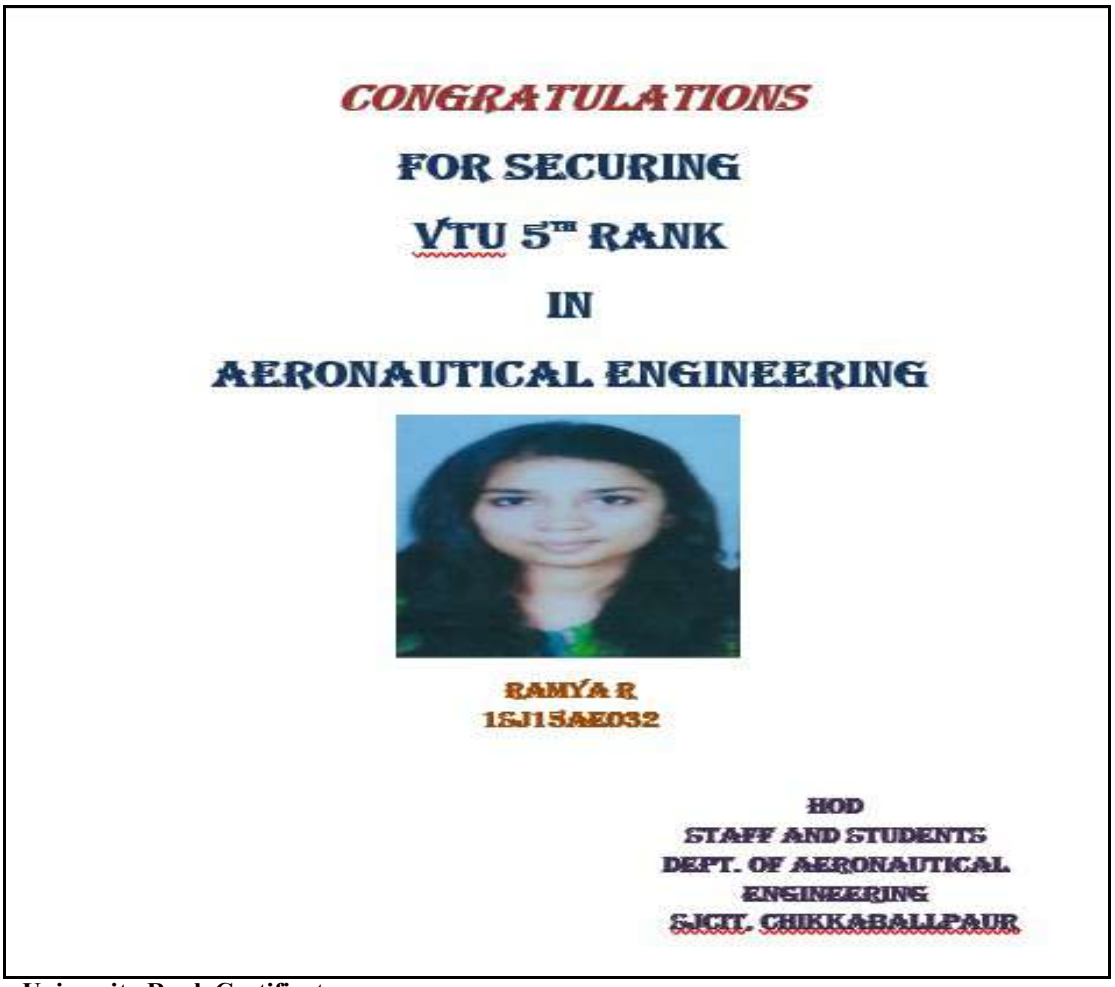


Fig 2.2.1.17b: University Rank Certificate

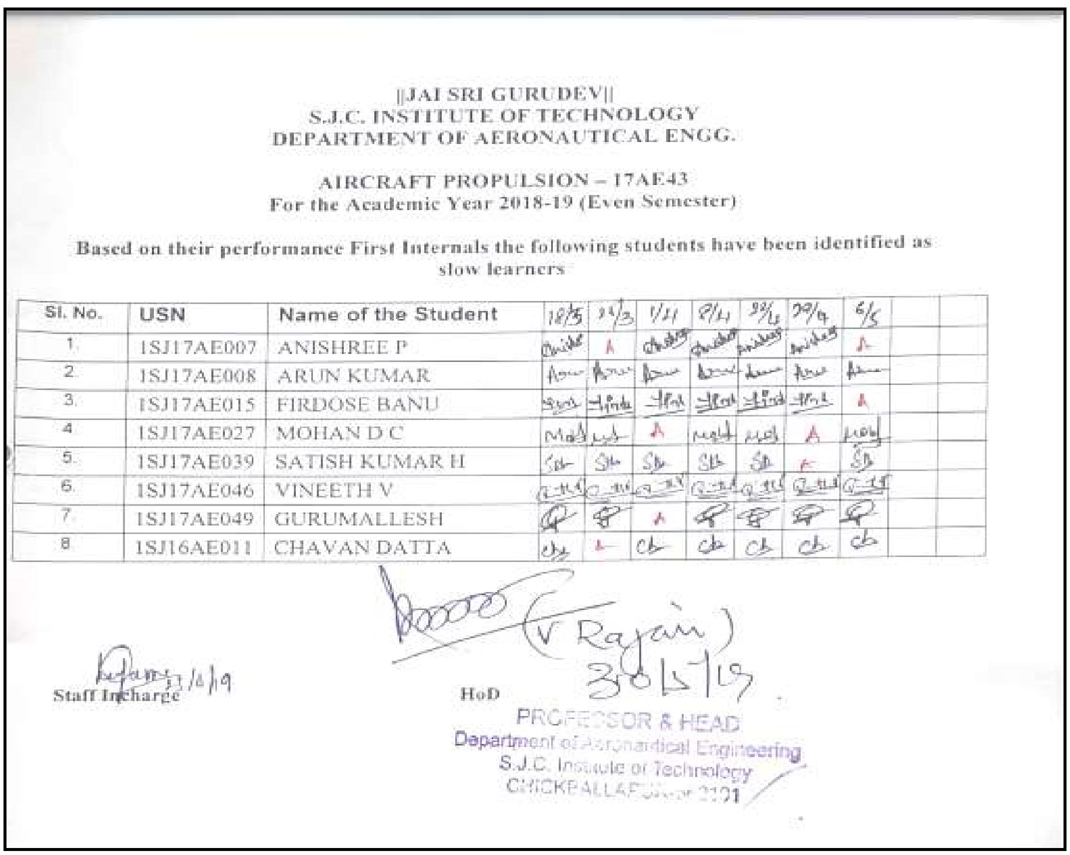
Figure 2.2.1.14b: University Rank Holder

Table 2.2.1.15 shows the list of papers presented/ published by students at various conferences and Journals.

Year	Name of the Student	Awards/Recognitions
2020-21	Jason Jeevan Nikhil Lokesh Basavaraju	Presented Project Adaptive Modelling and Structural Optimization of Wing Box in Symposium cum Project Exhibition on Recent Advances in Engineering Science
2020-21	Chandana N Lochana B M Pruthvija P Kumar	Presented Project Design and Analysis of Aircraft Interior composite Panel for Minimum weight through stress Analysis in Symposium cum Project Exhibition on Recent Advances in Engineering Science
2020-21	Megha Mennikeri Nethra J Nishat Momin Subham	Presented Project Mathematical Model of 6 DOF Rigid Body Fixed Wing Aircraft and its Response for an Atmospheric and Pilot Inputs in Symposium cum Project Exhibition on Recent Advances in Engineering Science
2019-20	Komalesh B Darshan N	Effect of Stall on Blended wing Body Aircraft in International Journal of Latest Trends in Engineering and Technology
2019-20	Saksham Mutreja Hidayathula Nawaz Ahamed Inchara Viswakarma	Presented paper titled Numerical Analysis of Flow Over Single Stage Axial Compressor Cascade for Different Axial Spacing Using CFD in Trends of Millennials' Contributions and Challenges in Aerospace Engineering
2019-20	Darshan N Komalesh B ANR Gowda Rajesh P	Presented paper titled Effect of sweep in Blended Body Aircraft in Trends of Millennials' Contributions and Challenges in Aerospace Engineering
2018-19	Tejashwini C G Niharika B Manoj Kumar R S	Presented the paper titled Mechanical Characterization of Carbon Fiber reinforced Epoxy Polymer in International Conference on Emerging Trends in Smart Technologies
2018-19	Sushant Gowda B C Vinuth N Poornananda T Dhanush G J	Presented the paper titled Internal Flow Analysis on Sweeping Jet Actuator in International Conference on Emerging Trends in Smart Technologies
2018-19	Dhanush G J Manjunath Deepak B S Ajith Patil J R	Presented the paper titled Numerical Simulation of Rocket Launch Vehicle in International Conference on Emerging Trends in Smart Technologies
2018-19	Sushant Gowda B C Vinuth N Poornananda T Dhanush G J	Published the paper titled Internal Flow Analysis on Sweeping Jet Actuator in the International Journal of Recent Technology and Engineering
2018-19	Manoj Kumar R S	Presented paper titled Comprehensive Characterization of Carbon Fiber Reinforced Epoxy Composites for Aerospace Application in International Conference on Emerging Research in Civil, Aeronautical and Mechanical Engineering
2018-19	Ramya R	Published paper titled Study of Indian Unmanned Aerial Vehicles in International Journal of Advanced Research Trends in Engineering and Technology
2018-19	Pankaj Kumar Chathurved S Chandana M Ramya R	Presented paper titled PID Controller Design for Dynamic Motion of an Aircraft in International Conference on Emerging Trends in Smart Technologies

2017-18	Manoj. J	Presented a paper on Speech Input Controlling of Unmanned Aerial Vehicles in Innovation of Engineering Technology
2017-18	Vinay M R Kruthika H V Shaheed Ameen Khan	Published the paper titled Conceptual design of 180-Seater Passenger Aircraft in International Journal of Innovative Research in Technology and Science
2017-18	Vinay M R Kruthika H V Shaheed Ameen Khan	Presented the paper titled Conceptual design of 180-Seater Passenger Aircraft in International Conference On Emerging Trends In Engineering Science And Technology
2017-18	Shaheed Ameen Khan	Published the paper titled Design and Analysis of Main Rotor Blades of a Utility Helicopter During Hovering in International Journal of Advanced Research Trends in Engineering and Technology
2017-18	Vinay M R Kruthika H V Shaheed Ameen Khan	Published the paper titled Conceptual design of 180-Seater Passenger Aircraft in International Journal of Innovative Research in Technology and Science

Table B 2.2.1.15: Bright students encouraged to present papers at various conferences



||JAI SRI GURUDEV||
S.J.C. INSTITUTE OF TECHNOLOGY
DEPARTMENT OF AERONAUTICAL ENGG.

AIRCRAFT PROPULSION – 17AE43
For the Academic Year 2018-19 (Even Semester)

Based on their performance First Internals the following students have been identified as slow learners

Sl. No.	USN	Name of the Student	18/3	23/3	1/4	8/4	22/4	29/4	6/5		
1.	1SJ17AE007	ANISHREE P		A					A		
2.	1SJ17AE008	ARUN KUMAR									
3.	1SJ17AE015	FIRDOSE BANU							A		
4	1SJ17AE027	MOHAN D C			A			A			
5.	1SJ17AE039	SATISH KUMAR H						A			
6.	1SJ17AE046	VINEETH V									
7.	1SJ17AE049	GURUMALLESH			A						
8	1SJ16AE011	CHAVAN DATTA		A							

(V Rajan)
30/5/19

Staff Incharge 27/5/19

HoD

PROFESSOR & HEAD
Department of Aeronautical Engineering
S.J.C. Institute of Technology
CHICKBALLAPUR-562101

Figure 2.2.1.14c. Attendance taken for the remedial classes

2.2.1.6 Conduction of Experiments

- The laboratories are equipped with necessary infrastructure to facilitate effective conduction of the experiments in the laboratory.
- Lab In charges of respective Labs will prepare the manuals, material requirements, conduction of experiments and cycle of experiments before commencement of semester.
- In Laboratory session the faculty explains the procedure, theory, calculations and applications of the experiment.
- The students will write the necessary details in the observation book, and then conduct the experiment, tabulate the readings, calculate and evaluate the results.
- The calculated results were represented in the form of graphs and documented in the record book by the students, later which will be evaluated by concerned faculty.
- The Experiments are evaluated by the faculties according to lab rubrics.

The experiments are conducted in each laboratory as per the flow chart shown in Fig. 2.2.1.15.

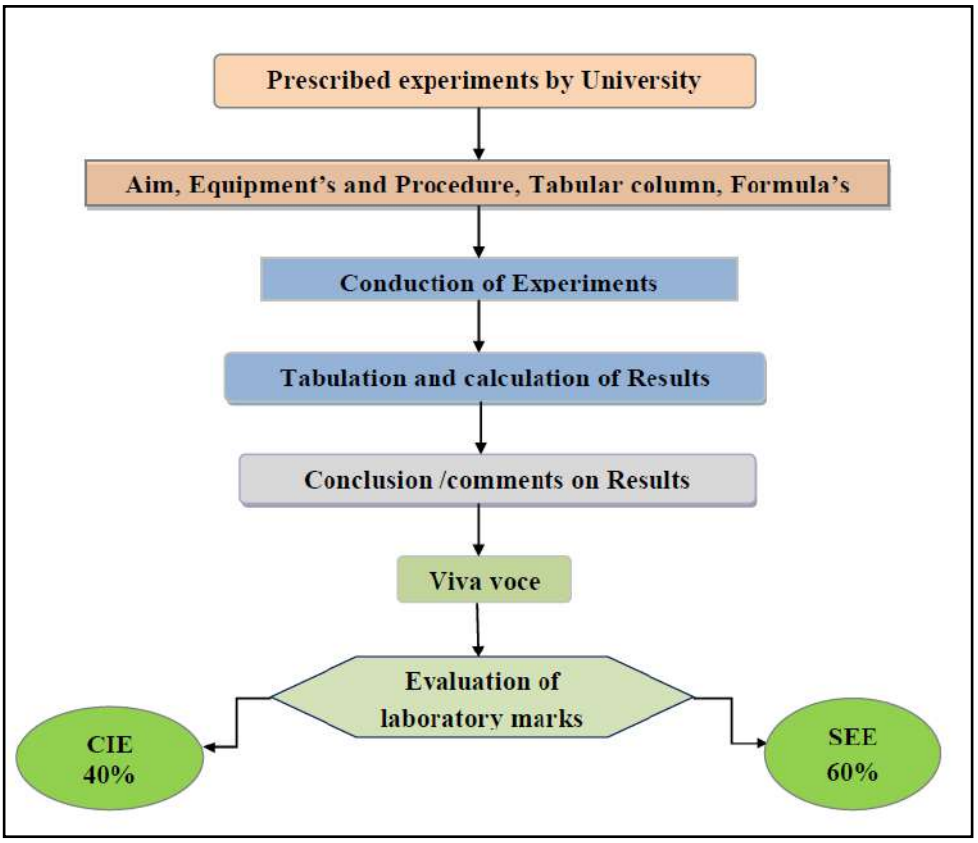


Figure 2.2.1.15 Process of Evaluation of Lab experiments

Continuous Assessment in laboratory:

Continuous assessment system is also implemented for assessment of laboratory work. The evaluation is done on the basis of submission of laboratory observations, records, conduction, viva and punctuality of the student. Internal test is conducted at the end of the semester and evaluated as per Laboratory Rubrics.

Laboratory Rubrics

1. **FOR 20 MARKS (2015 CBCS SCHEME)**

Sl. No.	Description	Marks
1	**Continuous Evaluation**	**12**
	a. Observation write up and punctuality	**2.0**
	b. Conduction of experiment and output	**4.0**
	c. Viva voce	**2.0**
	d. Record write up	**4.0**
2	**Internal Test**	**08**

2. **FOR 40 MARKS (2017 REVISED CBCS SCHEME)**

Sl. No.	Description	Marks
1	**Continuous Evaluation**	**24**
	a. Observation write up and punctuality	**4.0**
	b. Conduction of experiment and output	**8.0**
	c. Viva voce	**4.0**
	d. Record write up	**8.0**
2	**Internal Test**	**16**

3. **FOR 40 MARKS (2018 REVISED CBCS SCHEME)**

Sl. No.	Description	Marks
1	**Continuous Evaluation**	**24**
	e. Observation write up and punctuality	**4.0**
	f. Conduction of experiment and output	**8.0**
	g. Viva voce	**4.0**
	h. Record write up	**8.0**
2	**Internal Test**	**16**

- Continuous evaluation is done by the faculty in every lab session based on the lab rubrics. The average marks of all the session will be considered for awarding final internal assessment.
- All the students must write the procedure and calculation of the experiment in the observation book.
- Students should get signature for their observation books from the concerned faculty after conduction of experiment.
- All the students must write the record and submit in the next class along with observation book for evaluation.

The faculty member allocates the marks for each experiment as per the rubrics mentioned above.

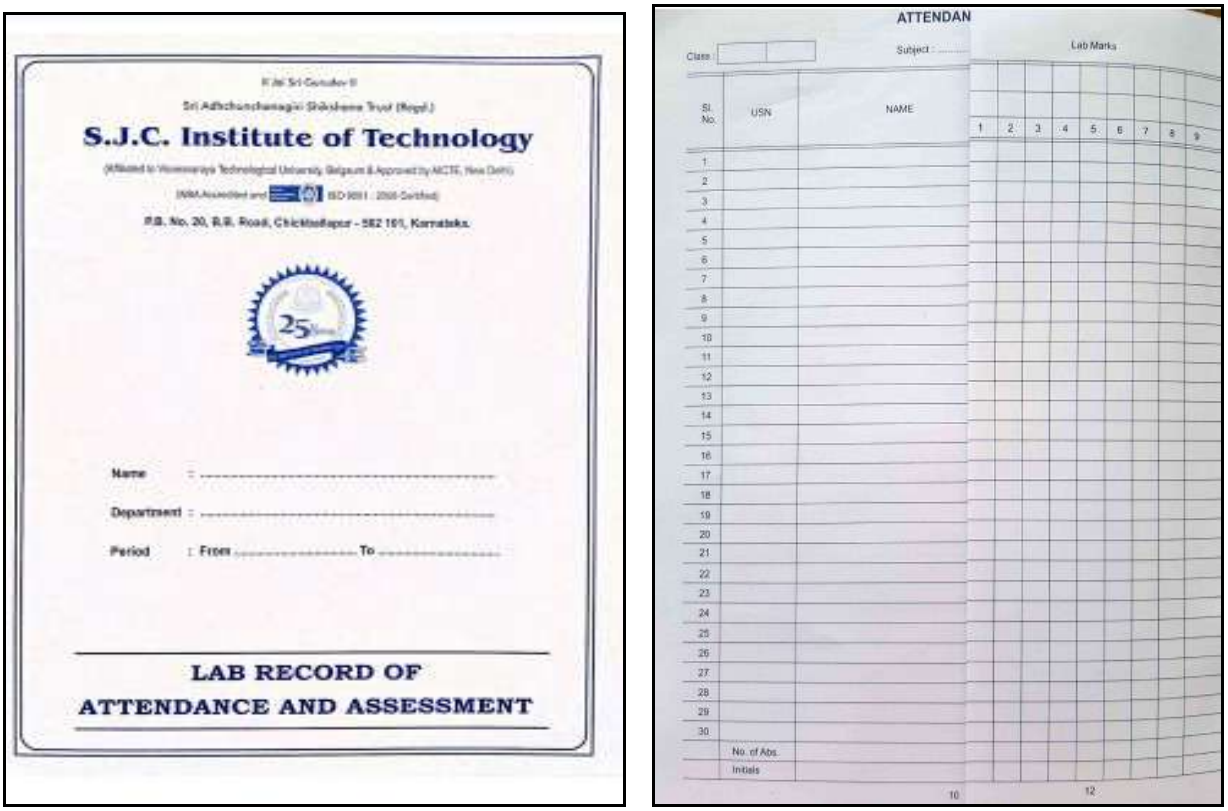
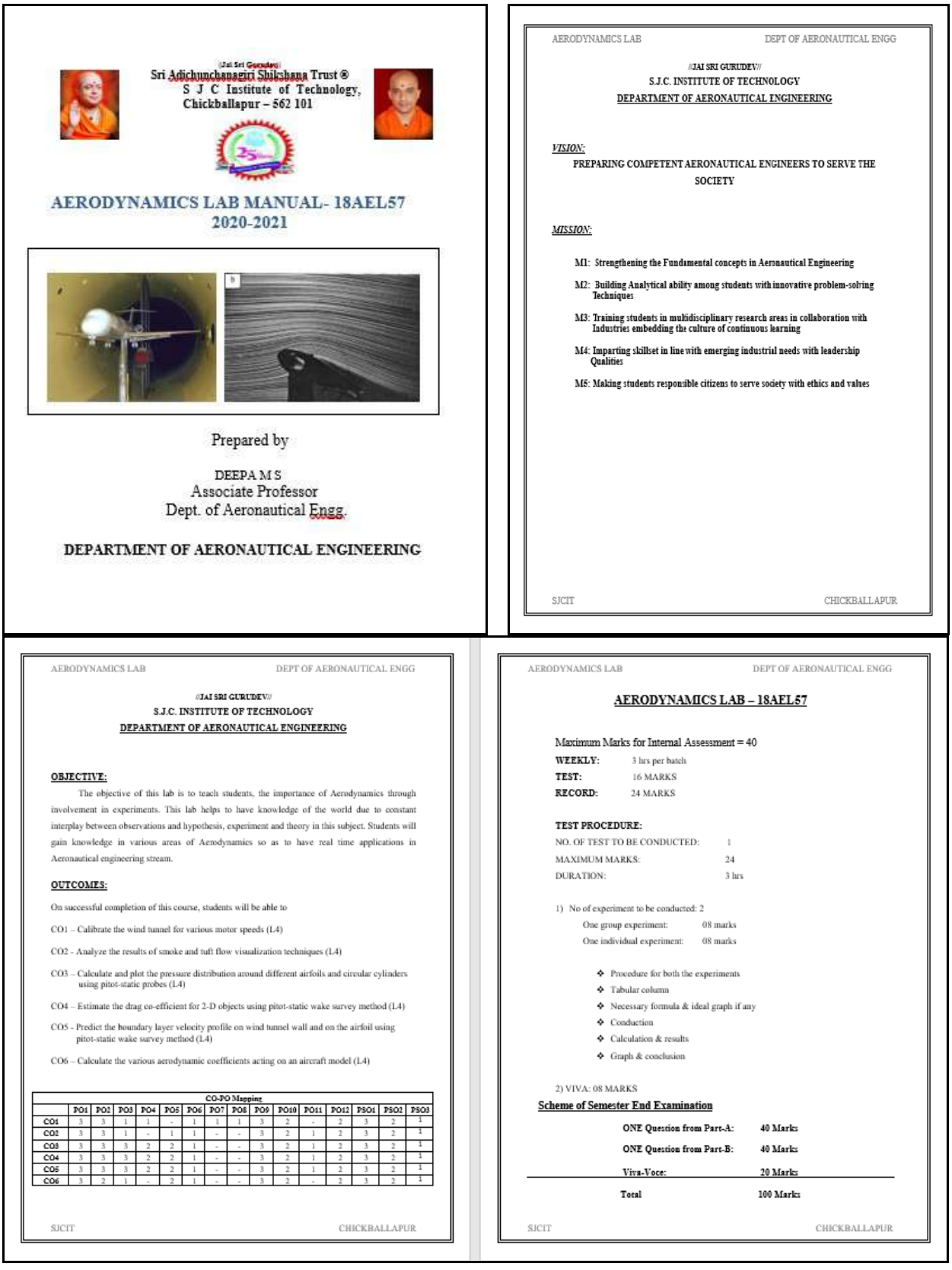


Figure 2.2.1.16: Laboratory Attendance Register



Sri Adichunchanagiri Shikshana Trust ®
S J C Institute of Technology,
Chickballapur – 562 101

AERODYNAMICS LAB MANUAL- 18AEL57
2020-2021

Prepared by

DEEPA M S
Associate Professor
Dept. of Aeronautical Engg.

DEPARTMENT OF AERONAUTICAL ENGINEERING

AERODYNAMICS LAB DEPT OF AERONAUTICAL ENGG

//JAI SRI GURUDEV//
S.J.C. INSTITUTE OF TECHNOLOGY
DEPARTMENT OF AERONAUTICAL ENGINEERING

VISION:

PREPARING COMPETENT AERONAUTICAL ENGINEERS TO SERVE THE SOCIETY

MISSION:

M1: Strengthening the Fundamental concepts in Aeronautical Engineering

M2: Building Analytical ability among students with innovative problem-solving Techniques

M3: Training students in multidisciplinary research areas in collaboration with Industries embedding the culture of continuous learning

M4: Imparting skillset in line with emerging industrial needs with leadership Qualities

M5: Making students responsible citizens to serve society with ethics and values

SJCIT CHICKBALLAPUR

AERODYNAMICS LAB DEPT OF AERONAUTICAL ENGG

//JAI SRI GURUDEV//
S.J.C. INSTITUTE OF TECHNOLOGY
DEPARTMENT OF AERONAUTICAL ENGINEERING

OBJECTIVE:

The objective of this lab is to teach students, the importance of Aerodynamics through involvement in experiments. This lab helps to have knowledge of the world due to constant interplay between observations and hypothesis, experiment and theory in this subject. Students will gain knowledge in various areas of Aerodynamics so as to have real time applications in Aeronautical engineering stream.

OUTCOMES:

On successful completion of this course, students will be able to

CO1 – Calibrate the wind tunnel for various motor speeds (L4)

CO2 - Analyze the results of smoke and tuft flow visualization techniques (L4)

CO3 – Calculate and plot the pressure distribution around different airfoils and circular cylinders using pitot-static probes (L4)

CO4 – Estimate the drag co-efficient for 2-D objects using pitot-static wake survey method (L4)

CO5 - Predict the boundary layer velocity profile on wind tunnel wall and on the airfoil using pitot-static wake survey method (L4)

CO6 – Calculate the various aerodynamic coefficients acting on an aircraft model (L4)

CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	1	1	-	1	1	1	3	2	-	2	3	2	1
CO2	3	3	1	-	1	1	-	-	3	2	1	2	3	2	1
CO3	3	3	3	2	2	1	-	-	3	2	1	2	3	2	1
CO4	3	3	3	2	2	1	-	-	3	2	1	2	3	2	1
CO5	3	3	3	2	2	1	-	-	3	2	1	2	3	2	1
CO6	3	2	1	-	2	1	-	-	3	2	-	2	3	2	1

SJCIT CHICKBALLAPUR

AERODYNAMICS LAB DEPT OF AERONAUTICAL ENGG

AERODYNAMICS LAB – 18AEL57

Maximum Marks for Internal Assessment = 40

WEEKLY: 3 hrs per batch
TEST: 16 MARKS
RECORD: 24 MARKS

TEST PROCEDURE:

NO. OF TEST TO BE CONDUCTED: 1
MAXIMUM MARKS: 24
DURATION: 3 hrs

1) No of experiment to be conducted: 2
One group experiment: 08 marks
One individual experiment: 08 marks

- Procedure for both the experiments
- Tabular column
- Necessary formula & ideal graph if any
- Conduction
- Calculation & results
- Graph & conclusion

2) VIVA: 08 MARKS

Scheme of Semester End Examination

ONE Question from Part-A:	**40 Marks**
ONE Question from Part-B:	**40 Marks**
Viva-Voce:	**20 Marks**
Total	**100 Marks**

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Figure 2.2.1.17: Front sheets of Laboratory Manual

SRI ADICHUNCHANAGIRI SHIKSHANA TRUST (R.)

S.J.C. INSTITUTE OF TECHNOLOGY

CHICKBALLAPUR - 562 101

Laboratory Certificate

This is to certify that

Mr./Ms. LOCHANA BM

bearing USN 1SJ19AE020 Sem. 5 Branch: AERONAUTICAL ENGG. has satisfactorily completed the Practical Experiments of AERODYNAMICS Laboratory, Prescribed by the Visvesvaraya Technological University for the year 2019

Mark Obtained	38
Total Marks	40

Signature of the Teacher Incharge

Date: 21/1/19

Head of the Department

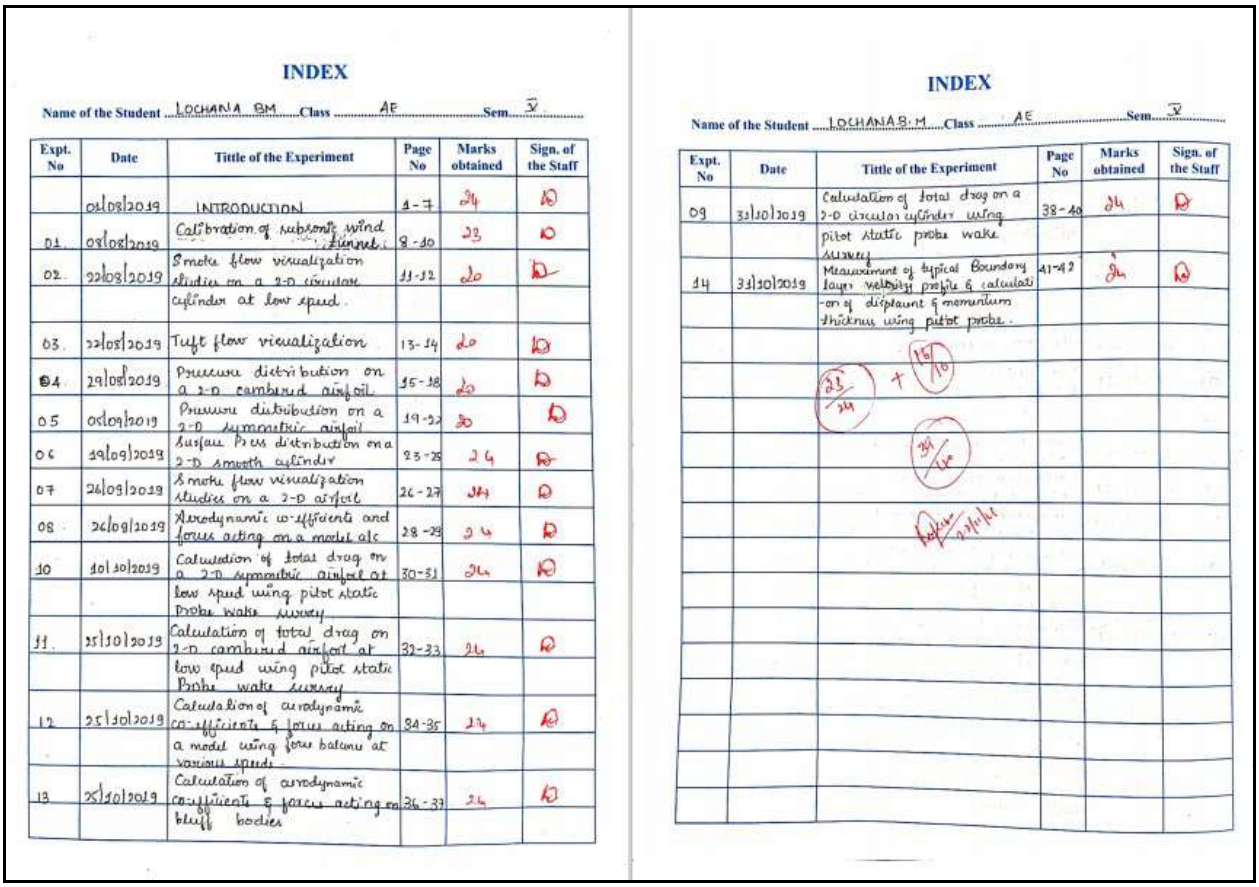
PROFESSOR & HOD

Department of Aeronautical Engineering

S.J.C. Institute of Technology

CHICKBALLAPUR-562101

Figure 2.2.1.18: Practical record book with Certificate



INDEX

Name of the Student LOCHANA BM Class AE Sem V

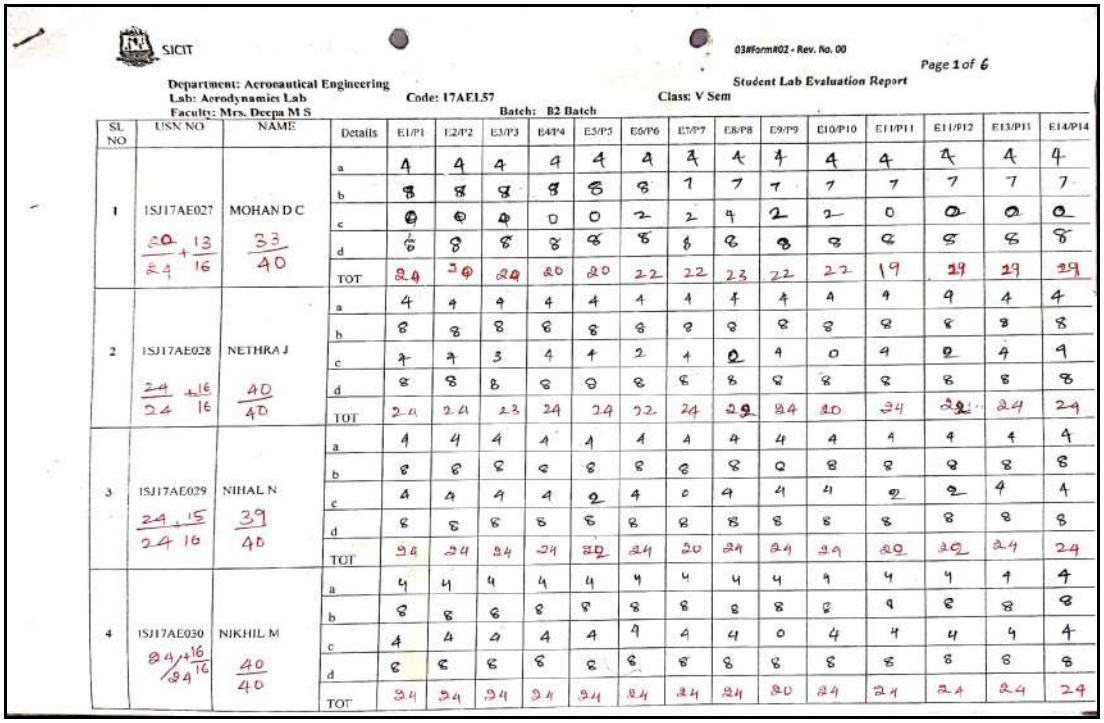
Expt. No	Date	Tittle of the Experiment	Page No	Marks obtained	Sign. of the Staff
	01/08/2019	INTRODUCTION	1-7	24	
01	08/08/2019	Calibration of subsonic wind tunnel.	8-10	23	
02	22/08/2019	Smoke flow visualization studies on a 2-D circular cylinder at low speed.	11-12	20	
03	22/08/2019	Tuft flow visualization	13-14	20	
04	29/08/2019	Pressure distribution on a 2-D cambered airfoil.	15-18	20	
05	05/09/2019	Pressure distribution on a 2-D symmetric airfoil	19-22	20	
06	19/09/2019	Surface Pressure distribution on a 2-D smooth cylinder	23-25	24	
07	26/09/2019	Smoke flow visualization studies on a 2-D airfoil	26-27	24	
08	26/09/2019	Aerodynamic coefficients and forces acting on a model etc	28-29	24	
10	10/10/2019	Calculation of total drag on a 2-D symmetric airfoil at low speed using pitot static Probe wake survey	30-31	24	
11	25/10/2019	Calculation of total drag on 2-D cambered airfoil at low speed using pitot static Probe wake survey	32-33	24	
12	25/10/2019	Calculation of aerodynamic coefficients & forces acting on a model using force balance at various speeds.	34-35	24	
13	25/10/2019	Calculation of aerodynamic coefficients & forces acting on bluff bodies	36-37	24	

INDEX

Name of the Student LOCHANA B.M Class AE Sem V

Expt. No	Date	Tittle of the Experiment	Page No	Marks obtained	Sign. of the Staff
09	31/10/2019	Calculation of total drag on a 2-D circular cylinder using pitot static probe wake survey	38-40	24	
14	31/10/2019	Measurement of typical Boundary layer velocity profile & calculation of displacement & momentum thickness using pitot probe.	41-42	24	

Figure 2.2.1.19: Practical record book with particulars of the experiments performed



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03#Form#02 - Rev. No. 00

Page 1 of 6

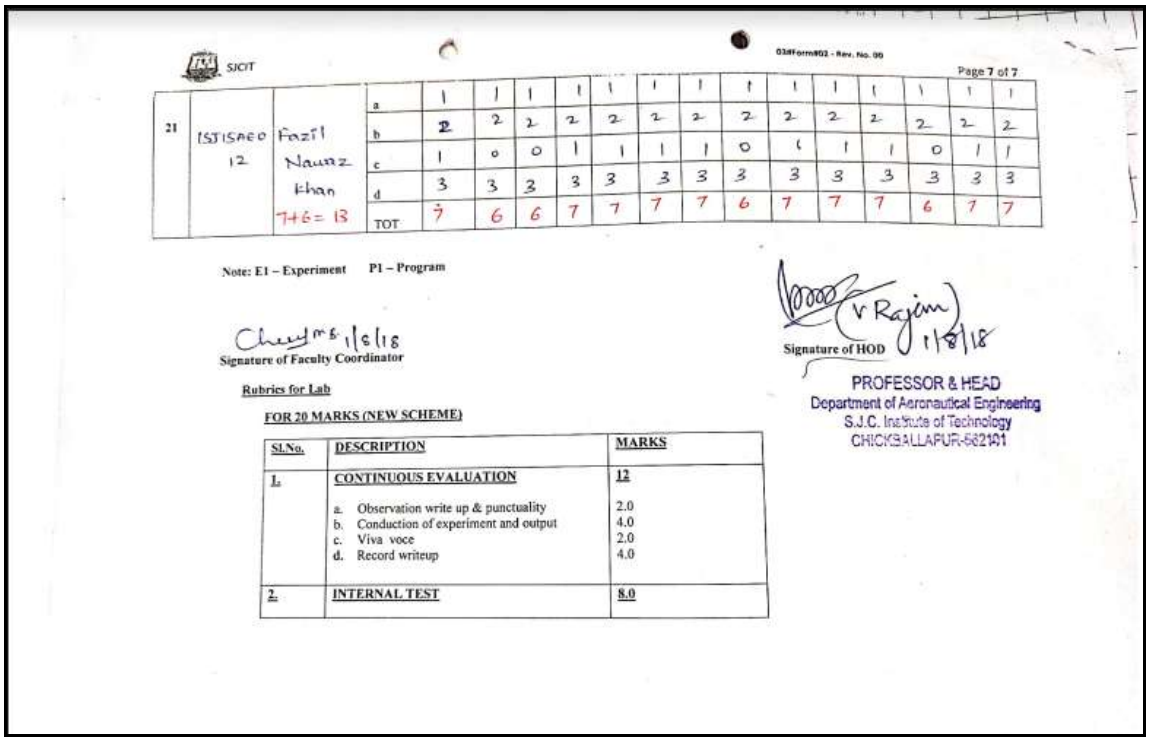
Department: Aeronautical Engineering
Lab: Aerodynamics Lab
Faculty: Mrs. Deepa M S

Code: 17AEL57
Batch: B2 Batch

Student Lab Evaluation Report

Class: V Sem

SL NO	USN NO	NAME	Details	E1/P1	E2/P2	E3/P3	E4/P4	E5/P5	E6/P6	E7/P7	E8/P8	E9/P9	E10/P10	E11/P11	E11/P12	E13/P13	E14/P14
1	1SJ17AE027	MOHAN D C	a	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	20+13	33	b	8	8	8	8	8	8	7	7	7	7	7	7	7	7
	24 16	40	c	0	0	0	0	0	2	2	9	2	2	0	0	0	0
			d	8	8	8	8	8	8	8	8	8	8	8	8	8	8
			TOT	24	20	20	20	20	22	22	23	22	22	19	19	19	19
2	1SJ17AE028	NETHRA J	a	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	24+16	40	b	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	24 16	40	c	7	7	3	4	4	2	4	0	4	0	4	0	4	9
			d	8	8	8	8	9	8	8	8	8	8	8	8	8	8
			TOT	24	24	23	24	24	22	24	20	24	20	24	20	24	24
3	1SJ17AE029	NIHAL N	a	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	24+15	39	b	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	24 16	40	c	4	4	4	4	0	4	0	4	4	4	0	0	4	4
			d	8	8	8	8	8	8	8	8	8	8	8	8	8	8
			TOT	24	24	24	24	20	24	20	24	24	24	20	20	24	24
4	1SJ17AE030	NIKHIL M	a	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	24+16	40	b	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	24 16	40	c	4	4	4	4	4	4	4	4	0	4	4	4	4	4
			d	8	8	8	8	8	8	8	8	8	8	8	8	8	8
			TOT	24	24	24	24	24	24	24	24	20	24	24	24	24	24



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03#Form#02 - Rev. No. 00

Page 7 of 7

21	1SJ15AE012	Fazil Nawaz Khan	a	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		7+6=13	b	2	2	2	2	2	2	2	2	2	2	2	2	2	2
			c	1	0	0	1	1	1	1	0	1	1	1	0	1	1
			d	3	3	3	3	3	3	3	3	3	3	3	3	3	3
			TOT	7	6	6	7	7	7	7	6	7	7	7	6	7	7

Note: E1 – Experiment P1 – Program

Signature of Faculty Coordinator

Signature of HOD

PROFESSOR & HEAD
Department of Aeronautical Engineering
S.J.C. Institute of Technology
CHICKBALLAPUR-562101

Rubrics for Lab

FOR 20 MARKS (NEW SCHEME)

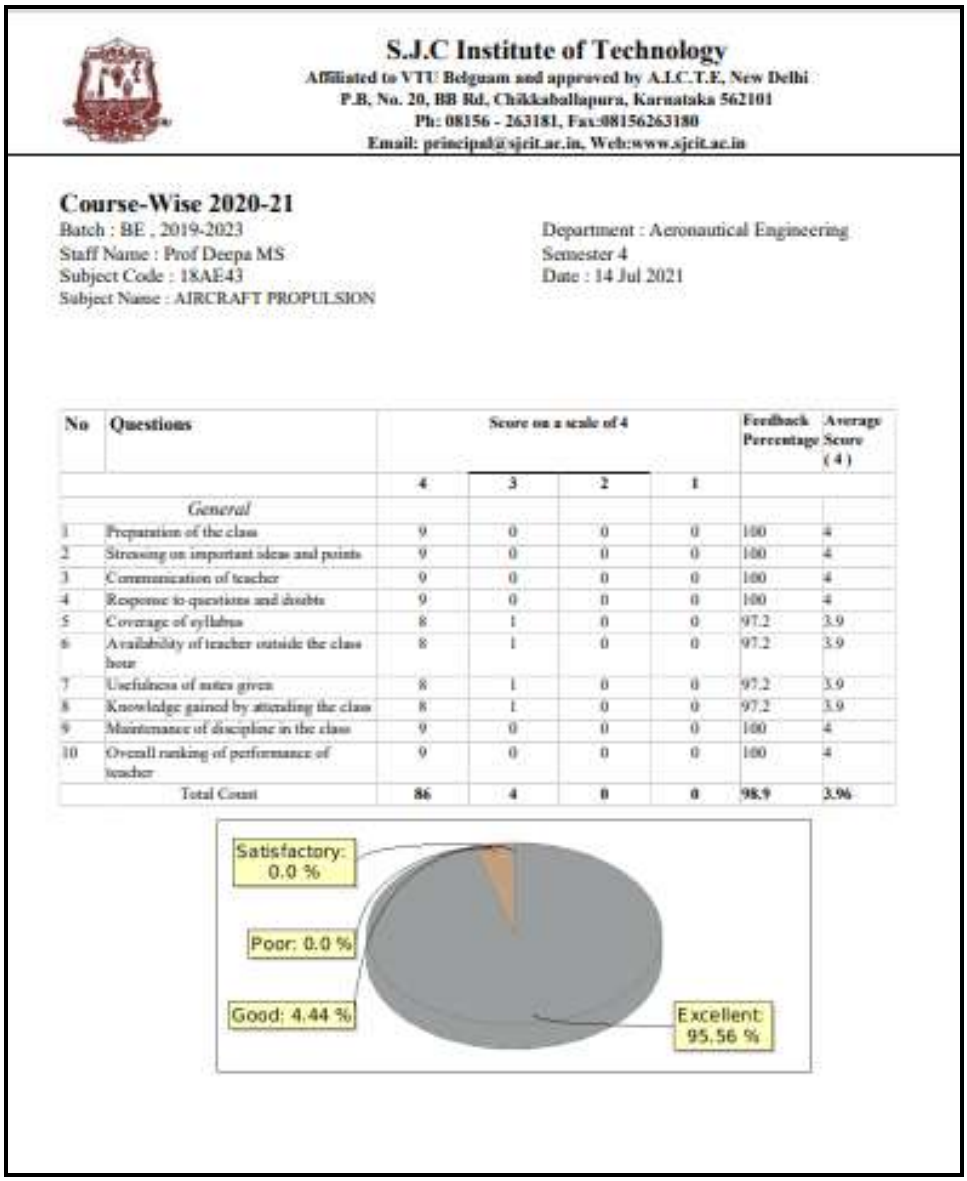
Sl.No.	DESCRIPTION	MARKS
1.	CONTINUOUS EVALUATION	12
	a. Observation write up & punctuality	2.0
	b. Conduction of experiment and output	4.0
	c. Viva voce	2.0
	d. Record writeup	4.0
2.	INTERNAL TEST	8.0

Figure 2.2.1.20: Laboratory manual front sheets and evaluation Rubrics

Student feedback on teaching learning process and actions taken:

At the mid of the semester, students will give online feedback appraising the teaching faculty.

- Lecture classes are monitored by senior Professors and Head of the Department. They give constructive comments to improve the teaching- learning process. This motivates them to improve their skills and abilities.
- Training / orientation programs are conducted by professional experts to improve the skills of the faculty members.



S.J.C Institute of Technology

Affiliated to VTU Belgaum and approved by A.I.C.T.E, New Delhi
P.B, No. 20, BB Rd, Chikkaballapura, Karnataka 562101
Ph: 08156 - 263181, Fax:08156263180
Email: principal@sjcit.ac.in, Web:www.sjcit.ac.in

Course-Wise 2020-21

Batch : BE , 2019-2023
Staff Name : Prof Deepa MS
Subject Code : 18AE43
Subject Name : AIRCRAFT PROPULSION

Department : Aeronautical Engineering
Semester 4
Date : 14 Jul 2021

No	Questions	Score on a scale of 4				Feedback Percentage	Average Score (4)
		4	3	2	1		
	General						
1	Preparation of the class	9	0	0	0	100	4
2	Stressing on important ideas and points	9	0	0	0	100	4
3	Communication of teacher	9	0	0	0	100	4
4	Response to questions and doubts	9	0	0	0	100	4
5	Coverage of syllabus	8	1	0	0	97.2	3.9
6	Availability of teacher outside the class hour	8	1	0	0	97.2	3.9
7	Usefulness of notes given	8	1	0	0	97.2	3.9
8	Knowledge gained by attending the class	8	1	0	0	97.2	3.9
9	Maintenance of discipline in the class	9	0	0	0	100	4
10	Overall ranking of performance of teacher	9	0	0	0	100	4
	Total Count	86	4	0	0	98.9	3.96

Figure 2.2.1.20. Students Feedback on teaching learning process

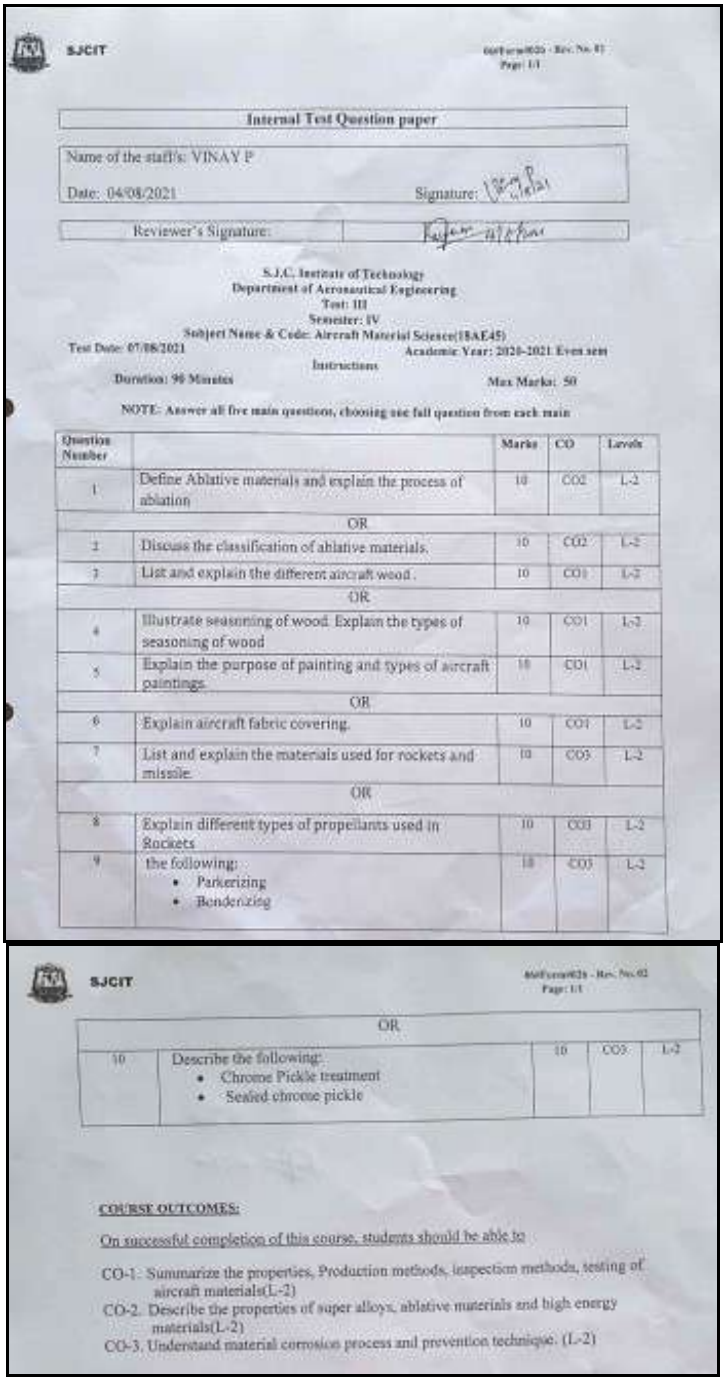
2.2.2. Quality of Internal Semester Question papers, Assignments and Evaluation (20)

Internal Assessment test marks as per VTU regulations are 40 for theory and lab subjects. The internal assessment marks for theory are based on three tests, conducted once in every month as per the calendar of events.

The Department Internal Assessment Test Committee consisting of HoD, Coordinators and reviewers oversee the Internal Assessment (IA) test conduction process.

- IA test time table is prepared in advance and displayed on the notice boards.
- Internal Quality Assurance Cell (IQAC) defines the template/format and pattern of question papers in line with the institution guidelines covering Bloom's learning levels with appropriate action verbs and indicating the course outcomes against each question.
- The course faculty prepares the question paper for every course as per the template covering the syllabus (usually 1 - 1 ½ module for every test).
- Test coordinators collect IA test question papers from faculty well in advance and are subjected to scrutiny.
- The Program Assessment Committee will review the question paper against the set standards and intimate the concerned course coordinator/faculty in case of discrepancies. The committee consists of HoD as Chairperson, 2-3 Professors as reviewers and IA test Coordinator.
- Scrutinized question papers will get printed by the IA test coordinator with utmost confidentiality and kept under the custody.
- Invigilation duties allocation and seating arrangements for students are made by the test coordinator in a highly democratic and transparent way.
- On the day of the test, the question papers are distributed to the invigilators 5 minutes before the commencement of the test.
- The students write the IA tests in standard bluebooks supplied by the college, which are maintained by the department for at least one year after the announcement of the university results and are available for verification.
- Internal Squad is constituted to ensure the seriousness and smooth conduction of the tests
- The scheme and solution of question paper is maintained by Course Coordinator/faculty.
- After 3-4 days of each IA test, marks are announced, students are allowed to check the correction and the finalized IA marks is displayed in the noticeboard.
- Follow up on the quality of question papers, transparency in evaluation, marks entry, measures to take up on content and quality is done at dept. level.

Figures 2.2.2.1a to 2.2.2.1b shows the sample snapshots of Question paper submitted by the faculty with COs and Bloom's Learning Levels.



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Internal Test Question paper

Name of the staff/s: VINAY P

Date: 04/08/2021 Signature:

Reviewer's Signature:

S.J.C. Institute of Technology
Department of Aeronautical Engineering
Test: III
Semester: IV
Subject Name & Code: Aircraft Material Science(18AE45)
Test Date: 07/08/2021 Academic Year: 2020-2021 Even sem
Instructions
Duration: 90 Minutes Max Marks: 50

NOTE: Answer all five main questions, choosing one full question from each main

Question Number		Marks	CO	Levels
1	Define Ablative materials and explain the process of ablation	10	CO2	L-2
	OR			
2	Discuss the classification of ablative materials.	10	CO2	L-2
3	List and explain the different aircraft wood .	10	CO1	L-2
	OR			
4	Illustrate seasoning of wood. Explain the types of seasoning of wood	10	CO1	L-2
5	Explain the purpose of painting and types of aircraft paintings.	10	CO1	L-2
	OR			
6	Explain aircraft fabric covering.	10	CO1	L-2
7	List and explain the materials used for rockets and missile.	10	CO3	L-2
	OR			
8	Explain different types of propellants used in Rockets	10	CO3	L-2
9	the following: • Parkerizing • Bonderizing	10	CO3	L-2

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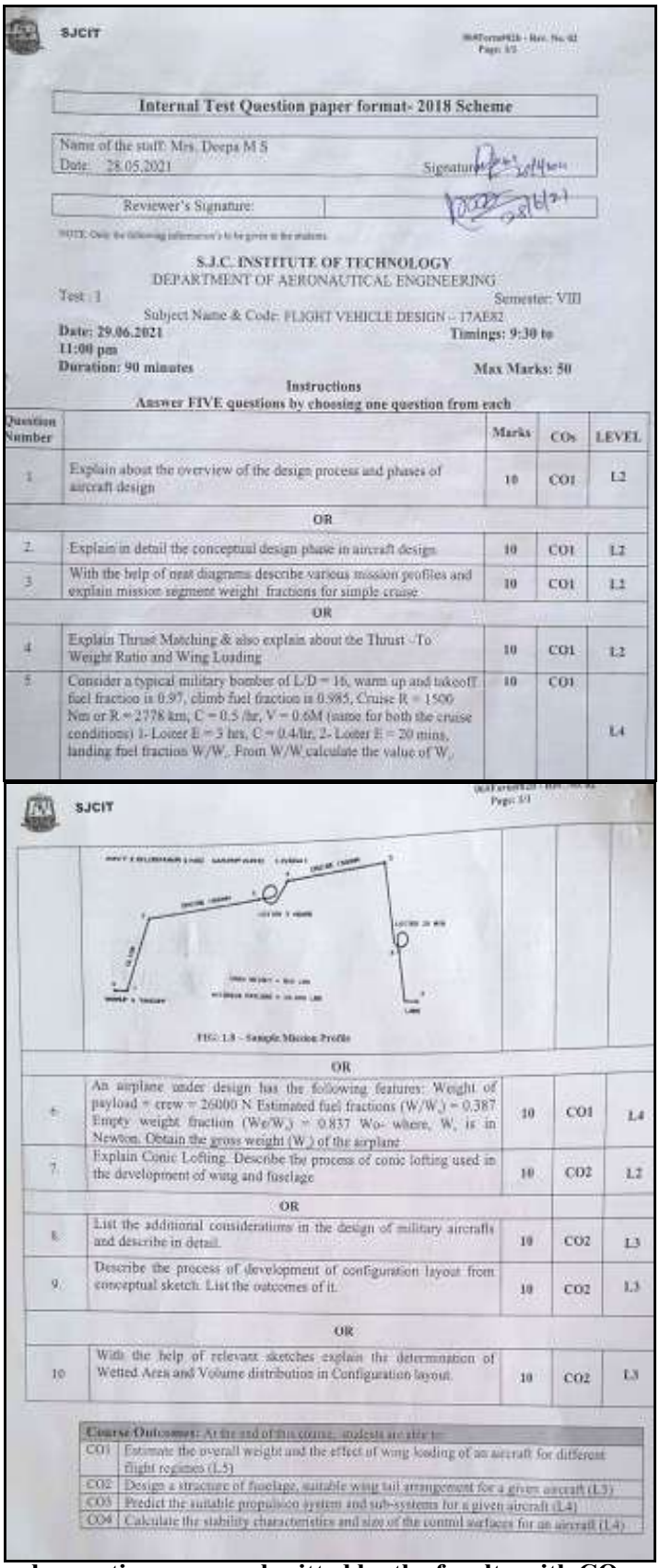
	OR			
10	Describe the following: • Chrome Pickle treatment • Sealed chrome pickle	10	CO3	L-2

COURSE OUTCOMES:

On successful completion of this course, students should be able to

CO-1. Summarize the properties, Production methods, inspection methods, testing of aircraft materials(L-2)
CO-2. Describe the properties of super alloys, ablative materials and high energy materials(L-2)
CO-3. Understand material corrosion process and prevention technique. (L-2)

Figure 2.2.2.1a: Sample question paper submitted by the faculty with COs and Bloom's learning levels.



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Internal Test Question paper format- 2018 Scheme

Name of the staff: Mrs. Deepa M S
Date: 28.05.2021 Signature

Reviewer's Signature:

S.J.C. INSTITUTE OF TECHNOLOGY
DEPARTMENT OF AERONAUTICAL ENGINEERING

Test : 1 Semester: VIII

Subject Name & Code: FLIGHT VEHICLE DESIGN – 17AE82

Date: 29.06.2021 **Timings: 9:30 to 11:00 pm**

Duration: 90 minutes **Max Marks: 50**

Instructions
Answer FIVE questions by choosing one question from each

Question Number		Marks	COs	LEVEL
1	Explain about the overview of the design process and phases of aircraft design	10	CO1	L2
	OR			
2.	Explain in detail the conceptual design phase in aircraft design	10	CO1	L2
3	With the help of neat diagrams describe various mission profiles and explain mission segment weight fractions for simple cruise	10	CO1	L2
	OR			
4	Explain Thrust Matching & also explain about the Thrust -To Weight Ratio and Wing Loading	10	CO1	L2
5	Consider a typical military bomber of L/D = 16, warm up and takeoff fuel fraction is 0.97, climb fuel fraction is 0.985, Cruise R = 1500 Nm or R = 2778 km, C = 0.5 /hr, V = 0.6M (same for both the cruise conditions) 1- Loiter E = 5 hrs, C = 0.4/hr, 2- Loiter E = 20 mins, landing fuel fraction W/W. From W/W calculate the value of W.	10	CO1	L4

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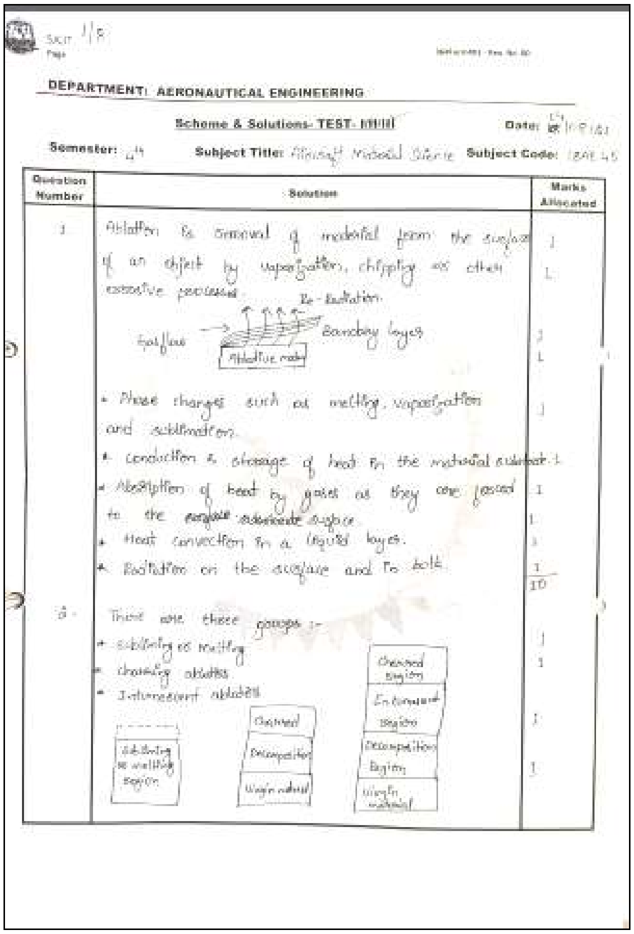
FIG: 1.8 – Sample Mission Profile

	OR			
6	An airplane under design has the following features: Weight of payload + crew = 26000 N Estimated fuel fractions (W/W_o) = 0.387 Empty weight fraction (We/W_o) = 0.837 Wo- where, W_o is in Newton. Obtain the gross weight (W_o) of the airplane	10	CO1	L4
7	Explain Conic Lofting. Describe the process of conic lofting used in the development of wing and fuselage	10	CO2	L2
	OR			
8.	List the additional considerations in the design of military aircrafts and describe in detail.	10	CO2	L3
9.	Describe the process of development of configuration layout from conceptual sketch. List the outcomes of it.	10	CO2	L3
	OR			
10	With the help of relevant sketches explain the determination of Wetted Area and Volume distribution in Configuration layout.	10	CO2	L3

Course Outcomes: At the end of this course, students are able to:	
CO1	Estimate the overall weight and the effect of wing loading of an aircraft for different flight regimes (L5)
CO2	Design a structure of fuselage, suitable wing tail arrangement for a given aircraft (L3)
CO3	Predict the suitable propulsion system and sub-systems for a given aircraft (L4)
CO4	Calculate the stability characteristics and size of the control surfaces for an aircraft (L4)

Figure 2.2.2.1b: Sample question paper submitted by the faculty with COs and Bloom's learning levels.



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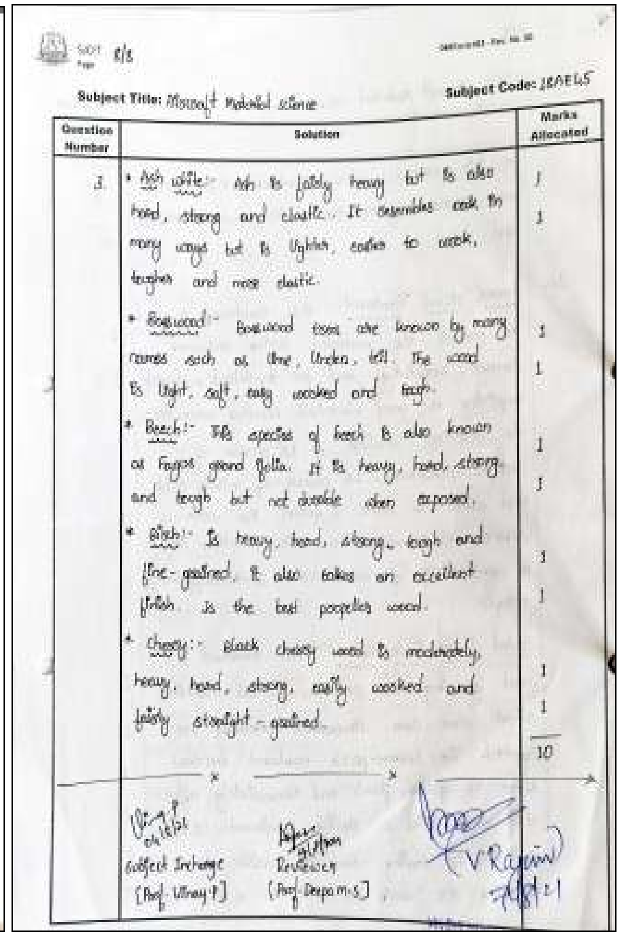
DEPARTMENT: AERONAUTICAL ENGINEERING

Scheme & Solutions- TEST- I/II/III Date: 10/8/21

Semester: 4 **Subject Title:** Aircraft Material Science **Subject Code:** 18AE45

Question Number	Solution	Marks Allocated
1	Ablation is removal of material from the surface of an object by vaporization, chipping or other erosive processes.	1 1
	[diagram: Re-Radiation, Gas flow, Boundary layer, Ablative material]	1 1
	* Phase changes such as melting, vaporization and sublimation.	1
	* conduction & storage of heat in the material substrate	1
	* Absorption of heat by gases as they are forced to the ablative surface.	1 1
	* Heat convection in a liquid layer.	1
	* Radiation on the surface and in bulk.	1 10
2	There are three groups :- * subliming or melting * charring ablates * Intumescent ablates	1 1
	[diagrams: Subliming or melting region; Charred, Decomposition, Virgin material; Charred region, Intumescent region, Decomposition region, Virgin material]	1 1



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Subject Title: Aircraft Material science **Subject Code:** 18AE45

Question Number	Solution	Marks Allocated
3	* Ash white:- Ash is fairly heavy but is also hard, strong and elastic. It resembles oak in many ways but is lighter, easier to work, tougher and more elastic.	1 1
	* Basswood:- Basswood trees are known by many names such as lime, linden, tell. The wood is light, soft, easy worked and tough.	1 1
	* Beech:- This species of beech is also known as Fagus grand folia. It is heavy, hard, strong and tough but not durable when exposed.	1 1
	* Birch:- Is heavy, hard, strong, tough and fine-grained. It also takes an excellent finish. Is the best propeller wood.	1 1
	* Cherry:- Black cherry wood is moderately heavy, hard, strong, easily worked and fairly straight-grained.	1 1 10

Subject Incharge [Prof. Uday P] — Reviewer [Prof. Deepa M.S] — V Rajani

Figure 2.2.2.2: Sample Scheme and Solution for Evaluation

2.2.3. Quality of Student Projects (25)

Project Coordinators and Faculty members educate students carry out project works in different domains/areas of their interest. Coordinators sends circular for identifying the project works in their respective domains such as (not limited to)

- Aerodynamics
- Aircraft Structures
- Aircraft Propulsion
- Flight Mechanics and Control
- Aircraft Design
- Unmanned Aerial Vehicles (UAV)

Projects are also broadly classified as

1. ***Industry projects***: Under this category, the project work is carried out in an industry or an external organization with identified internal and external guides. Around 75% of the projects are done at the college. Around **20-25%** of the projects are done at the Industries/Institutes like HAL. ADE, Bangalore Aircraft Industries limited, SandI Engineering Solutions etc.,
2. ***In-house projects:*** Under this category, the project work is carried out under the supervision of a faculty from the department. Around **75-80%** of the projects are done at the college.

The department encourages students to undertake relevant, achievable, time bound projects either in the college or at the industry to solve problems in any of the above domains with social impact. Students can form group/team on their own, consisting of minimum 2 to maximum 4 members. The department has systematic procedure to monitor the Project work continuously from beginning to end of the project. Students are encouraged to publish paper in Journals and conferences at the end of the project. The figure 2.2.3.1 shows the flow chart of project process.

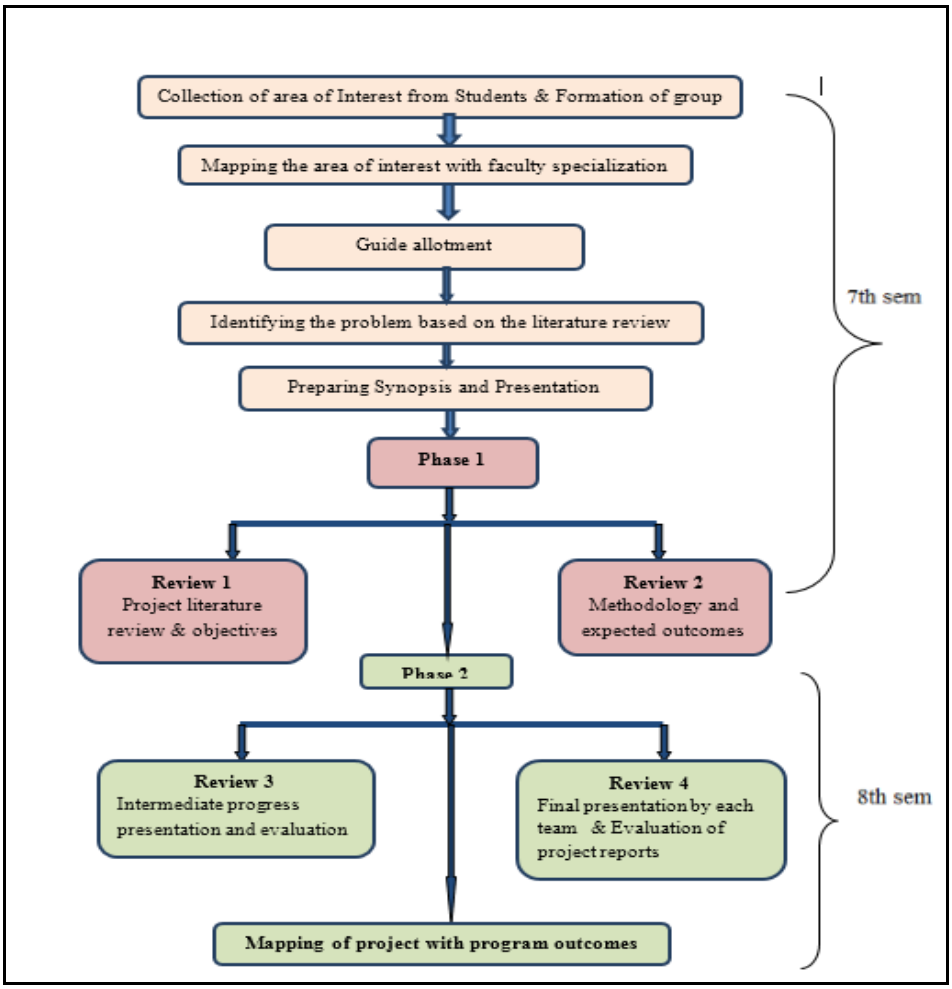

Figure 2.2.3a Flow Chart of Project Process.

Project work Review Schedule:

CBCS SCHEME (BATCH 2017-21)

Timeline	Task	Particulars
	SEMESTER SEVEN	
1st week	Call for project batch and Guide allotment	• Students are invited to form their batch and get registered with the project coordinator of the department. • The project synopsis submitted by the students is pre-evaluated by project committee.
2nd week	Synopsis Submission	• The submitted project synopsis is reviewed by the committee constituted by HOD and guides will be allotted based on their specialization and area of the project • Final synopsis is submitted to project coordinator

3rd week	First Review –Phase I	Students are instructed to submit requirements/ specifications and give a power point presentation for the project including literature survey (Evaluation phase I by the Review Committee)
7th week	Second Review –Phase I	Students are instructed to submit Project phase –I report which includes Literature review, Problem Identification and Methodology to be adopted for the project and give a power point presentation for the project. (Evaluation phase II by the Review Committee)
SEMESTER EIGHT		
3rd week	First Review –Phase II	Students are instructed to submit the progress of project and give a power point presentation for the project including previous semester work (Evaluation phase II by the Review Committee)
7th week	Second Review –Phase II	Students are instructed to submit design document /interim results of the project and give a power point presentation for the project. (Evaluation phase II by the Review Committee)
11th week	Final Demonstration	Students are instructed to submit complete project report with university compliance and give a power point presentation for the project including Demo of the model developed if any (Evaluation phase II by the Review Committee)
14th week	Project internal marks announcement	The marks for the project work is announced and processed according to the university regulations.

Table B 2.2.3.1: Project Work Review Schedule

Rubrics for Project Internal Evaluation:

CBSC SCHEME- 2017-21

The Internal project Evaluation is carried out in 2 Phases as per the University norms Phase I in Seventh Semester and Phase II in Eighth Semester. The details are shown below

Phase – I (Preliminary Project Evaluation)

Sl. No.	Evaluation scheme	Marks
1.	Literature Review	10
2.	Problem Identification and Definition	10
3.	Significance and Relevance of Work	5
4.	Presentation and Report	15
Total		40

Phase – I (Project Synopsis and Project Seminar Evaluation)

Sl. No.	Evaluation scheme	Marks
1.	Objectives and Methodology of Project	10
2.	Plan of Execution	5
3.	Project Seminar	20
4.	Project Synopsis Report	25
Total		60

Phase – II (Project Intermediate Evaluation)

Sl. No.	Evaluation scheme	Marks
1.	Plan of Execution	5
2.	Progress of Work	10
3.	Implementation/Results	5
4.	Presentation and Report	20
Total		40

Phase – II (Project End Evaluation)

Sl. No.	Evaluation scheme	Marks
1.	Plan of Execution	5
2.	Progress of Work	10
3.	Implementation/Results	5
4.	Presentation and Report	20
Total		40

The final project evaluation marks are the sum of phase-I and phase-2 evaluation marks.

Table B2.2.3.2 List of Projects (2017 - 2021) Batch

List of Projects (2017 - 2021 Batch)

Batch no.	USN	Name of the Student	Project Title	Domain/Area
1	1SJ17AE009	Avesuddin Siddiqi	Optimization of Programme in Drone Control System used for Search Operations	UAVs/Application and Model based
	1SJ17AE027	Mohan D C		
	1SJ17AE039	Satish Kumar		
	1SJ17AE048	Nandan Kumar		
2	1SJ17AE018	Shreyas Prakash K	CFD Analysis of Blended Wing Body	Aircraft Design/ Research based
	1SJ17AE022	Mahesh D N		
	1SJ17AE029	Nihal N		
	1SJ17AE032	Pavan Kalyan B V		
3	1SJ17AE017	Jason Jeevan	Adaptive Modelling and Structural Optimization of Wing Box	Aircraft Structures/ Research based
	1SJ17AE029	Nikhil		
	1SJ17AE012	Lokesh		
	1SJ17AE010	Basavaraju		
4	1SJ17AE004	Akash H A	Analysis of Mechanical Properties of Hybrid Reinforced Polymer Composites	Composites/ Application based
	1SJ17AE011	Bharath B		
	1SJ17AE014	Eragowda H G		
	1SJ17AE044	Suhas C		
5	1SJ17AE002	Abhijeet	Design and Noise suppression in supersonic wind tunnel	Aerodynamics/ Application based
	1SJ17AE021	Magdum Arihant Rajgonda		
	1SJ17AE040	Siddharth Choudhary		
	1SJ16AE002	Abhilash M		
6	1SJ17AE041	Sridevi M Herle	Analysis and Topology Optimization of Aircraft Wing	Aircraft Structures/ Research based
	1SJ17AE005	Akshata Gundeti		
	1SJ17AE037	Sandeep D		
	1SJ17AE043	Subhra Bera		
7	1SJ17AE025	Megha Mennikeri	Mathematical Model of 6 DOF Rigid Body Fixed Wing Aircraft and its Response for an Atmospheric and Pilot Inputs	Aircraft Design/ Research based
	1SJ17AE028	Nethra J		
	1SJ17AE031	Nishat Momin		
	1SJ17AE042	Subham		
8	1SJ17AE013	Chandana N	Design and Analysis of Aircraft Interior composite Panel for Minimum weight through stress Analysis	Aircraft Structures/ Design based
	1SJ17AE020	Lochana B M		
	1SJ17AE033	Pruthvija P		
	1SJ17AE019	Kumar		
9	1SJ17AE015	Firdose Banu	Design and linear static analysis of delta wing of Fighter Aircraft	Aircraft Structures/ Design based
	1SJ17AE023	Malathi		
	1SJ17AE006	Amrutha		
	1SJ17AE016	Jahanavi		
10	1SJ17AE035	Sachin Reddy	Transonic flutter analysis for wing section using CFD	Aircraft Structures/ Research based
	1SJ17AE049	Gurumalesh		
	1SJ17AE037	Sandeep N		
	1SJ17AE024	Manoj C		

Table B2.2.3.3 List of Projects (2016 - 2020) Batch

List of Projects (2016 - 2020 Batch)

Batch No.	USN	Name of the Student	Project Title	Domain/Area
1	1SJ16AE037	Saksham Mutreja	Numerical analysis of an axial flow compressor stage at Different flow angles using CFD	Propulsion/Software Analysis based
	1SJ16AE015	Hidayathulla		
	1SJ16AE016	Inchara Vishwakarma L		
	1SJ16AE030	Nawaz Ahmed		
2	1SJ16AE014	Gawai Tushar Vilas	Combined Droop nose and trailing edge effect on Airfoil's Aerodynamics	Aerodynamics/ Research based
	1SJ16AE051	Patil Jagadish Shivaji		
	1SJ16AE027	Narendra R		
	1SJ16AE007	Ashpak		
3	1SJ16AE024	Mantagoud Sugannareddy	Study and Development of Natural / Synthetic Hybrid Composites	Aircraft Structures/ Model & Application based
	1SJ16AE040	Santosh Yankappa Baraddi		
	1SJ16AE048	Vishal Gajanan Pawar		
	1SJ15AE050	Vinay Temkar. S		
4	1SJ16AE012	Darshan N	Effect of sweep on blended wing body aircraft	Aircraft Design/ Research based
	1SJ16AE019	Komalesh B E		
	1SJ16AE001	A N R Gowda		
	1SJ16AE035	Rajesh P		
5	1SJ16AE045	Sujeeth P	Design and Development of Aircraft Wing Spar Using Composite Material	Aircraft Structures/ Model based
	1SJ16AE034	Rahul P		
	1SJ16AE021	Lakshmi Narasimha R		
	1SJ16AE047	Vandana K N		
6	1SJ16AE023	Manoj B E	Design and construction of a TRUAV	Aircraft Design/ Model based
	1SJ16AE006	Ashik Ram Gowda R		
	1SJ16AE009	Bhuvan K		
	1SJ16AE025	Manu Gowda K S		
7	1SJ16AE020	Kotresh V G	Design of an Aircraft Pressure Bulk Head Through Stress Analysis Approach for Minimum Structural Weight	Aircraft Structures/ Application based
	1SJ16AE036	Sai Tulasi Nehashree V M		
	1SJ16AE029	Naveen M Sajjan		
	1SJ16AE018	Katrodiya Mohit Khodabhai		
8	1SJ16AE049	S Yashwanth	Computational Analysis of Linear and Annular Plug Nozzles	Aircraft Propulsion/Research based
	1SJ16AE038	Sangita Mullick		
	1SJ16AE041	Sata Jahnavi Tarunkumar		
	1SJ16AE050	Ashutosh Kumar Sahu		
9	1SJ16AE031	Nisarga V S	Design and analysis of Bio-inspired Airfoil at low Reynold's Number	Aerodynamics/ Application based
	1SJ16AE033	Rachana M		
	1SJ16AE004	Anusha V		
10	1SJ16AE044	Ganne Shilpa Govind	Mathematical modeling and simulation of Hohmann and Bi-elliptical Orbital Maneuver	Flight Mechanics/ Simulation based
	1SJ16AE010	Chandana N Nayak		
	1SJ16AE022	M N Reshmaraj		
	1SJ16AE005	Archana V		

Table B2.2.3.6 List of Projects (2015 - 2019) Batch

List of Projects (2015 – 2019 Batch)

Batch No.	USN	Name of the Student	Project Title	Domain/Area
1	1SJ15AE011	Dhanush G J	Numerical Modelling of Rocket Launch Vehicle during the Lift-off Phase in Atmosphere.	Flight Mechanics/ Software Analysis
	1SJ15AE009	Deepak B S		
	1SJ15AE001	Ajith Patil J R		
	1SJ15AE018	Manjunath		
2	1SJ15AE008	Chinmai P S	Structural analysis of helicopter main rotor blade	Structures/Software Analysis based
	1SJ15AE021	Naveen Kumar G K		
	1SJ15AE016	Karthik G R		
3	1SJ15AE041	Srivatsa R	Computational analysis on corrugated air foil at low Reynolds number	Aerodynamics/ Software Analysis based
	1SJ15AE003	Anil Kumar C		
	1SJ15AE017	Lakshitha P		
	1SJ14AE055	Kishore Reddy		
4	1SJ15AE019	Manoj Kumar R S	Experimental and thermal characterization of carbon fibre in forced composite	Aircraft Structures/ Research & Application based
	1SJ15AE023	Niharika B		
	1SJ15AE025	Nithin S M		
	1SJ15AE046	Tejaswini C G		
5	1SJ15AE051	Vinuth N	Effects of Geometric parameters on performance of sweeping jet actuator	Aerodynamics/ Research based
	1SJ15AE043	Sushanth Gowda B C		
	1SJ15AE029	Poornananda.T		
	1SJ14AE008	Arunkumar.B. S		
6	1SJ15AE052	Vivek K S (Tl)	Design of mini solar UAV	UAVs/ Design & Model based
	1SJ15AE002	Akshay H N		
	1SJ15AE027	Patil Jayant Vijaykumar		
	1SJ15AE034	Rohith M		
7	1SJ15AE033	Renukashivacharya Swamy Hiremath	CFD analysis of fixed wing MAV with bio-inspired winglets	UAVs/ Software Analysis
	1SJ15AE042	Subhasa Kallapur		
	1SJ15AE014	Gagandeep Yadav B M		
	1SJ15AE030	Priyanka Singh		
8	1SJ15AE013	G Vishnu	Parametric study on particles of cold spray technology with numerical analysis	Aircraft Design/ Research based
	1SJ15AE045	Tanuja M S		
	1SJ15AE004	Arif T. D		
	1SJ15AE005	Chaithra B R		
9	1SJ15AE032	Ramya R	Stability Analysis and PID controller Design for Dynamic motion of aircraft using MAT LAB	Flight Mechanics/ Design based
	1SJ15AE006	Chandana M		
	1SJ15AE007	Chathurved S		
	1SJ15AE026	Pankaj Kumar		
10	1SJ15AE044	Swati S Acharya	Numerical simulation and optimization of fighter aircraft wing with fence.	Aircraft Design/ Application based
	1SJ15AE031	Raghavendra		
	1SJ15AE048	Vaishnavi P		
11	1SJ15AE015	Gowtham R Nazre	Aerodynamic analysis on backward stepped airfoil with optimum depth	Aerodynamics/ Research based
	1SJ15AE037	Santosh Gautam		
	1SJ15AE022	Navya Nayak		
	1SJ15AE020	Mansoor M		

Working Prototypes and Enhancing the Relevance of Projects:

- The best projects identified will be sent to different colleges/institute for participation in exhibition
- The internal guide will help the students to publish their work in national/ international conference and journal.

Figure 2.2.3.1a: Project executed by the students

Figure 2.2.3.1b: Mini Projects executed by the students

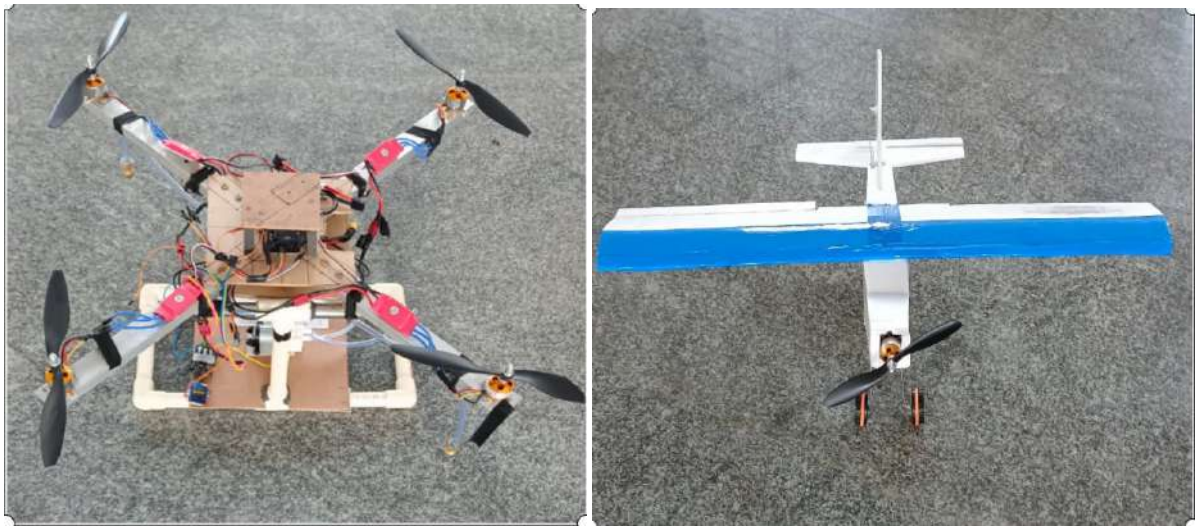

Figure 2.2.3.1c: Mini Projects executed by the students

Figure 2.2.3.1d: Projects exhibited by the students

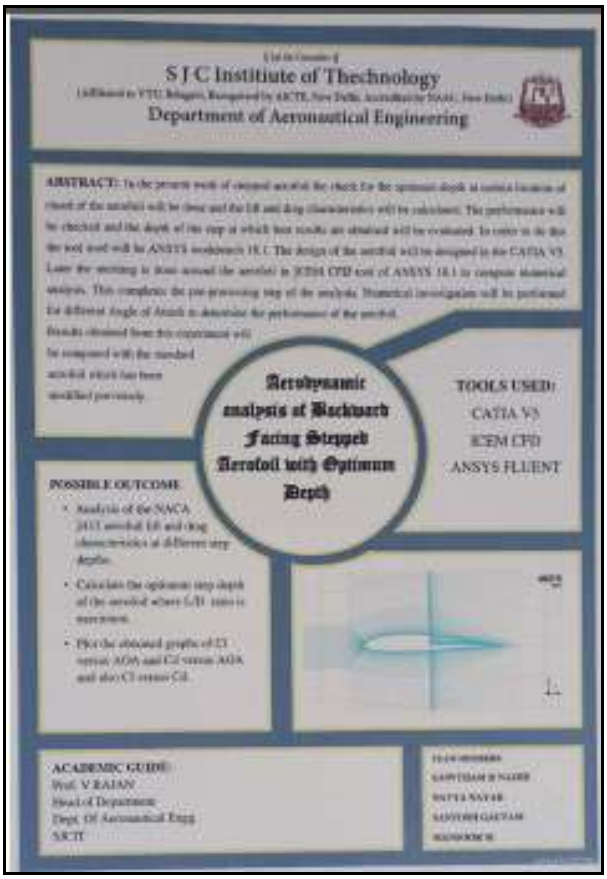

Figure 2.2.3.1e: Projects exhibited by the students

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pDepartment: AERONAUTICAL ENGINEERING

Sub: Project Work Phase –II (REVIEW-2) Code:17AEP85

PROJECT INTERMEDIATE EVALUATION

Sl. No.	Date of Evaluation	Project Title	USN	Name	Evaluator Details	Components / Criteria of Evaluation				Total (60)	Sign
						1 (10 M)	2 (10M)	3 (15M)	4 (25M)		
1	12-7-21	Optimization of Programme in Drone Control System used for Search Operations	1SJ17AE009	AVESUDDIN SIDDIQI	Prof.Gp.Capt.V. Rajan (Retd)	9	9	14	24	56	
			1SJ17AE027	MOHAN DC		9	9	14	24	56	
			1SJ17AE039	SATISH KUMAR		9	9	14	24	56	
			1SJ17AE048	NANDAN KUMAR		9	9	14	24	56	
2	12-7-21	CFD Analysis of Blended Wing Body	1SJ17AE018	SHREYAS PRAKASH K	Prof.Gp.Capt.V. Rajan (Retd)	10	10	13	25	58	
			1SJ17AE022	MAHESH DN		10	10	13	25	58	
			1SJ17AE029	NIHAL N		10	10	13	25	58	
			1SJ17AE032	PAVAN KALYAN BV		10	10	13	25	58	
3	12-7-21	Adaptive Modelling and Structural Optimization of Wing Box	1SJ17AE017	JASON JEEVAN	Prof.Gp.Capt.V. Rajan (Retd)	10	10	13	25	58	
			1SJ17AE030	NIKHIL		10	10	14	25	59	
			1SJ17AE012	LOKESH		10	10	14	25	59	
			1SJ17AE010	BASAVARAJU		10	10	13	25	58	

Figure 2.2.3.4: Phase – II (Project Intermediate) Evaluation by the Reviewer

Best Student Projects:

The department encourages the students to participate in technical Expo/Project showcasing event. The evaluation committee consists of industry experts, academia expert and internal experts. The best project will beselected by said evaluation team based on Originality, Organization of Project report, Technical Content (Significant Contributions), Presentation, Relevance and Clarity of drawings, graphs and tables, Experimental Results / Discussions, Clarity in Language and References (adequacy and correct citation).

Table B2.2.3.7 Best Student Projects List – 2017-21 batch

Year 2020 – 21

SL. NO	USN	Name of the students	Title of the project	Area of work carried out	POs/PSOs attainment
1	1SJ17AE018	Shreyas Prakash K	CFD Analysis of Blended Wing Body	Research based	PO1to PO12 PSO1, PSO2
	1SJ17AE022	Mahesh D N			
	1SJ17AE029	Nihal N			
	1SJ17AE032	Pavan Kalyan B V			
2	1SJ17AE017	Jason Jeevan	Adaptive Modelling and Structural Optimization of Wing Box	Research based	PO1to PO12 PSO1, PSO2
	1SJ17AE029	Nikhil			
	1SJ17AE012	Lokesh			
	1SJ17AE010	Basavaraju			

Table B2.2.3.8 Best Student Projects List – 2016-20 batch

Year 2019 – 20

SL. NO	USN	Name of the students	Title of the project	Area of work carried out	POs/PSOs attainment
1	1SJ16AE023	Manoj B E	Design and construction of a TRUAV	Application and Model based	PO1to PO12 PSO1, PSO2
	1SJ16AE006	Ashik Ram Gowda R			
	1SJ16AE009	Bhuvan K			
	1SJ16AE025	Manu Gowda K S			
2	1SJ16AE049	S Yashwanth	Computational Analysis of Linear and Annular Plug Nozzles	Research based	PO1to PO12 PSO1, PSO2
	1SJ16AE038	Sangita Mullick			
	1SJ16AE041	Sata Jahnavi Tarunkumar			
	1SJ16AE050	Ashutosh Kumar Sahu			

Table B2.2.3.7 Best Student Projects List – 2015-19 batch

Year 2018 – 19

SL. NO	USN	Name of the students	Title of the project	Area of work carried out	POs/PSOs attainment
1	1SJ15AE011	Dhanush G J	Numerical Modelling of Rocket Launch Vehicle during the Lift-off Phase in Atmosphere.	Application based	PO1to PO12 PSO1,PSO2
	1SJ15AE009	Deepak B S			
	1SJ15AE001	Ajith Patil J R			
	1SJ15AE018	Manjunath			
2	1SJ15AE019	Manoj Kumar R S	Experimental and thermal characterization of carbon fibre reinforced composite	Application and Research based	PO1to PO12 PSO1,PSO2
	1SJ15AE023	Niharika B			
	1SJ15AE025	Nithin S M			
	1SJ15AE046	Tejaswini C G			
	1SJ15AE006	Chandana M			
	1SJ15AE007	Chathurved S			
	1SJ15AE026	Pankaj Kumar			

KSCST PROJECT DETAILS 2015-16:

Table 2.2.3.11: Funded Project details

Project Proposal Ref #	Title of the project	Branch	Name ofthe guide	Students	Sanctioned amount
43S_BE_1933	Study and Development of Natural / Synthetic Hybrid Composites	AE	Prof. Rohith L G	Mantagoud Sugannareddy Santosh Yankappa Baraddi Vishal Gajanan Pawar Vinay Temkar. S	₹5000

Evidences of papers published /Awards received by projects etc. (2)

Table 2.2.3.12 List of papers presented/published by the project groups

Sl. No.	Project Title	Name	USN	Guide	Publication Details
1.	Adaptive Modelling and Structural Optimization of Wing Box	Jason Jeevan	1SJ17AE017	Prof. Deepa M S	Presented Project in Symposium cum Project Exhibition on Recent Advances in Engineering Science
		Nikhil	1SJ17AE029		
		Lokesh	1SJ17AE012		
		Basavaraju	1SJ17AE010		
2.	Design and Analysis of Aircraft Interior composite Panel for Minimum weight through stress Analysis	Chandana N	1SJ17AE013	Dr. Bino Prince Raja	Presented Project in Symposium cum Project Exhibition on Recent Advances in Engineering Science
		Lochana B M	1SJ17AE020		
		Pruthvija P	1SJ17AE033		
		Kumar	1SJ17AE019		
3.	Mathematical Model of 6 DOF Rigid Body Fixed Wing Aircraft and its Response for an Atmospheric and Pilot Inputs	Megha Mennikeri	1SJ17AE025	Prof. Vigneswaran C M	Presented Project in Symposium cum Project Exhibition on Recent Advances in Engineering Science
		Nethra J	1SJ17AE028		
		Nishat Momin	1SJ17AE031		
		Subham	1SJ17AE042		
4.	Numerical analysis of an axial flow compressor stage at Different flow angles using CFD	Saksham Mutreja	1SJ16AE037	Prof. Deepa M S	Presented paper in Symposium Trends of millennials' contributions and challenges in Aerospace Engineering
		Hidayathulla	1SJ16AE015		
		Inchara Vishwakarma L	1SJ16AE016		
		Nawaz Ahmed	1SJ16AE030		
5.	Study and Development of Natural / Synthetic Hybrid Composites	Mantagoud Sugannareddy	1SJ16AE024	Prof. Rohith L G	Submitted Project Proposal to KSCST
		Santosh Yankappa Baraddi	1SJ16AE040		
		Vishal Gajanan Pawar	1SJ16AE048		
		Vinay Temkar .S	1SJ15AE050		
6.	Effect of sweep on blended wing body aircraft	Darshan N	1SJ16AE012	Prof. Deepa M S	Presented paper in Symposium "Trends of millennials' contributions and challenges in Aerospace Engineering" seminar conducted by the
		Komalesh B E	1SJ16AE019		
		A N R Gowda	1SJ16AE001		
		Rajesh P	1SJ16AE035		
7.	Effect of sweep on blended wing body aircraft	Darshan N	1SJ16AE012	Prof. Deepa M S	Published paper in International Journal of Latest Trends in Engineering and Technology
		Komalesh B E	1SJ16AE019		
		A N R Gowda	1SJ16AE001		
		Rajesh P	1SJ16AE035		
8.	Design and construction of a TRUAV	Manoj B E	1SJ16AE023	Prof. Chandrika M B	Exhibited the product in Jnana Vignana Tantragnana Mela
		Ashik Ram Gowda R	1SJ16AE006		
		Bhuvan K	1SJ16AE009		
		Manu Gowda K S	1SJ16AE025		

9.	Experimental and thermal characterization of carbon fibre in forced composite	Manoj Kumar R S	1SJ15AE019	Dr. Bino Prince Raja	Presented the paper titled Mechanical Characterization of Carbon Fibre reinforced Epoxy Polymer in International Conference on Emerging Trends in Smart Technologies
		Niharika B	1SJ15AE023		
		Nithin S M	1SJ15AE025		
		Tejaswini C G	1SJ15AE046		
10.	Effects of Geometric parameters on performance of sweeping jet actuator	Vinuth N	1SJ15AE051	Prof. Paramesh T	Presented the paper titled Internal Flow Analysis on Sweeping Jet Actuator in International Conference on Emerging Trends in Smart Technologies
		Sushanth Gowda B C	1SJ15AE043		
		Poornananda.T	1SJ15AE029		
		Arunkumar.B.S	1SJ14AE008		
11.	Numerical Modelling of Rocket Launch Vehicle during the Lift-off Phase in Atmosphere.	Dhanush G J	1SJ15AE011	Prof. Deepa M S	Presented the paper titled Numerical Simulation of Rocket Launch Vehicle in International Conference on Emerging Trends in Smart Technologies and received BEST PAPER Award
		Deepak B S	1SJ15AE009		
		Ajith Patil J R	1SJ15AE001		
		Manjunath	1SJ15AE018		
12.	Effects of Geometric parameters on performance of sweeping jet actuator	Vinuth N	1SJ15AE051	Prof. Paramesh T	Published the paper titled Internal Flow Analysis on Sweeping Jet Actuator in the International Journal of Recent Technology and Engineering
		Sushanth Gowda B C	1SJ15AE043		
		Poornananda.T	1SJ15AE029		
		Arunkumar.B.S	1SJ14AE008		
13.	Stability Analysis and PID controller Design for Dynamic motion of aircraft using MAT LAB	Ramya R	1SJ15AE032	Prof. Praveen N	Presented paper titled PID Controller Design for Dynamic Motion of an Aircraft in International Conference on Emerging Trends in Smart Technologies
		Chandana M	1SJ15AE006		
		Chathurved S	1SJ15AE007		
		Pankaj Kumar	1SJ15AE026		

Student Project works carried out in various Domains:

Table B 2.2.3.13 Student Projects categorized on various domains

Sl. No.	Domain	Number of Projects		
		2020-21	2019-20	2018-19
1	Aerodynamics	1	2	3
2	Aircraft Structures	6	3	2
3	Aircraft Propulsion	-	2	1
4	Flight Mechanics and Control	1	1	1
5	Aircraft Design	1	2	2
6	Unmanned Aerial Vehicles (UAV)	1	-	2

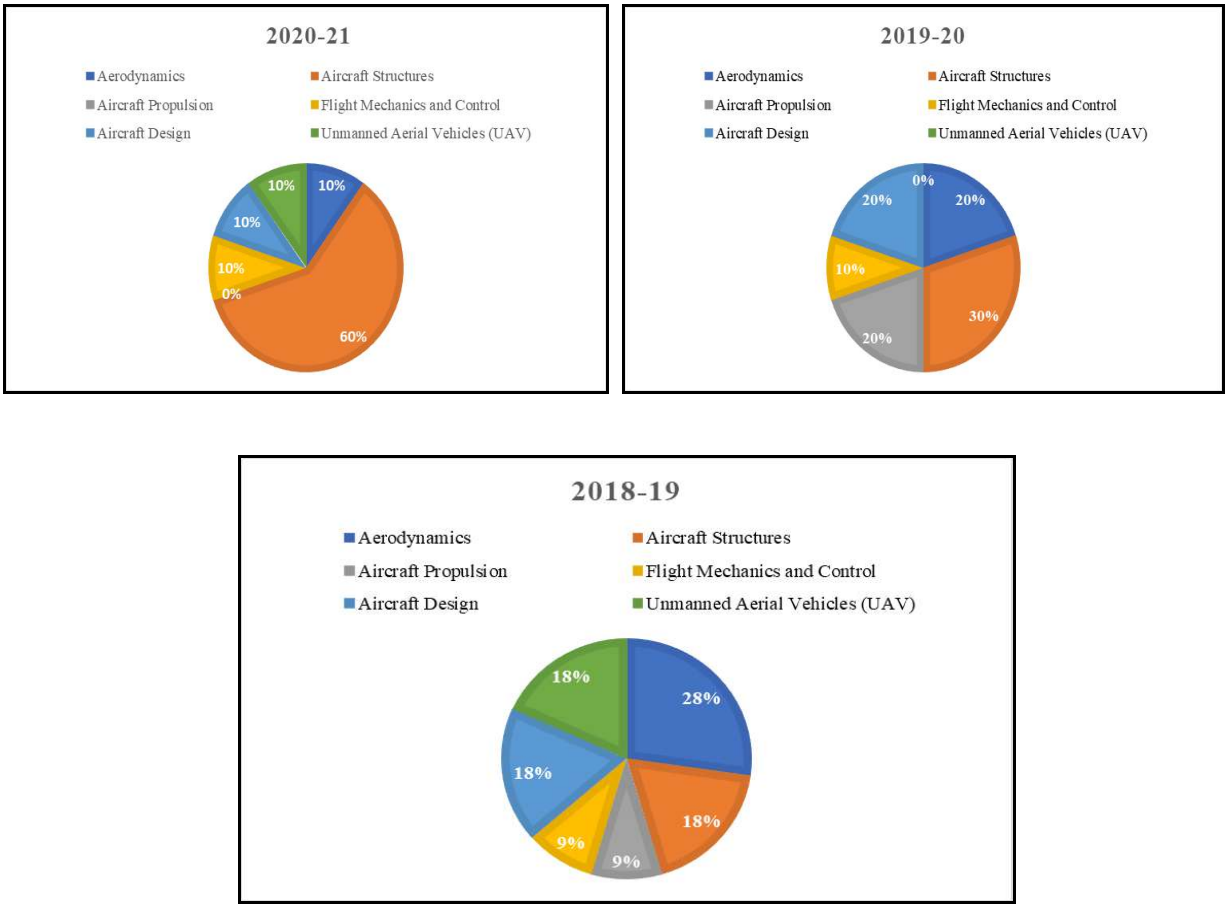


Figure 2.2.3.11: Projects categorized on various domains

Table B 2.2.3.14 gives the types and relevance of the projects and their contribution towards attainment of POs and PSOs.

Table B 2.2.3.14 Types and Relevance of the Projects and their contribution towards attainment of POsand PSOs

Academic year	CAY 2020-21	CAYm1 2019-20	CAY 2018-19	Attainmentof POs and PSOs
Total number of projects	10	10	11	PO1 to PO12, PSO1, PSO2
In-house projects	7 (70%)	9 (90%)	9 (81.81%)	PO1 to PO12, PSO1, PSO2
Industry projects	3 (30%)	1(10%)	2 (18.18%)	PO1 to PO12, PSO1, PSO2

2.2.4. Initiatives related to Industry Interaction (15)

The department always strives to impart quality education and research to meet the needs of growing industry, society and environment.

Following are the initiatives taken to improve industry interaction.

- MOUs are signed between industries and institute for guidance in Higher studies, providing Internship opportunities and conduction of value-added courses/certification course.
- Industry experts will be invited for technical talks on the required subjects/topics, for enriching the knowledge of students for better placement.
- Students will be sent to industries to carry out the project.
- Internship program at college level by industry experts/academic experts are arranged.
- Industrial visits are arranged.
- To keep both students and faculty updated with the latest developments in Aeronautical Engineering and also to strengthen the interaction with industries, the department has conducted guest lectures, seminars, symposiums, workshops and conferences.

MOUs with Industries:

Sl. No.	Name of the company with address	Date of signing MOUs	Activity conducted
1.	M/s S & I Engineering Solutions Pvt. Ltd.,	18.03.2021	Internship
2.	M/s EDS Technologies Pvt Ltd	24.02.2018	Software Training- CATIA V5
3.	M/s EDEX Academy	17.02.2016	Higher Studies (Ph. D and M.S. Programme)

Technical Talks from Industry Experts:

Table B 2.2.4.1 Technical talks delivered by Industry Experts

Sl.No	Resource Person	Topic	Date	Audience
1.	Dr. Arun Kumar G L Assistant Professor Department of Mechanical Engineering, NMIT, Bengaluru	CFD Analysis of Fluid Flow and Heat transfer characteristics in Gas Turbine	7th July 2021	4th, 6th and 8th Semester students from Dept. of AE
2.	Dr. Devaraj S Professor & Head(R&D) School of Mechanical Engineering, Reva University, Bengaluru	Processing, Characterization & Applications of Advanced Materials	10th May 2021	4th, 6th and 8th Semester students from Dept. of AE
3.	Dr. Nikhil Vijay Shinde Director, S & I Engineering Solutions Pvt., Ltd, Bengaluru	Technology Entrepreneur as a Career Option	7th May 2021	4th, 5th and 8th Semester students from Dept. of AE
4.	Dr. Munikrishna Nagaram CTO, S & I Engineering Solutions Pvt., Ltd, Bengaluru	Career Opportunities in Aeronautical and Aerospace Engineering	5th May 2021	4th, 6th and 8th Semester students from Dept. of AE
5.	Mr. Isaac Christopher, Assistant Engineer (LEVEL 2), Boeing Defence Department, Bengaluru	Stealth Technology	20th August 2020	3rd, 5th and 7th Semester students from Dept. of AE
6.	Dr. Balakrishnan Narayan Rao, Professor, Indian Institute of Science, Bengaluru	Ground Effect on Aircraft	3rd October 2019	4th, 6th and 8th Semester students from Dept. of AE
7.	Dr. T R Rajanna, General Manager, AERDC, HAL, Bengaluru	Ground Testing of Aircraft and engines	8th April 2019	3rd, 5th and 7th Semester students from Dept. of AE
8.	Mr. Andrew Swingler, Director of Assystem, Bengaluru	Gas Turbine Life Cycle Cost Optimization	19th July2018	3rd, 5th and 7th Semester students from Dept. of AE
9.	Dr. R K Mishra, CEMILAC (DRDO)	Design and Development of Aircraft Power Plants for Fighter Aircraft	7th April 2017	3rd, 5th and 7th Semester students from Dept. of AE

Impact analysis of industry institute interaction and actions taken thereof

- It will provide an Industry-Institute Interaction.
- Students will gain exposure to incorporate an entrepreneurial spirit and project-based thinking.
- Students will be able to implement their ideas in their final year projects.
- Students will get practical knowledge related to their theory subjects.
- Students will acquire skill to write report on industrial visit and final year projects.
- Students will get an idea about the recent developments in the mechanical industries.

2.2.5. Initiatives related to Industry Internship/Summer Training (15)

A. Industrial Training/Tours for students (3)

Department is regularly arranging industrial visit to our students once in a year/semester to different companies to improve the practical knowledge of students and also to get better knowledge about the latest technologies.

Table B 2.2.5.1 Industrial Visits arranged by the department

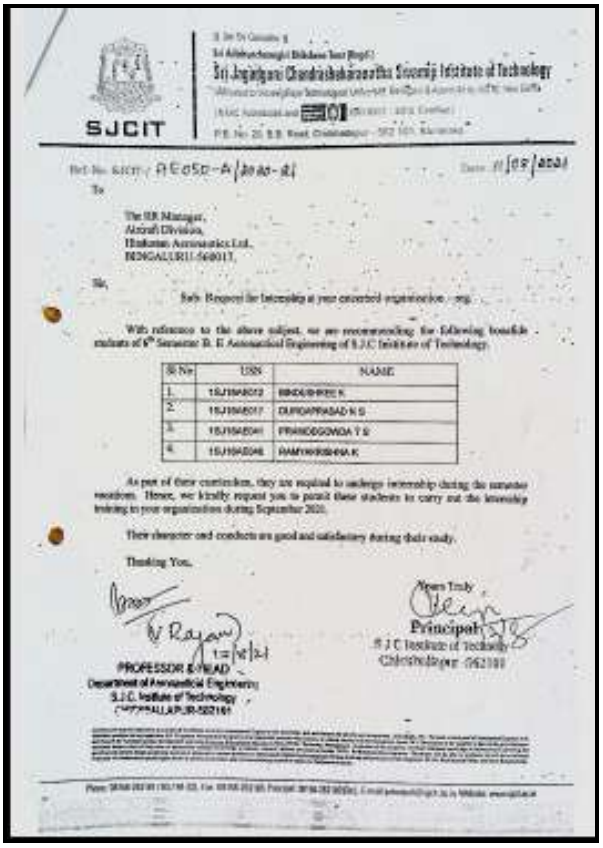
Academic Year		Date	Sem	Name of Industry Visited	No. of Students	Relevance to PO/PSO
2019-20	Aug-Nov 2019	25.09.2019	5th	Aero Engine Research and Development Centre (AERDC) HAL	37	PO1to PO12 PSO1,PSO2
		24.09.2019	7th	AFTC, Air Force, Bengaluru	31	
		24.09.2019	3rd	HAL Heritage Centre and Visveswaraya Museum	45	
2018-19	Feb-May 2019	4.04.2019	6th	ASTE, Air Force, Bengaluru	36	PO1to PO12 PSO1,PSO2
		22.02.2019	6th	Aero India 2019	42	
		22.02.2019	8th	Aero India 2019	45	
	Aug-Nov 2018	20.9.2018	7th	U R Rao Satellite Centre, Bengaluru	35	
		21.9.2018	5th	U R Rao Satellite Centre, Bengaluru	45	
2017-18	Feb-May 2018	30.04.2018	6th	Aero Engine Research and Development Centre (AERDC) HAL	45	

2016-17	**Feb-May 2017**	19.04.2017	4th	ASTE, Air Force, Bengaluru	45	PO1to PO12 PSO1,PSO2
		19.04.2017	6th	AFTC, Air Force, Bengaluru	34	
2015-16	**Feb-May 2016**	22.04.2016	4th	ASTE, Air Force, Bengaluru	39	
	Aug-Nov 2015	30.10.2015	3rd	Over Haul Division, HAL, Bengaluru	40	

Figure 2.2.5.1 Industries visited by our students

B. Industrial /internship /summer training of more than two weeks and post training Assessment (4)

The students are encouraged to take internship program during their semester break for a period of four weeks. Faculty members give their guidelines, suggestions and contact details of an internship. They also help the students by interacting with the industrial experts, provide the students recommendation letters and other necessary supports. The alumni coordinator constantly interacts with alumni those who are working in the industries and request them to provide necessary guidelines and supports for their graduating students internship. University has made student internship as mandatory.



SJCIT

Sri Jagadguru Chandrashekharanatha Swamiji Institute of Technology

To

The HR Manager,
Aircraft Division,
Hindustan Aeronautics Ltd.,
BENGALURU-560017.

Sir,

Sub: Request for internship at your esteemed organization - reg.

With reference to the above subject, we are recommending the following bonafide students of 6th Semester B. E Aeronautical Engineering of S.J.C Institute of Technology.

Sl No	USN	NAME
1.	1SJ19AE012	BINDUSHREE K
2.	1SJ19AE017	DURGAPRASAD K S
3.	1SJ19AE041	PRAMODGOWDA T S
4.	1SJ19AE046	RAMYAKRISHNA K

As part of their curriculum, they are required to undergo internship during the semester vacation. Hence, we kindly request you to permit these students to carry out the internship training in your organization during September 2021.

Their character and conduct are good and satisfactory during their study.

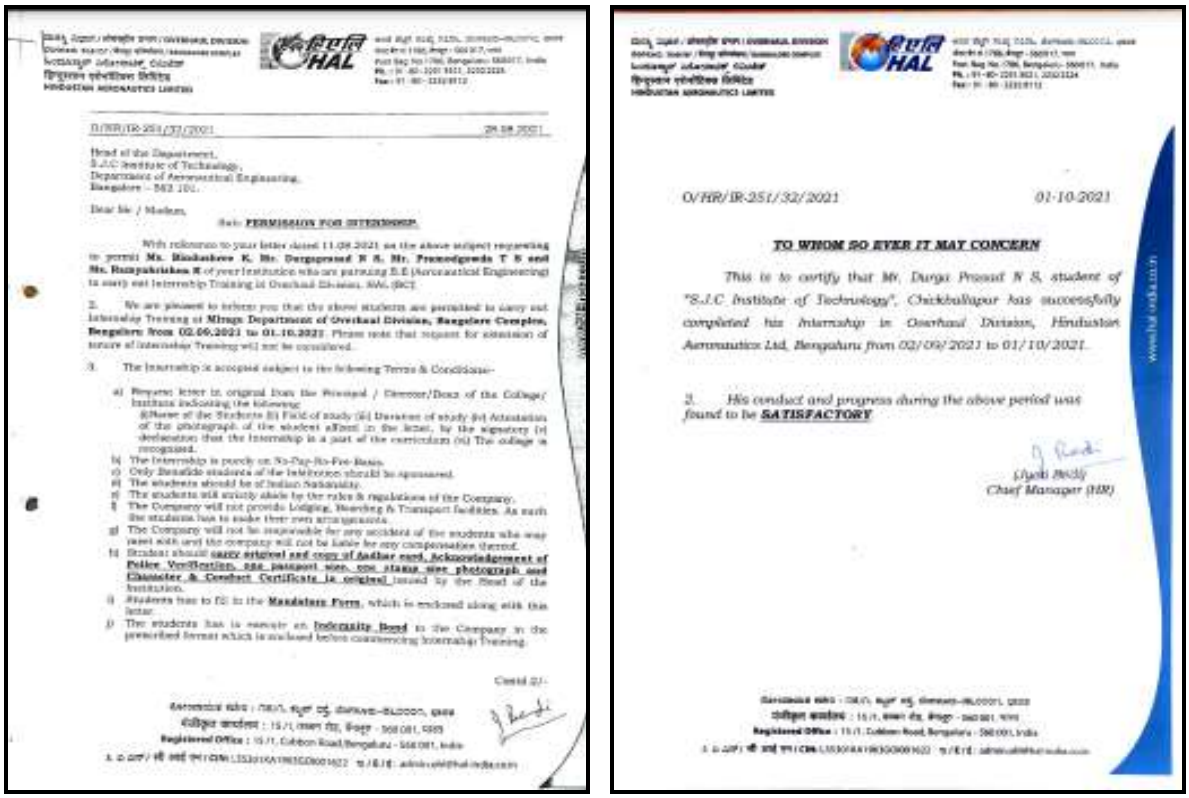
Thanking You,

Yours Truly

PROFESSOR & HEAD
Department of Aeronautical Engineering
S.J.C. Institute of Technology

Principal
S J C Institute of Technology

Figure 2.2.5.2a. Request for permission to do Internship in the Industry



O/HR/IR-251/32/2021 01-10-2021

TO WHOM SO EVER IT MAY CONCERN

This is to certify that Mr. Durga Prasad N S, student of "S.J.C. Institute of Technology", Chickballapur has successfully completed his Internship in Overhaul Division, Hindustan Aeronautics Ltd, Bengaluru from 02/09/2021 to 01/10/2021.

3. His conduct and progress during the above period was found to be **SATISFACTORY**

(Jyoti Bedi)
Chief Manager (HR)

Figure 2.2.5.2b. Permission from the Industry and Internship certificate from the industry

List of Students carried out Internships:

Table 2.2.5.2a: Internship details – CAY 2020-21

CAY [2020-21]					
Sl. No.	**Company Name**	**Student Name**	**USN**	**Duration**	**Date**
1.	Defence Research and Development Laboratory (DRDL), Hyderabad	Akshata Gundeti	1SJ17AE005	22.3.2021 to 10.04.2021	10.04.2021
2.	S & I Engineering Solutions Pvt. Ltd	Kota Shreyas Prakash	1SJ17AE018	1.03.2021 to 12.04.2021	1.03.2021
		Mahesh D N	1SJ17AE022		
		Manoj C	1SJ17AE024		
		Sachinreddy	1SJ17AE035		
		Sandeep N	1SJ17AE037		
		Gurumallesh K M	1SJ17AE049		
3.	TBI, ASPIRE, S J C Institute of Technology	Abhijeet	1SJ17AE002	15.03.2021 to 23.04.2021	15.03.2021
		Akash H A	1SJ17AE004		
		Magdum Arihant Rajgonda	1SJ17AE021		
		Megha Mannikeri	1SJ17AE025		
		Nethra J	1SJ17AE028		

		Nishat Momin	1SJ17AE031		
		Siddharth Chandra	1SJ17AE040		
		Sridevi M Herle	1SJ17AE041		
		Suhas C	1SJ17AE044		
		Abhilash M	1SJ16AE002		
4.	Bangalore Aircraft Industries Pvt., Ltd.,	Firdose Banu	1SJ17AE015	1.03.2021 to 30.3.2021	1.03.2021
		Kumar S	1SJ17AE019		
		Malathi S	1SJ17AE023		
5.	Contriver, Bengaluru	Eragowda H G	1SJ17AE014	1.03.2021 to 19.04.2021	1.03.2021
		Nandan Kumar S	1SJ17AE048		
6.	Centre of Excellence in Aerospace & Defence, VTU, Regional Office, Bengaluru	Basavaraju B N	1SJ17AE010	22.02.2021 to 1.04.2021	22.02.2021
		Bharath B	1SJ17AE011		
		C H Lokesh	1SJ17AE012		
		Jason Jeevan C J	1SJ17AE017		
		Pavan Kalyan B V	1SJ17AE032		
		Sandeep D	1SJ17AE036		
7.	Pantech Solutions, IETE Mumbai	Sandeep D	1SJ17AE036	1.09.2021 to 30.09.2021	1.09.2021
8.	Aerotics Technologies, Bengaluru	Amrutha R	1SJ17AE006	3.08.2021 to 31.08.2021	31.08.2021
		Avesoddin Siddiqui Fahimoddin Siddiqui	1SJ17AE009		
		Chandana N	1SJ17AE013		
		Jahanavi R	1SJ17AE016		
		Lochana B M	1SJ17AE020		
		Mohan D C	1SJ17AE027		
		Pruthvija P	1SJ17AE033		
		Subhra Bera	1SJ17AE043		
9.	Aqmenz Automation Private Limited	Nihal N	1SJ17AE029	20.7.2021 to 31.07.2021	20.7.2021
10.	Avian Aerospace	Mohammed Faisal Hussain	1SJ16AE026	8.7.2021 to 7.8.2021	8.7.2021
11.	Suzuki Motor Corporation	Surya J S	1SJ16AE0	10.1.2021 to 10.2.2021	10.1.2021

Table 2.2.5.2b: Internship details – CAYm1 2019-20

CAYm1 [2019-20]					
Sl. No.	**Company Name**	**Student Name**	**USN**	**Duration**	**Date**
1.	AERDC, HAL, Bengaluru	Santosh Yankappa Baraddi	1SJ16AE040	16.07.2019 to 31.07.2019	31.07.2019
		Sujeeth P	1SJ16AE045		
2.	LCA Tejas Division, HAL, Bengaluru	Ashpak Kajoori	1SJ16AE007	4.07.2019 to 3.08.2019	3.08.2019
		Gawai Tushar Vilas	1SJ16AE014		
		Patil Jagadish Shivaji	1SJ16AE051		
3.	Bangalore Aircraft Industries Pvt. Ltd, Bengaluru	Manugowda K S	1SJ16AE025	3.07.2019 to 3.08.2019	3.08.2019
4.	ENGINE Division, HAL, Bengaluru	Ashik Ram Gowda R	1SJ16AE006	6.07.2019 to 5.08.2019	5.08.2019
		Darshan N	1SJ16AE012		
		Lakshmi Narasimha R	1SJ16AE021		5.08.2049
		Rajesh P	1SJ16AE035		
5.	ENGINE Division, HAL, Bengaluru	Archana V	1SJ16AE005	6.07.2019 to 5.08.2019	5.08.2019
		Manoj B E	1SJ16AE015		
6.	ENGINE Division, HAL, Bengaluru	Hidayathulla	1SJ16AE023	5.07.2019 to 5.08.2019	5.08.2019
		Saksham Mutreja	1SJ16AE037		
7.	AVIAN Aerospace, Bengaluru	Mohammed Faisal Hussain	1SJ16AE026	08.07.2019 to 7.08.2019	7.08.2019
		Nawaz Ahmed	1SJ16AE030		
8.	Aerospace Division, HAL, Bengaluru	Vandana K N	1SJ16AE047	8.07.2019 to 7.08.2019	7.08.2019
		Inchara Vishwakarma L	1SJ16AE016		
9.	Aerospace Division, HAL Bengaluru	Mantagoud Sugannareddy	1SJ16AE047	8.07.2019 to 7.08.2019	7.08.2019
		Vishal Gajanan Pawar	1SJ16AE048		
10.	RWRDC, HAL, Bengaluru	Anusha V	1SJ16AE004	9.07.2019 to 8.08.2019	8.08.2019
		Nisarga V S	1SJ16AE031		
		Rachana M	1SJ16AE033		
11.	Bangalore Aircraft Industries Pvt. Ltd, Bengaluru	Katrodiya Mohit Khodabhai	1SJ16AE018	8.07.2019 to 7608.2019	24.08.2019
		Kotresh V G	1SJ16AE020		
		Naveen M Sajjan	1SJ16AE029		
		Rahul P	1SJ16AE034		
		Sai Tulasi Nehashree V M	1SJ16AE036		
12.	AIESEC in Damietta, Egypt	Bhuvan Shetty	1SJ16AE009	15.07.2019 to 31.08.2019	31.08.2019

13.	Overhaul Division, HAL, Bengaluru	Megha Mannikeri	1SJ17AE025	7.01.2020 to 6.02.2020	6.02.2020
		Nethra J	1SJ17AE028		
		Nishat Momin	1SJ17AE031		
14.	Centre of Excellence in Aerospace & Defence, VTU, regional Office, Bengaluru	ANR Gowda	1SJ16AE001	8.01.2020 to 6.02.2020	6.02.2020
		Kumar S	1SJ17AE018		
		Kota Shreyas Prakash	1SJ17AE019		
		Mahesh D N	1SJ17AE022		
15.	Overhaul Division, HAL, Bengaluru	Narendra R	1SJ16AE027	8.01.2020 to 7.02.2020	7.02.2020
		Ganne Shilpa Govind	1SJ16AE044		
16.	Aircraft Division, HAL, Bengaluru	Jason Jeevan C J	1SJ17AE017	16.01.2020 to 3.02.2020	8.02.2020
		Nikhil M	1SJ17AE030		
		Pavan Kalyan B V	1SJ17AE032		
		Sandeep D	1SJ17AE036		
17.	VSM Aerospace, Bengaluru	Chandana N Nayak	1SJ16AE010	15.01.2020 to 14.02.2020	14.02.2020
		M N Reshmaraj	1SJ16AE022		

Table 2.2.5.2c: Internship details – CAY m2 2018-19

CAYm2 [2018-19]					
Sl.No.	**Company Name**	**Student Name**	**USN**	**Duration**	**Date**
1.	Helicopter Division, HAL, Bengaluru	Chandana M	1SJ15AE006	17.01.2019 to 15.02.2019	16.02.2019
		Lakshitha P	1SJ15AE017		
		Swati S Acharya	1SJ15AE044		
2.	AVIAN Aerospace, Bengaluru	A N R Gowda	1SJ16AE001	26.01.2019 to 7.02.2019	11.02.2019
		Archana V	1SJ16AE005		
		Ashik Ram Gowda R	1SJ16AE006		
		Bhuvan K	1SJ16AE010		
		Chandana N Nayak	1SJ16AE012		
		Manoj B E	1SJ16AE023		
3.	Aircraft Division, HAL, Bengaluru	Navyanayak	1SJ15AE022	12.01.2019 to 31.01.2019	11.02.2019
		Priyanka Singh	1SJ15AE030		
		Vaishnavi P	1SJ15AE048		
4.	Mahindra Aerospace	Chaithra B R	1SJ15AE005	10.01.2019 to 9.02.2019	9.02.2019
5.	Overhaul Division, HAL, Bengaluru	Anusha V	1SJ16AE004	21.01.2019 to 8.02.2019	8.02.2019
		Sai Tulasi Nehashree V M	1SJ16AE036		
		Ganne Shilpa Govind	1SJ16AE044		

6.	Aerospace Composites Division, Helicopter Complex, HAL, Bengaluru	Narendra R	1SJ16AE027	17.01.2019 to 31.01.2019	31.01.2019
7.	Helicopter Division, HAL, Bengaluru	Saranya R	1SJ14AE043	14.01.2019 to 28.01.2019	28.01.2019
8.	Line Maintenance Division of Engineering department, AIR INIDA	Gawai Tushar Vilas	1SJ16AE014	18.07.2018 to 17.08.2018	16.08.2018
		Katrodiya Mohit Khodabhai	1SJ16AE018		
		Ganne Shilpa Govind	1SJ16AE044		
9.	Sansera Engineering Pvt. Ltd, Aerospace Division, Bengaluru	Nawaz Ahmed	1SJ16AE030	10.07.2018 To 28.07.2018	30.07.2018

Impact Analysis of Industrial Training/Internship

- Students gain exposure to the spirit of entrepreneurship
- Students will get practical knowledge related to their theory subjects
- Students will get an idea about the recent developments in the industries
- Students will improve their communication skills and gain knowledge about industry requirements and modern tools usage
- Students will be able to implement their ideas in their final year projects

CRITERIA 3

Course Outcomes and ProgramOutcomes

CRITERION 3	COURSE OUTCOMES AND PROGRAM OUTCOMES	120

3. COURSE OUTCOMES AND PROGRAM OUTCOMES (120)

3.1. Establish the correlation between the courses and the Program Outcomes (POs) and Program Specific Outcomes (PSOs) (20)

The Program Outcomes and Program Specific Outcomes as listed in Tables B2.1.1.1 and 2.1.1.2 respectively.

The program outcomes are achieved through curriculum that offers a number of mandatory courses as well as elective courses. For every course, outcomes are defined and are mapped to program specific outcomes. The correlation between the courses and program outcomes as well as program specific outcomes is shown in Table B.3.1.

Table B.3.1a Correlation between courses, POs and PSOs (2017-21 Batch) (CAY)

Sl. No.	Course Code	Course Name	CO – PO Correlation	CO – PSO Correlation
I SEMESTER				
1.	C101	Engineering Mathematics-I	PO1, PO2, PO3, PO4, PO5	PSO1,PSO2
2.	C102	Engineering Physics	PO1, PO2, PO3,	PSO1,PSO2
3.	C103	Elements of Civil Engineering and Mechanics	PO1, PO2, PO3, PO12	PSO1,PSO2
4.	C104	Elements of Mechanical Engineering	PO1, PO2	PSO1,PSO2
5.	C105	Basic Electrical Engineering	PO1, PO2, PO3	PSO1,PSO2
6.	C106	Workshop Practice	PO1, PO2, PO8, PO9, PO12	PSO1,PSO2
7.	C107	Physics Lab	PO1, PO2, PO3,	PSO1,PSO2
II SEMESTER				
8.	C108	Engineering Mathematics-II	PO1, PO2, PO3, PO4, PO5	PSO1, PSO2
9.	C109	Engineering Chemistry	PO1, PO2, PO3	PSO1, PSO2
10.	C110	Programming In C And Data Structures	PO1, PO2, PO3, PO4, PO12	PSO1
11.	C111	Computer Aided Engineering Drawing	PO1, PO2, PO3, PO4, PO8, PO9	PSO1, PSO2
12.	C112	Basic Electronics	PO1, PO2, PO3	PSO1, PSO2
13.	C113	CCP Lab	PO1, PO2, PO3, PO4, PO5, PO12	PSO1, PSO2
14.	C114	Engineering Chemistry Lab	PO1, PO2, PO3	PSO1
15.	C115	Environmental Studies	PO1, PO2, PO3, PO4, PO6, PO7	-

III SEMESTER				
16.	C201	Engineering Mathematics III	PO1, PO2 PO3, PO4, PO5	PSO1, PSO2
17.	C202	Elements Of Aeronautics	PO1, PO2, PO3, PO9, PO10, PO12	PSO1, PSO2
18.	C203	Aero Thermodynamics	PO1, PO2, PO3, PO4, PO9, PO12	PSO1
19.	C204	Mechanics of Materials	PO1, PO2, PO3, PO5, PO12	PSO1, PSO2
20.	C205	Mechanics of Fluids	PO1, PO2, PO3, PO4, PO12	PSO1, PSO2
21.	C206	Measurement & Metrology	PO1, PO6, PO7, PO8, PO9, PO10, PO12	PSO1, PSO2
22.	C207	Material Testing Lab	PO1, PO6, PO7, PO8, PO9, PO10, PO12	PSO1
23.	C208	Machine Shop Lab	PO1, PO6, PO7, PO8, PO9, PO10, PO12	PSO1
IV SEMESTER				
24.	C209	Engineering Mathematics - IV	PO1, PO2 PO3, PO4, PO5	-
25.	C210	Aerodynamics –I	PO1, PO2, PO3, PO4, PO12	PSO1, PSO2
26.	C211	Aircraft Propulsion	PO1, PO2, PO3, PO4, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PSO1, PSO2
27.	C212	Mechanisms And Machine Theory	PO1, PO2, PO3, PO4, PO9, PO10, PO12	PSO1
28.	C213	Aircraft Material Science	PO1, PO9, PO10, PO12	PSO1, PSO2
29.	C214	Turbomachines	PO1, PO2, PO3, PO4, PO9, PO10, PO12	PSO1, PSO2
30.	C215	Measurement & Metrology lab	PO1, PO2, PO3, PO6, PO7, PO9, PO10, PO12	PSO1
31.	C216	Computer Aided Aircraft Drawing	PO1, PO2, PO3, PO4, PO5, PO12	PSO1
V SEMESTER				
32.	C301	Management & Entrepreneurship	PO1, PO2, PO6, PO7,PO8,PO9,PO10,PO1,PO12	PS01, PSO2
33.	C302	Introduction To Composite Materials	PO1, PO2, PO3, PO9, PO10,PO12	PS01, PSO2
34.	C303	Heat And Mass Transfer	PO1, PO2, PO3, PO4, PO9, PO10,PO11,PO12	PS01, PSO2
35.	C304	Aircraft Structure-I	PO1, PO2, PO3, PO4,PO12	PS01, PSO2
36.	C305	Theory Of Vibrations	PO1, PO2, PO3, PO4, PO12	PS01
37.	C306	Basics Of Rockets & Missiles	PO1, PO2, PO3, PO4,PO9, PO12	PS01,PSO2
38.	C307	Aerodynamics Lab	PO1, PO2, PO3, PO4, PO5,PO6,PO7,PO8,PO9,PO10 ,PO11,PO12	PS01,PSO2
39.	C308	Energy Conversion & Fluid Mechanics Lab	PO1, PO2, PO3, PO9,PO10, PO12	

VI SEMESTER				
40.	C309	Aerodynamics-II	PO1, PO2, PO3, PO4, PO9,PO10,PO12	PS01,PSO2
41.	C310	Gas Turbine Technology	PO1, PO2,PO3, PO4, PO9,PO10, PO11,PO12	PS01,PSO2
42.	C311	Aircraft Performance	PO1, PO2, PO3, PO9,PO10, PO12	PS01,PSO2
43.	C312	Aircraft Structures-II	PO1, PO2, PO4,PO9,PO12	PS01,PSO2
44.	C313	Space Mechanics	PO1, PO2,PO3, PO4, PO9,PO10,PO12	PS01,PSO2
45.	C314	Finite Element Method	PO1, PO2, PO3,PO12	PSO1
46.	C315	Unmanned Aerial Vehicles Basics & Applications	PO1, PO2, PO3,PO12	PSO1,PSO2
47.	C316	Aircraft Propulsion Lab	PO1, PO2, PO3, PO4,PO6,PO7,PO9,PO10,PO12	PS01,PSO2
48.	C317	Aircraft Structures Lab	PO1, PO2, PO5, PO9, PO10,PO12	PSO1,PSO2
VII SEMESTER				
49.	C401	Control Engineering	PO1, PO2,PO3, PO4, PO9	PS01
50.	C402	Computational Fluid Dynamics	PO1, PO2,PO3, PO4, PO9,PO10,PO12	PS01,PSO2
51.	C403	Aircraft Stability And Control	PO1, PO2,PO3, PO9,PO10,	PS01,PSO2
52.	C404	Helicopter Dynamics	PO1, PO2, PO3, PO12	PS01
53.	C405	Guidance, Navigation & Control	PO1, PO2, PO3, PO4,PO5,PO9,PO12	PS01.PSO1
54.	C406	Modelling And Analysis Lab	PO1, PO2, PO3, PO4,PO5,PO9,PO12	PS01.
55.	C407	Flight simulation lab	PO1, PO2, PO3, PO4, PO5, PO9 ,PO10,PO12	PS01
56.	C408	Project Phase –I	PO1, PO2, PO3,PO9,PO10,PO11,PO12	PS01,PSO2
VIII SEMESTER				
57.	C409	Avionics	PO1, PO2, PO3,PO9,PO10,PO11,PO12	PS01,PSO2
58.	C410	Flight Vehicle Design	PO1, PO2, PO3, PO4, PO8,PO9,PO10,PO11,PO12	PS01,PSO2
59.	C411	Flight Testing	PO1, PO2, PO3, PO9,PO10	PS01,PSO2
60.	C412	Professional Practice/Internship	PO1, PO2, PO3, PO4, PO6, PO7, PO8, PO9, PO10, PO11, PO12	PS01
61.	C413	Project Work	PO1, PO2, PO3, PO8,PO9,PO10,PO12	PS01, PSO2
62.	C414	Seminar	PO1, PO2, PO3, PO10.	PS01,PSO2

3.1.1a. Course Outcomes (COs) (SAR should include course outcomes of one course from each semester of study, however, should be prepared for all courses and made available as evidence, if asked) (05)

The following tables B3.1.1.1 to B3.1.1.8 list the Course Outcomes of one course from each semester of study for the batch 2017-21 (CAY)
After a successful completion of the course, the student will be able to:

Table 3.1.1.1 Course Outcomes of Elements of Mechanical Engineering (First Semester) (2017-18)

Course	Course Outcomes
C104.1	Identify different sources of energy and their conversion process.
C104.2	Explain the working principle of hydraulic turbines, pumps, IC engines and refrigeration.
C104.3	Recognize various metal joining processes and power transmission elements.
C104.4	Understand the properties of common engineering materials and their applications in engineering industry.
C104.5	Discuss the working of conventional machine tools, machining processes, tools and accessories.
C104.6	Describe the advanced manufacturing systems.

Table 3.1.1.2 Course Outcomes of Computer Aided Engineering Drawing (Second Semester) (2017-18)

Course	Course Outcomes
C111.1	Understand the basic concepts of Engineering Drawing, Instruments, Lettering and Dimensioning.
C111.2	Demonstrate the usage of CAD software with application of basic knowledge in visualizing and drawing orthographic projections.
C111.3	Analyse and illustrate the views and positioning of points, lines, planes & solids
C111.4	Develop lateral surfaces of solids and isometric drawings of simple objects by reading the orthographic projection and also converting the isometric projection to orthographic

Table 3.1.1.3 Course Outcomes of Mechanics of Fluid (Third semester) (2018-19)

Course	Course Outcomes
C205.1	Compare the basic fluid properties and its effects on temperature and pressure change.
C205.2	Illustrate the Hydrostatic forces on submerged bodies and calculate the centre of the pressure and buoyant force for submerged and floating bodies.
C205.3	Estimate velocity, acceleration and stream function for an incompressible and inviscid flow.
C205.4	Calculate the loss of energy due to friction, bends, and pipe fittings on a given system.
C205.5	Illustrate the basic concepts of viscous and compressible flows.

Table 3.1.1.4 Course Outcomes of Aerodynamics I (Fourth semester) (2018-19)

Course	Course Outcomes
C211.1	Describe the fundamentals of fluid mechanics.
C211.2	Illustrate typical air foil characteristics and two-dimensional flows over air foil.
C211.3	Analyse the flow over different objects with combination of elementary flows
C211.4	Compute and analyse the incompressible flow over finite wings.
C211.5	Apply finite wing theory and describe high lift systems.

Table 3.1.1.5 Course Outcomes of Aircraft Structures I (Fifth semester) (2019-20)

Course	Course Outcomes
C304.1	Apply the concept of static load, theories of failure and stress concentration.
C304.2	Illustrate the concept of Impact load and Fatigue.
C304.3	Describe the various loads on the Aircraft and interpret the load Factor for various flight conditions.
C304.4	Use equilibrium and compatibility conditions in calculation of stress and strain of elastic material.
C304.5	Apply different Strain energy methods related to aircraft structural components.

Table 3.1.1.6 Course Outcomes of Design of Unmanned Aerial Vehicles (Sixth Semester) (2019-20)

Course	Course Outcomes
C315.1	Explain the basic classifications and functioning of UAV systems
C315.2	Apply the basic aerodynamics, performance required for UAV
C315.3	Illustrate the stability and control aspects at various flight condition
C315.4	Select the proper propulsion system and materials for UAV
C315.5	Design and Plan the Mission and Control of UAV by selecting proper payloads

Table 3.1.1.7 Course Outcomes of Computational Fluid Dynamics (Seventh Semester) (2020-21)

Course	Course Outcomes
C402.1	Describe the basics of CFD and parallel computing and explain the various flow models, its governing equations of fluid motion in differential and integral form.
C402.2	Compare the physics of the flow with the mathematical behaviour of partial differential equations.
C402.3	Identify and compute the suitable grid generation and transformation techniques for a given problem.
C402.4	Illustrate the fundamentals of discretization in FVM, FDM and FEM techniques.
C402.5	Interpret different schemes and their stability in simple CFD applications

Table 3.1.1.8 Course Outcomes of Flight Vehicle Design (Eighth Semester) (2020-21)

Course	Course Outcomes
C411.1	Estimate the overall weight and the effect of wing loading of an aircraft for different flight regimes.
C411.2	Design a structure of fuselage, suitable wing tail arrangement for a given aircraft.
C411.3	Predict the suitable propulsion system and sub-systems for a given aircraft
C411.4	Calculate the stability characteristics and size of the control surfaces for an aircraft.

3.1.2a (A) CO-PO matrices of courses selected in 3.1.1 (six matrices to be mentioned; one per semester from 3rd to 8th semester) (05)

The following six tables B3.1.2.1 to B3.1.2.6 list the CO-PO correlation of courses selected in 3.1.1, one course per semester from 3rd to 8th semesters for the batch 2017-21 (CAY)

Table B 3.1.2.1: COs-POs matrix of Mechanics of Fluid – C205 (Third Semester) (2018-19)

C205	MECHANICS OF FLUID											
CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
C205.1	3	3	2	1	-	-	-	-	-	-	-	2
C205.2	3	3	2	1	-	-	-	-	-	-	-	2
C205.3	3	3	2	1	-	-	-	-	-	-	-	2
C205.4	3	3	2	1	-	-	-	-	-	-	-	2
C205.6	3	3	2	1	-	-	-	-	-	-	-	2
Average	3	3	2	1	-	-	-	-	-	-	-	2

Table B 3.1.2.2: COs-POs matrix of Aerodynamics I-C211 (Fourth Semester) (2018-19)

C211	AERODYNAMICS I											
CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
C211.1	3	3	3	1	-	-	-	-	-	-	-	1
C211.2	3	3	3	2	-	-	-	-	-	-	-	1
C211.3	3	3	3	2	-	-	-	-	-	-	-	3
C211.4	3	3	3	2	-	-	-	-	-	-	-	3
C211.5	3	3	3	2	-	-	-	-	-	-	-	3
Average	3	3	3	1.80	-	-	-	-	-	-	-	2.20

Table B 3.1.2.3: COs-POs matrix of Aircraft Structures I-C304 (Fifth Semester) (2019-20)

C304	AIRCRAFT STRUCTURES I											
CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
C304.1	3	3	3	2	-	-	-	-	2	-	-	1
C304.2	3	3	3	2	-	-	-	-	2	-	-	1
C304.3	3	3	3	2	-	-	-	-	2	-	-	1
C304.4	3	3	3	2	-	-	-	-	2	-	-	1
C304.5	3	3	3	2	-	-	-	-	2	-	-	1
Average	3	3	3	2					2	-	-	1

Table B 3.1.2.4: COs-POs matrix of Unmanned Aerial Vehicles (Sixth Semester) (2019-20)

C315	UNMANNED AERIAL VEHICLES											
CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
C315.1	3	3	3	-	-	-	-	-	2	-	-	1
C315.2	3	3	3	-	-	-	-	-	2	-	-	1
C315.3	3	3	3	-	-	-	-	-	2	-	-	1
C315.4	3	3	3	-	-	-	-	-	2	-	-	1
C315.5	3	3	3	-	-	-	-	-	2	-	-	1
Average	3	3	3	-	-	-	-	-	2	-	-	1

Table B 3.1.2a.5: COs-POs matrix of Computational Fluid Dynamics -C402 (Seventh Semester) (2020-21)

C402	Computational Fluid Dynamics											
CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
C402.1	3	3	2	2	2	1	-	2	2	1	1	3
C402.2	3	3	3	3	2	1	-	2	2	1	1	3
C402.3	3	3	2	1	2	1	-	2	2	1	1	3
C402.4	3	3	3	3	2	1	-	2	2	1	1	3
C402.5	3	3	3	3	2	1	-	2	2	1	1	3
Average	3	3	2.60	2.40	2	1	-	2	2	1	1	3

Table B 3.1.2a.6: COs-POs matrix of Flight Vehicle Design -C411 (Eighth Semester) (2020-21)

C411	Flight Vehicle Design											
CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	P09	PO10	PO11	PO12
C411.1	3	3	3	2	-	-	-	1	1	2	1	1
C411.2	3	3	3	3	-	-	-	1	1	2	1	1
C411.3	3	3	3	3	-	-	-	1	1	2	1	1
C411.4	3	3	3	3	-	-	-	1	1	2	1	1
Average	3	3	3	2.75	-	-	-	1	1	2	1	1

Note:
1. Enter correlation levels 1, 2 or 3 as defined below:
1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)
If there is no correlation, put "-"
2. Similar table is to be prepared for PSOs

3.1.2b (A):CO-PSO matrices of courses selected in 3.1.1 (six matrices to be mentioned; one per semester from 3rd to 8th semester)

The following six tables B3.1.2.7 to B3.1.2.12 list the CO-PSO correlation of courses selected in 3.1.1, one course per semester from 3rd to 8th semesters for the batch 2017-21 (CAY)

Table B 3.1.2.7: COs-POs matrix of Mechanics of Fluid -C205 (Third Semester) (2018-19)

C205	Mechanics of Fluid	
CO/PO	PSO1	PSO2
C205.1	3	1
C205.2	3	1
C205.3	3	1
C205.4	3	1
C205.6	3	1
Average	**3**	**1**

Table B 3.1.2.8: COs-POs matrix of Aerodynamics I-C211 (Fourth Semester) (2018-19)

C211	Aerodynamics I	
CO/PO	PSO1	PSO2
C211.1	1	1
C211.2	1	1
C211.3	1	1
C211.4	1	1
C211.5	1	1
Average	**1**	**1**

Table B 3.1.2.9: COs-POs matrix of Aircraft Structures I-C304 (Fifth Semester) (2019-20)

C304	Aircraft Structures I	
CO/PO	PSO1	PSO2
C304.1	1	1
C304.2	1	1
C304.3	1	1
C304.4	1	1
C304.5	1	1
Average	**1**	**1**

Table B 3.1.2.10: COs-POs matrix of Unmanned Aerial Vehicles – C315 (Sixth Semester) (2019-20)

C315	Unmanned Aerial Vehicles	
CO/PO	PSO1	PSO2
C315.1	3	3
C315.2	3	3
C315.3	3	3
C315.4	3	3
C315.5	3	3
Average	**3**	**3**

Table B 3.1.2.11: COs-POs matrix of Computational Fluid Dynamics -C402 (Seventh Semester) (2020-21)

C402	Computational Fluid Dynamics	
CO/PO	PSO1	PSO2
C402.1	2	3
C402.2	2	2
C402.3	3	2
C402.4	2	2
C402.5	2	2
Average	**2.20**	**2.20**

Table B 3.1.2.12: COs-POs matrix of Flight Vehicle Design-C411 (Eighth Semester) (2020-21)

C411	Flight Vehicle Design	
CO/PO	**PSO1**	**PSO2**
C411.1	3	2
C411.2	3	2
C411.3	3	2
C411.4	3	2
Average	**3**	**2**

3.1.3 (A) Program level Course-PO matrix of all courses INCLUDING first year courses (10)

The following table B.3.1.3.1 lists the program level Course-PO matrix of all courses including first year courses.

Table B3.1.3.1 CO-PO Planned matrix

Courses	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
I SEMESTER												
C101-Engineering Mathematics-I	2.25	2	2.33	1	1	-	-	-	-	-	-	-
102-Engineering Physics	2.28	2.15	1.84	-	-	-	-	-	-	-	-	-
C103-Elements of Civil Engineering and Mechanics	2	2.33	3	-	-	-	-	-	-	-	-	1
C104-Elements of Mechanical Engineering	3	1.67	-	-	-	-	-	-	-	-	-	-
C105-Basic Electrical Engineering	2.29	2.09	2.02	-	-	-	-	-	-	-	-	-
C106-Workshop Practice	3	2	-	-	-	-	-	2	2	-	-	1
C107-Physics Lab	3	2	1	-	-	-	-	-	-	-	-	-
II SEMESTER												
C108-Engineering Mathematics-II	2.4	2	2.25	1	1.5	-	-	-	-	-	-	-
C109-Engineering Chemistry	3	2.6	1	-	-	-	-	-	-	-	-	-
C110-Programming in C And Data Structures	2.4	2.4	2.4	2	-	-	-	-	-	-	-	1.6
C111-Computer Aided Engineering Drawing	3	2	2	1	-	-	-	2	2	-	-	-

C112-Basic Electronics	2.66	2.25	1.93	-	-	-	-	-	-	-	-	-
C113-CCP Lab	2	2	2	1	2	-	-	-	-	-	-	2
C114-Engineering Chemistry Lab	3	2	2	-	-	-	-	-	-	-	-	-
C115-Environmental Studies	1.33	2.5	1	2	-	1	3	-	-	-	-	-
III SEMESTER												
C201 –Engineering Mathematics III	2.2	2	2.33	1.4	1.66	-	-	-	-	-	-	-
C202 - Elements of Aeronautics	2.8	2	1	-	-	-	-	-	2	2	-	2
C203 - Aero Thermodynamics	3	3	3	1.8	-	-	-	-	3	-	-	1
C204 - Mechanics of Materials	2.5	1.67	1.5	1.33	0.83	-	-	-	-	-	-	-
C205 - Mechanics Of Fluids	3	3	2	1	-	-	-	-	-	-	-	2
C206 - Measurement & Metrology	3	-	-	-	-	2	1.33	2.33	3	3	-	1
C207-Material Testing Lab	1.5	-	-	-	-	1	0.67	1.17	1.5	1.5	-	0.5
C208-Machine Shop Lab	2	-	-	-	-	2	1	2	3	3	-	1
IV SEMESTER												
C209-Engineering Mathematics-Iv	2.4	1.8	1.67	1.5	1.67	-	-	-	-	-	-	-
C210-Aerodynamics -I	3	3	3	2	-	-	-	-	-	-	-	2.2
C211-Aircraft Propulsion	3	2.25	1	1	-	1	2	1	2	2	1	3
C212-Mechanisms and Machine Theory	2.6	2.4	2.6	2.5	-	-	-	-	3	3	-	-
C213-Aircraft Material Science	3	-	-	-	-	-	-	-	2	2	-	2
C214-Turbomachines	2.80	2.80	2.60	2.67	-	-	-	2.00	2.00	-	-	1.00
C215-Measurement & Metrology Lab	3	1	1	-	-	1	1	-	3	3	-	-
C217-Computer Aided Aircraft Drawing	3	3	3	3	3	-	-	-	-	-	-	1
V SEMESTER												
C301-Management & Entrepreneurship	1	1	-	-	-	2	2	1.2	3	1	0.4	1
C302-Introduction to Composite Materials	3	2	3	-	-	-	-	-	2	2	-	2

C303-Heat and Mass Transfer	2	2	2	2	-	-	-	-	3	3	3	3
C304-Aircraft Structure-I	3	3	3	3	-	-	-	-	-	-	-	2
C305-Theory of Vibrations	3	3	3	1.4	-	-	-	-	-	-	-	3
C306-Basics of Rockets & Missiles	1.8	1.8	2	2	-	-	-	-	3	-	-	1
C307-Aerodynamics Lab	3	2.83	2	1.75	1.8	1	1	1	3	2	1	2
C308-Energy Conversion & Fluid Mechanics Lab	3	2	-	2	-	-	-	-	3	3	-	2
VI SEMESTER												
C309-Aerodynamics-II	3	2.4	2.4	1.67	-	-	-	-	-	-	-	1.4
C310-Gas Turbine Technology	2	2	2	2	-	-	-	-	3	3	3	3
C311-Aircraft Performance	3	3	3	-	-	-	-	-	3	2	-	1
C312-Aircraft Structures-II	3	3	3	1.8	-	-	-	-	3	-	-	1
C313-Space Mechanics	2.5	3	2.33	2	-	-	-	-	3	3	-	1
C314-Finite Element Method	3	2	2	-	-	-	-	-	-	-	-	3
C315-Unmanned Aerial Vehicles Basics &	3	2	2	-	-	-	-	-	-	-	-	3
C316-Aircraft Propulsion Lab	3	2.3	1.5	1.3		1.2	1.25		3	2	-	1.5
C317-Aircraft Structures Lab	2	1	1	-	2	-	-	-	2	2	-	2
VII SEMESTER												
C401-Control Engineering	2.6	2.2	2	2	-	-	-	-	2	-	-	-
C402-Computational Fluid Dynamics	3	3	1.4	2.4	-	-	-	-	2	2	-	1
C403-Aircraft Stability and Control	3	3	1.4	-	-	-	-	-	2	2	-	
C404-Helicopter Dynamics	3	3	2	-	-	-	-	-	-	-	-	1
C405-Guidance, Navigation & Control	1.75	1.75	1.75	-	-	-	-	-	2	1	-	1
C406-Modelling and Analysis Lab	3	3	3	3	3	-	-	-	2	-	-	1
C407- Flight Simulation Lab	3	3	3	2	3	-	-	-	3	2	-	1

C408-Project Phase –I	3	2.67	3	-	-	-	-	-	3	2.33	-	2
VIII SEMESTER												
C409-Avionics	1.25	1.25	-	-	-	-	-	-	3	3	-	1
C410-Flight Vehicle Design	3	3	3	2.75	-	-	-	1	1	2	1	1
C411- Flight Testing	3	3	2	-	-	-	-	-	2	2	-	-
C412-Professional Practice /Internship	3	3	2	1	-	2	2	2.6	3	2.75	1	2
C413- Project Work	3	2.67	3	-	-	-	-	3	2.67	2.67	-	2
C414- Seminar	2	2	2	-	-	-	-	-	-	0.75	-	-
Average value	**2.64**	**2.35**	**2.09**	**1.84**	**2.05**	**1.4**	**1.53**	**1.78**	**2.49**	**2.23**	**1.49**	**1.65**

Note:
1. Enter correlation levels 1, 2 or 3 as defined below:
1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)
If there is no correlation, put "-"
It may be noted that contents of Table 3.1.2 must be consistent with information available in Table 3.1.3 for all the courses.
2. Similar table is to be prepared for PSOs

The following table B3.1.3.2 lists the program level CO-PSO matrix of all courses including first year courses.

COs-PSOs Matrix of all Courses Including First Year Courses:

Table B3.1.3.2 Cos-PSOs Planned Matrix

Courses	PSO1	PSO2
I SEMESTER		
C101-Engineering Mathematics-I	1	1
C102-Engineering Physics	2	1
C103-Elements of Civil Engineering and Mechanics	3	1
C104-Elements of Mechanical Engineering	3	1
C105-Basic Electrical Engineering	3	1
C106-Workshop Practice	2	1
C107-Physics Lab	3	1
II SEMESTER		
C108-Engineering Mathematics-II	2	1
C109-Engineering Chemistry	1	1
C110-Programming in C And Data Structures	1	-
C111-Computer Aided Engineering Drawing	3	1
C112-Basic Electronics	2	1

C113-CCP Lab	1	1
C114-Engineering Chemistry Lab	2	-
C115-Environmental Studies	0	-
III SEMESTER		
C201 –Engineering Mathematics III	2	1
C202 - Elements of Aeronautics	1	1
C203 - Aero Thermodynamics	1	-
C204 - Mechanics of Materials	2	1
C205 - Mechanics of Fluids	3	1
C206 - Measurement & Metrology	2.33	-
C207-Material Testing Lab	1.17	-
C208-Machine Shop Lab	1	-
IV SEMESTER		
C209-Engineering Mathematics-Iv	2	1
C210-Aerodynamics -I	1	1
C211-Aircraft Propulsion	1.6	1
C212-Mechanisms and Machine Theory	3	-
C213-Aircraft Material Science	1	1
C214-Turbomachines	2	1
C215-Measurement & Metrology Lab	1	1
C21-Computer Aided Aircraft Drawing	1	0
V SEMESTER		
C301-Management & Entrepreneurship	1	1
C302-Introduction to Composite Materials	1	1
C303-Heat and Mass Transfer	3	2.5
C304-Aircraft Structure-I	2	0
C305-Theory of Vibrations	1	0
C306-Basics of Rockets & Missiles	1	1
C307-Aerodynamics Lab	2	2
C308-Energy Conversion & Fluid Mechanics Lab	2	1
VI SEMESTER		
C309-Aerodynamics-II	1	1
C310-Gas Turbine Technology	3	2.5
C311-Aircraft Performance	3	2
C312-Aircraft Structures-II	1	1
C313-Space Mechanics	1.75	1.25

C314-Finite Element Method	0	0
C315-Unmanned Aerial Vehicles Basics & Applications	3	3
C316-Aircraft Propulsion Lab	2	1
C317-Aircraft Structures Lab	2	2.6
VII SEMESTER		
C401-Control Engineering	1.25	0
C402-Computational Fluid Dynamics	3	1
C403-Aircraft Stability and Control	2	1.2
C404-Helicopter Dynamics	1	1
C405-Guidance, Navigation & Control	1	1
C406-Modelling and Analysis Lab	1	0
C407- Flight Simulation Lab	2	2
C408-Project Phase –I	1.67	1.67
VIII SEMESTER		
C409-Avionics	2.25	1.5
C410-Flight Vehicle Design	3	2
C411- Flight Testing	2	2
C412-Professional Practice/Internship	1.25	1.25
C413- Project Work	1	1
C414- Seminar	1	1
AVERAGE VALUES	**1.75**	**1.24**

3.2. Attainment of Course Outcomes (50)

3.2.1. Describe the assessment processes used to gather the data upon which the evaluation of Course Outcome is based (10)

The Curriculum, Scheme and Syllabus (Subject wise) is prepared and provided by the Board of Studies, Visvesvaraya Technological University. All course outcomes are developed using Bloom's taxonomy and consequently assignments, continuous internal evaluation tests, quizzes, practical laboratory continuous assessments, mini projects, seminars, and projects are aligned to Course Outcomes addressing same level of Bloom's taxonomy.

The various types of assessment tools followed are presented in table below. This describes the mode of assessment adopted to measure the students' performance using direct assessment and indirect assessment methods.

Table B.3.2.1: Assessment Tools for Course Outcomes Evaluation

DIRECT ASSESSMENT TOOLS			
Sl. No.	**Assessment process**	**Description**	**Frequency**
1	**(CIE) Internal Assessment (IA)**	2015 scheme – 20 marks (15 marks CIE + 5 marks Assignment) 2017 scheme – 40 marks (30 marks CIE +10 marks Assignment)	Three times in a semester
2	**(CIE) Lab Internals & Record**	2015 scheme – 20 marks (12 marks lab record + 8 marks CIE) 2017 scheme – 40 marks (24 marks lab record + 16 marks CIE)	(1) Lab Record-Weekly (2) Lab Internal-Once per sem (End of each semester)
3	**Semester End Exam (SEE)**	2015 scheme: 80 Marks 2017 scheme: 60 Marks	Semester End Exam
4	**Project work**	Students are required to register for the project as a group. Phase wise conduction as per calendar of events will be scheduled. **University exam will be conducted for 100 marks at the end of 8th semester**	(1) Two phases in each semester (2) Once (Semester End University Exam will be conducted)
5	**Technical Seminar**	Technical semester will be evaluated at the end of 8thsemester, individual student for 100 Marks	Once (Semester End internal evaluation)
6	**Internship Program**	Students are assigned to complete internship program in association with industries and evaluated for 50 marks as internal assessment. University exam will be executed for 50 marks at the end of 8th semester	Once (Semester End Evaluation)
INDIRECT ASSESSMENT TOOLS			
7	**Course End Survey**	Quality of the course contents & delivery is assessed through student feedback mapped with COs which aids in improving teaching learning process	Once Per Semester (End of each semester)
8	**Program Exit survey**	Quality of curriculum and infrastructure will be assessed through student feed back	(End of the program)

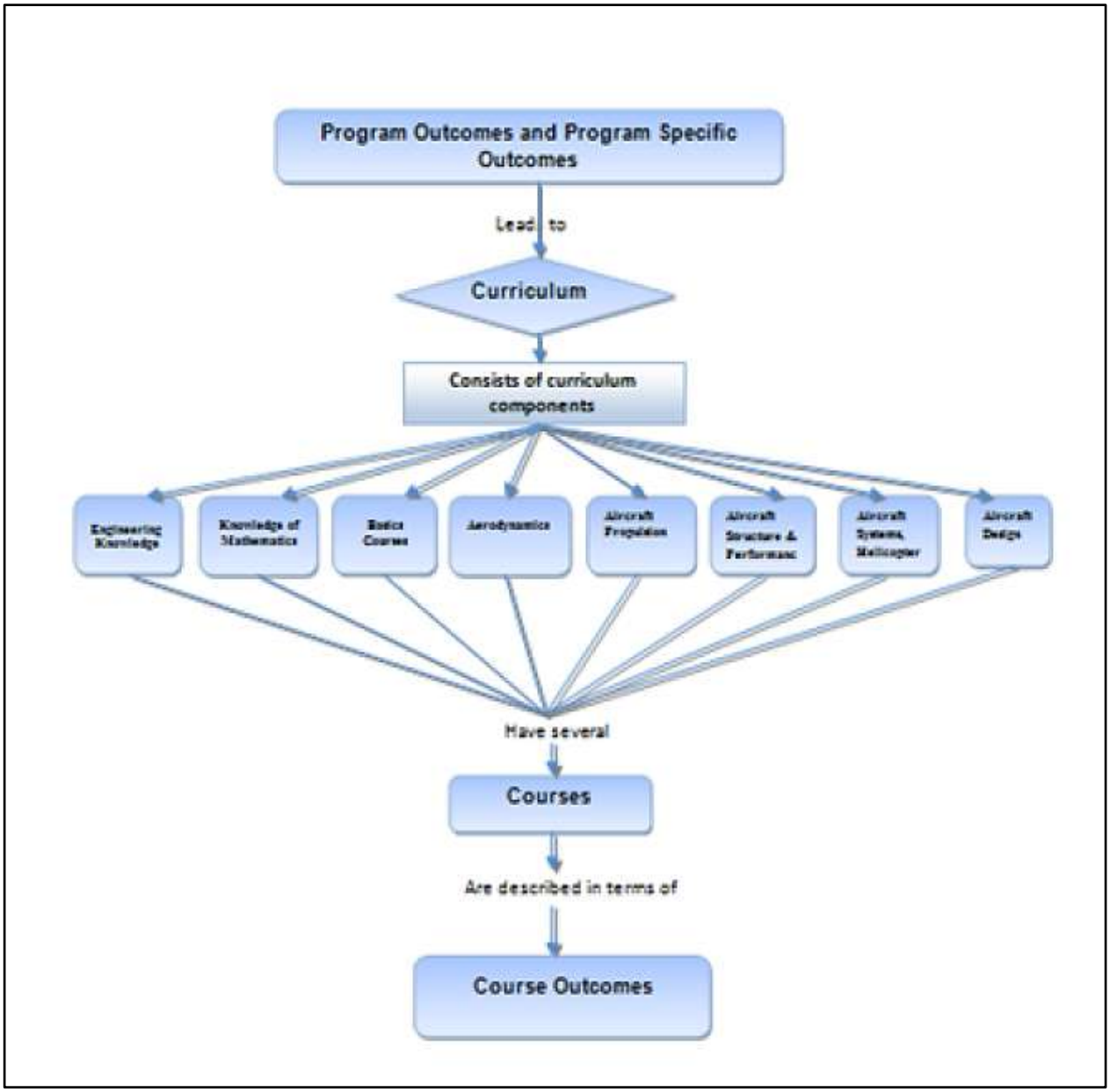


Figure 3.2.1a: Assessment process for Course Outcomes Evaluation

Direct method (2017 scheme)

The components used for direct assessment method are Internal Assessment (IA) and Semester End Examination (SEE) with a weight age of 40% and 60% respectively. IA assessment for theory courses is based on marks scored by a student in Tests, Assignment. The curriculum also includes courses such as Projects and Technical seminar.

Direct method (2015 scheme)

The components used for direct assessment method are Internal Assessment (IA) and Semester End Examination (SEE) with a weight age of 20% and 80% respectively. IA

assessment for theory courses is based on marks scored by a student in Tests, Assignment. The curriculum also includes courses such as Projects and Technical seminar.

CO Attainment through IA

Course Outcome (CO) attainment illustrates the performance of a student in a particular course. CO attainment is calculated based on students score in each assessment tools.

Course Achievable Matrix

The course outcomes for every course are defined based on the Bloom's taxonomy learning levels. The course achievable matrix is derived from the course content. The course coordinator ensures the distribution of COs in each question paper which will be further verified by Program Coordinator.

Test (IA)

CO attainment is calculated by considering the marks of each question in the question paper for all the three tests. Each question in test question papers is mapped with COs Through this mapping we get the student score for each CO.

Laboratory

- Laboratory in-charge faculty members follow rubrics, which is set by the department for evaluation of laboratory experiments.
- Laboratory experiments are conducted with assessment based on rubrics metric as given in table B3.2.1.1. For every experiment, procedure has to be written, executed and demonstrated to the lab in charges. The demonstration of the output is followed by oral viva-voce.
- Laboratory tests evaluation is as discussed in criteria 2.2.1.6

Table B3.2.1.1a: Rubrics for Laboratory work Continuous Internal Evaluation Assessment

Rubric	Methodology / Process Steps	2015	2017
a	Observation, Write up and Punctuality	**2**	**4**
b	Conduction of experiment and Output	**4**	**8**
c	Viva – Voce (Questions & Answers on relevant Experiment / Topic)	**2**	**4**
d	Record write-up	**4**	**8**
CIE	Internal Test (i)Write-up of Procedure: (ii)Conduction: (iii)Viva-Voce:	 **2** **4** **2**	 **4** **8** **4**
Total Marks		**20**	**40**

Technical Seminar Evaluation:

- The seminar on technical topics with report and presentation is a part of the curriculum for every individual student. The Department selects a senior faculty member as a Seminar coordinator who along with other faculty would assess the technical seminar presentations by students. He/She would ensure that the students choose advanced concepts in Civil Engineering and allied research areas with a lot of relevance and applicability.
- One seminar per student in the VIII semester is conducted as per the schedule.
- Seminar coordinators follow rubrics, which is set by the department for evaluation of seminar

Table B3.2.1.2: Seminar Assessment Rubrics

Rubric	Methodology / Process Steps	Marks (100)
a	Relevance and Understanding of the topic	**15**
b	Literature Survey and Observation	**15**
c	Report Content	**30**
d	Presentation with Explanation	**30**
e	Q & A	**10**

Major Project

The students carry out Project works, in teams during final year of the program. They are required to identify, formulate, review research literature and analyse complex engineering problems. The students are also required to design solutions using appropriate modern engineering and IT tools with considerations for public health and safety, cultural, societal and environmental aspects.

Table B3.2.1.3 Phase – I (Review – I): Preliminary Project Evaluation

Rubric	Methodology / Process Steps	Marks (40)
a	Literature Review	**10**
b	Problem identification and definition	**10**
c	Significance and relevance of work	**05**
d	Presentation and Report	**15**

Table B3.2.1.4 Phase – I (Review – II): Project Synopsis and Project Seminar Evaluation

Rubric	Methodology / Process Steps	Marks (60)
a	Objectives and methodology of project	**10**
b	Plan of execution	**05**
c	Project Seminar	**20**
d	Project Synopsis report	**25**

Table B3.2.1.5 Phase – II (Review – I): Project Intermediate Evaluation

Rubric	Methodology / Process Steps	Marks (40)
a	Plan of execution	**05**
b	Progress of work	**10**
c	Implementation/Results	**05**
d	Presentation and Report	**20**

Table B3.2.1.6 Phase – II (Review – II): Project End Evaluation

Rubric	Methodology / Process Steps	Marks (60)
a	Demonstration	**10**
b	Project Presentation	**10**
c	Results, discussions and conclusion	**15**
d	Final project report	**25**

CO Attainment through SEE

CO attainment through SEE will be derived from the Marks scored by the students in the university examination in that particular course.

Indirect method

Indirect method includes course end survey for particular course in a semester. Feedback will be collected at the end of every course and are mapped to Cos. All these components contribute to 10% of CO attainment.

3.2.2 Record the attainment of Course Outcomes of all courses with respect to set attainment levels (40)

- **Process for the CO attainment:** Course Outcome for a course identifies the knowledge and skills gained by the students upon completion of the course. Course attainment is a measure of the course outcomes acquired by the students. The COs is discreetly defined based on the Syllabus of each course.

- **Expected Attainment:** The expected attainment level is the threshold of attainment, which the student has to gain after completion of each course. The expected attainment levels for each course are set based on the previous attainment level for that course or based on class average marks. The students are required to achieve the expected CO attainment level which facilitates the CO attainment of that particular course. If the attainment of the course is not meeting the target level, course coordinators retrospect the reason and recommend for modification of course curriculum or the delivery/assessment method, to improve the CO levels. If the course is introduced for the first time the target level is set based on the inputs from faculty expertise in that course.

- **Course Outcome Attainment:** The process of CO attainment, based on direct and indirect methods is as depicted in Figure below. The CO of every course is mapped with PO as defined by NBA. Question papers of CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) are mapped with CO to arrive at individual CO weightage. CO attainment of each student is calculated based on CIE, SEE, laboratory, assignment and self-study performance. The CO attainment of students is averaged to obtain target attainment levels.

Table B.3.2.2.1: Assessment Targets for Course Outcomes Evaluation (2017-2021 Batch) (CAY)

Batch: 2017 – 2021				
Sl. No.	**Assessment Method**	**Maximum Marks**	**Course Outcome Target**	
			Percentage	**Marks**
1	Internal Assessment Test (IA) CIE	40	60%	24
2	Semester End Examinations (SEE)	60	40%	24
3	Lab Assessment (Internal)	16	70%	12
4	Practical Examinations	60	60%	36
5	Seminar	100	70%	70
6	Project Work Evaluation (Phase-I and Phase-II)	200	70%	140
7	Project Work Evaluation and viva voce (External)	100	60%	60
8	Internship Evaluation (Internal)	50	60%	30
9	Internship Evaluation (External)	50	60%	30

Set attainment level for above Course Outcomes targets are:

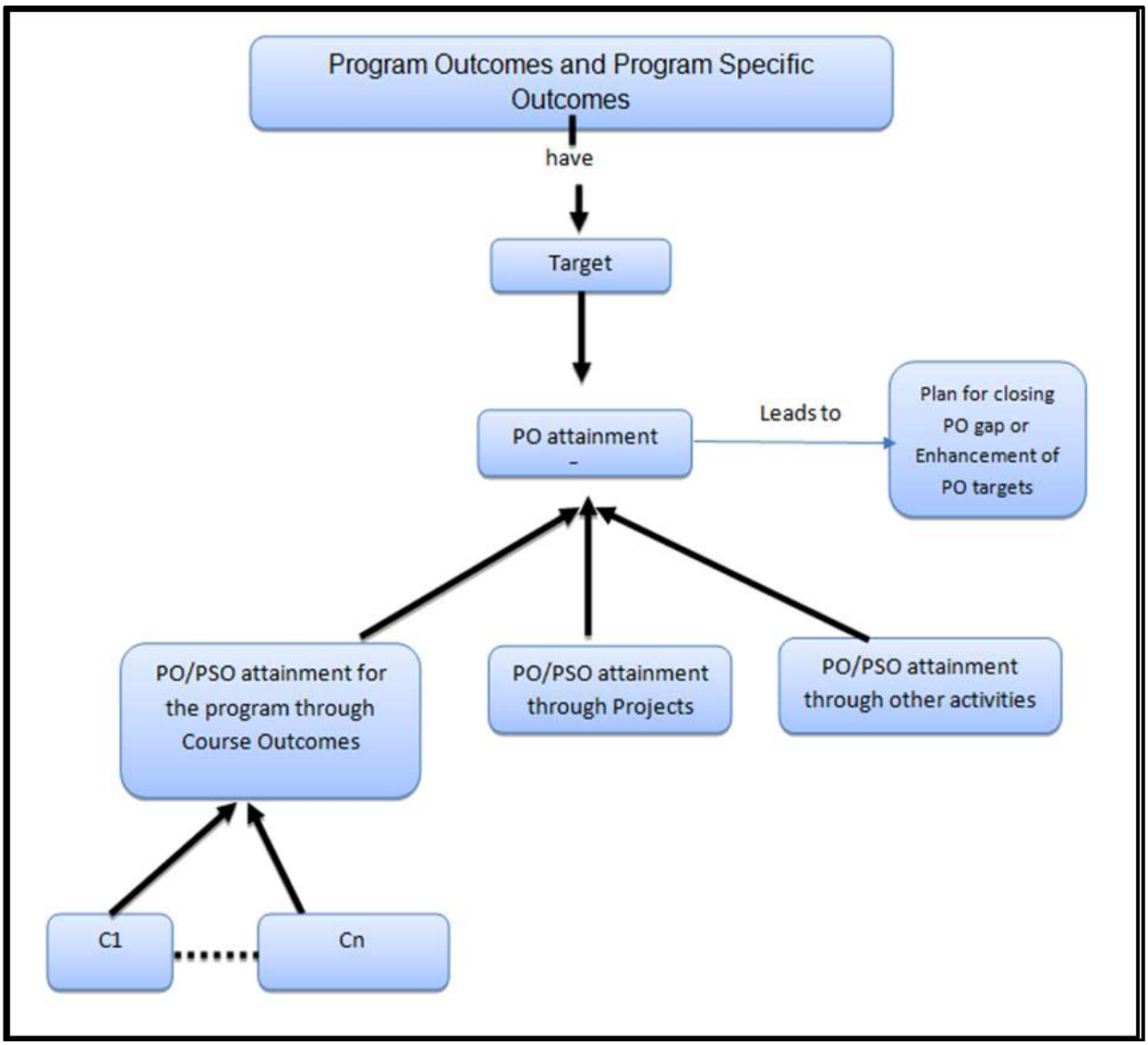
Attainment Level 1: 45% students scoring more than set target level in the final examination.
Attainment Level 2: 55% students scoring more than set target level in the final examination.
Attainment Level 3: 65% students scoring more than set target level in the final examination.

Table B3.2.2.2 Indirect Assessment Methods

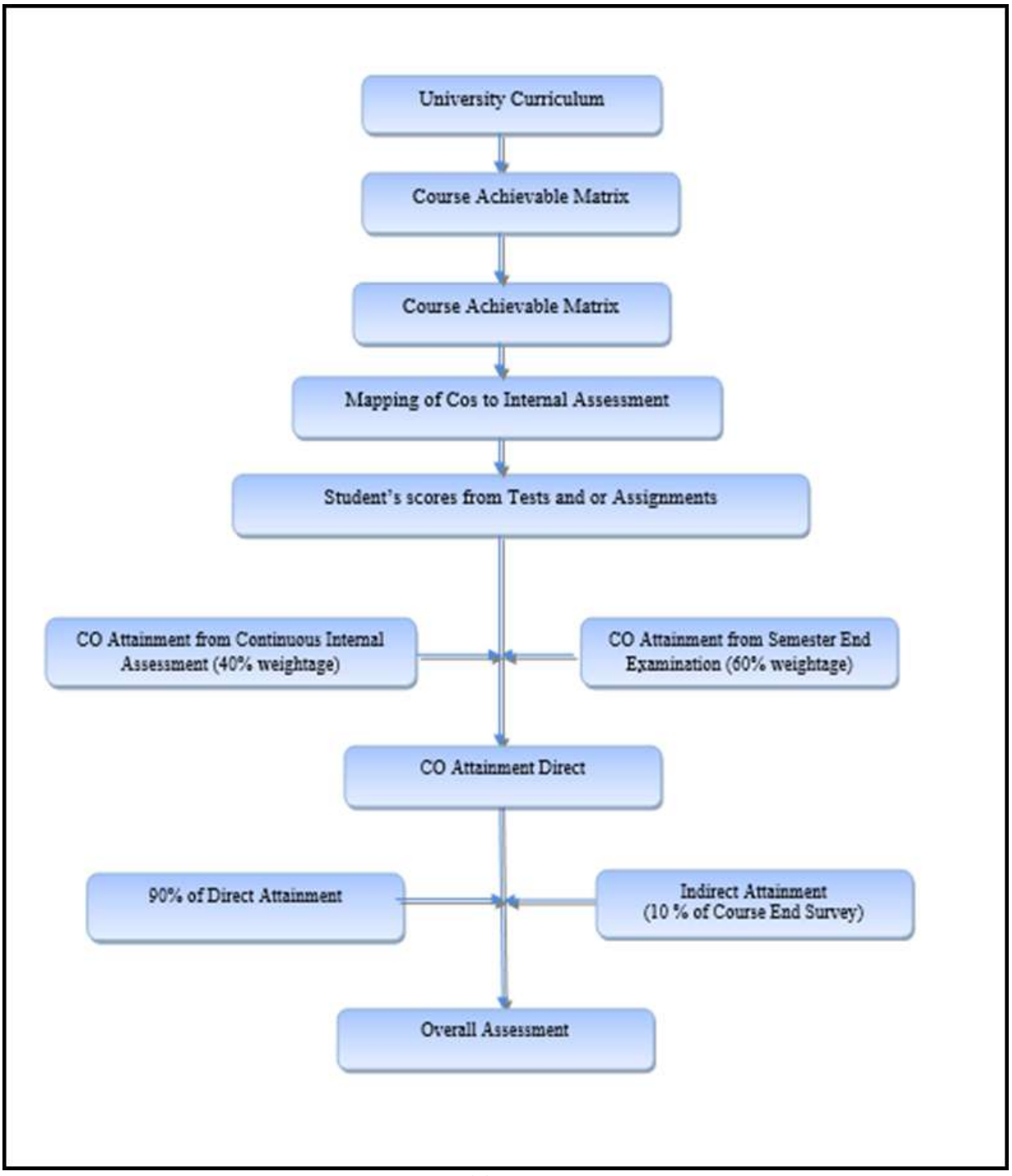
Sl. No.	Survey Type	Methodology	Frequency
1	Course End Survey	Online Survey – DHI Software Google forms	After end of the course /Semester
2	Program/Graduate Exit Survey	Online Survey – DHI Software Survey forms – Hard copy	After end of the Graduation Programme
3	Alumni Survey	Online Survey –Google Forms	After 1 – 2 years of Graduating batch & every year thereon
4	Employer Survey	Online Survey –Google Forms	After 2 – 3 years of Graduation

C. Model / Tool used for assessment of CO, PO and PSO:

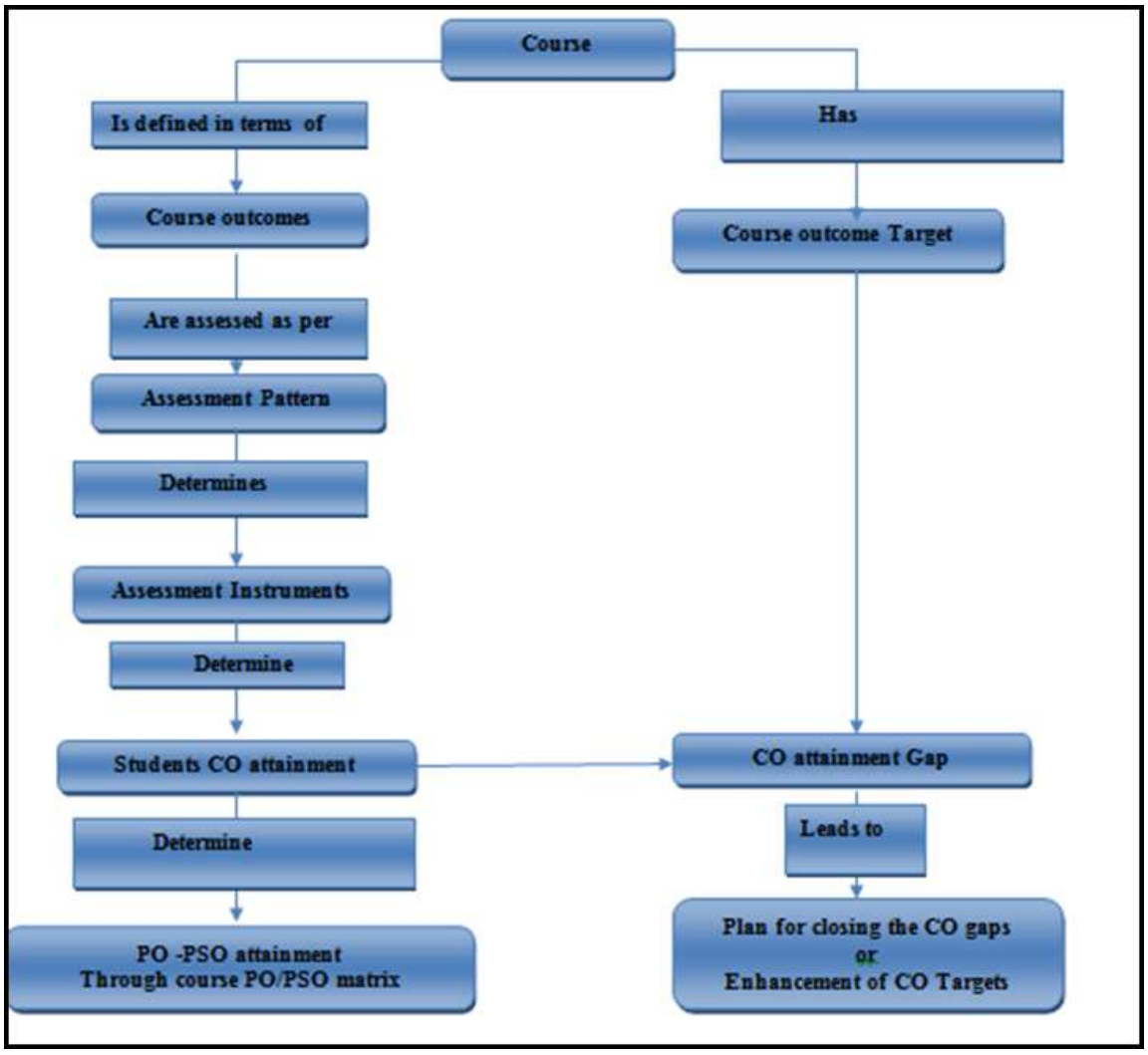
The assessment tool for the assessment of Course Outcomes (COs), Program Outcomes (POs) and the Program Specific Outcomes (PSOs) has been designed and developed based on the inputs from the coordinators from different departments, all the heads of the department and the Principal follow the basic steps as described in figure 3.2.2.1 a, b & c diagrams.


Program Outcomes and Program Specific Outcomes
have
Target
PO attainment
Leads to
Plan for closing PO gap or Enhancement of PO targets
PO/PSO attainment for the program through Course Outcomes
PO/PSO attainment through Projects
PO/PSO attainment through other activities
C1
Cn

(a)


University Curriculum
Course Achievable Matrix
Course Achievable Matrix
Mapping of Cos to Internal Assessment
Student's scores from Tests and or Assignments
CO Attainment from Continuous Internal Assessment (40% weightage)
CO Attainment from Semester End Examination (60% weightage)
CO Attainment Direct
90% of Direct Attainment
Indirect Attainment (10 % of Course End Survey)
Overall Assessment

(b)



(C)

Figure 3.2.1.2a, b & c: PO-PSO Attainment through CO Attainment

The steps followed for calculating the attainment of COs, POs and PSOs are described below:

- The COs for every course is framed by the course coordinator and the concerned faculty. A maximum of six COs is considered for every course.
- The COs are mapped with the POs and PSOs for every individual course based on the three different correlation levels to form the initial CO – PO and CO – PSO correlation matrices and the levels considered are:

1. Slightly – 1 (Low)
2. Moderately – 2 (Medium)
3. Substantially – 3 (High)
4. No correlation -

- The average COs for POs and PSOs is calculated and these obtained values are considered as the base values/target values.
- The target for processing the attainment of the students‟ performance is formulated as shown in table B3.2.2a.
- The attainment of course outcomes are calculated as a ratio of the students‟ score with the maximum marks of the questions attempted. The percentage is calculated for every individual student for all COs. The target set for the CIE is 60%. Those students who cross 60% are counted and total number attempted for a particular CO is taken as ratio with the total number of students attempted only. Thus, the percentage attainment of the particular CO is obtained. In similar way, other COs percentage attainments are obtained. The above formulation is considered for the 2010 – scheme (non – CBCS scheme) of curriculum.
- For CBCS scheme (2015 onwards) of curriculum, along with the above assessment, two more components such as quiz and assignments are added in the attainment calculation. The threshold value of 60% remains same for these components. Those students‟ marks that satisfy the threshold value for quiz and assignment components are tabulated against each CO.
- The SEE marks are obtained from the university results for all the courses. The target threshold for SEE is set as 50%. This value is taken as common value across all the courses, as the average of university results, may not be available. Here, all COs are given with same weightage. The percentage scored by the individual student is counted which satisfies the threshold value and the ratio of the total count with the number of students attempted the examination is calculated. This computed value is considered as the SEE attainment of the course.
- In table B3.2.2a, the methods describing the recording of attainment are given.
- The weightage considered for CIE with respect to 2010 – scheme (non – CBCS) is 100% for internal tests and for 2015 – scheme (CBCS) is 75% from internal tests score and 25% from quiz and assignments score.
- The weightage for overall COs attainment is 80% of SEE attainment and 20% of CIE attainment and the recorded attainment of course outcomes of all courses are shown in table B3.2.2b.

- The final CO attainment is calculated based on the overall attainment from CIE, SEE and Course Exit Survey (CES). The CES are obtained from the students after end of each course. The final CO attainment is calculated by considering 90% of overall attainment, i.e., from 80% SEE + 20% CIE and 10% of CES.
- The obtained final CO attainment is compared with the target set in the initial correlation matrix and the gap analysis is done for individual courses. The action is planned for the next academic year for the gaps, if any, and the cycle continues.
- In case of PO and PSO attainment calculations, the final attainment of the COs is considered and multiplied with the set levels in the correlation matrices. The average obtained from all POs and PSOs are calculated as the final PO and PSO attainment at the course levels.
- The average of POs and PSOs values from all the courses of the programme are considered for overall POs and PSOs attainment calculation. The average of averages obtained from individual course is calculated. The obtained average attainment values of POs and PSOs are considered as the direct attainment values.
- Further, the indirect attainment of the POs and PSOs are calculated by taking the feedback in the form of surveys like Program Exit Survey (PES), Alumni Survey, Employer Survey, etc. The survey is formulated in the similar lines of POs and PSOs with same levels of substantial – 3, moderate – 2 and slight – 1. The average of the data populated from different stakeholders is calculated and considered as the indirect attainment values.
- For the final attainment values of POs and PSOs, 90% of direct attainment and 10% of indirect attainment is considered.
- The finally computed POs and PSOs attainment values are subtracted from average value of individual subjects POs and PSOs which are in turn is averaged over all the 8 semester subjects from the correlation matrices of the all courses. Thus, the gap generated is used to analyze the gap for the continuous improvement process under criterion – 7.

D. Attainment calculation tool and snapshots:

Internal Assessment:

The sample snapshots of the final summary sheet to display initial setting of targets, weightages of SEE and CIE, CO-PO-PSO mapping correlation matrix and CO/PO/PSO attainment calculations is as shown in figures from

(a) Internal Tests Marks/ Quiz / Assignment

SJCIT/NBA/ CIE-MARKS/ 2019-20		S J C INSTITUTE OF TECHNOLOGY Chickballapur - 562 101 Department of Aeronautical Engineering										S J C INSTITUTE OF TECHNOLOGY Chickballapur - 562 101 Department of Aeronautical Engineering									
Course Title:		AEROTHERMODYNAMICS										AEROTHERMODYNAMICS									
Subject Code:		18AE32	Semester & Section			3 - A	No.Students	57				18AE32	Semester & Section			3 - A	No.Students	57			
Course Intructor Name:		Prof. DEEPA M S				Course ID:	C202					Prof. DEEPA M S				Course ID:	C202				
		Test No:1										Test No:2									
Ref-Question Number:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		CIE Marks Entry Format For the Academic Year - 2019-20										CIE Marks Entry Format For the Academic Year - 2019-20									
Questions		1	2	3		AS-1	AS-1					1,2	3,4	5,6	7,8	9,10		AS-2	AS-2		
Main Question No.		1	2	3		4	5					1	2	3	4	5		6	7		
Mapped CO-No.		1	2	3		1	2					2	2	2	3	3		3	4		
Sl.	USN/Q-Marks	10	10	10		10	10					10	10	10	10	10		10	10		
1	1SJ18AE001	0	0	0		7	7					5	0	0	10	5		7	7		
2	1SJ18AE003	3	5	2		8	8					3	0	0	3	0		8	8		
3	1SJ18AE004	0	0	0		9	9					0	0	0	8	9		9	9		
4	1SJ18AE006	9	5	10		9	9					6	8	0	10	7		9	9		
5	1SJ18AE007	9	4	8		8	8					2	0	0	10	9		8	8		
6	1SJ18AE008	9	3	0		7	7					5	7	0	6	5		7	7		
7	1SJ18AE009	6	3	5		8	8					3	0	0	5	0		8	8		
8	1SJ18AE011	10	8	9		9	9					7	6	2	10	5		9	9		
9	1SJ18AE012	5	8	9		8	8					10	10	2	10	10		8	8		
10	1SJ18AE014	6	6	9		8	8					5	5	1	8	6		8	8		
11	1SJ18AE015	9	2	3		8	8					2	5	0	7	7		8	8		
12	1SJ18AE016	0	8	1		8	8					5	0	0	9	9		8	8		
13	1SJ18AE017	10	7	8		7	7					5	8	0	10	9		7	7		
14	1SJ18AE018	9	6	3		5	5					5	4	3	0	2		5	5		
15	1SJ18AE019	10	8	10		9	9					5	10	10	10	10		9	9		
16	1SJ18AE021	7	6	8		7	7					6	4	0	8	9		7	7		
17	1SJ18AE022	10	10	10		9	9					2	10	10	10	10		9	9		
18	1SJ18AE023	7	5	8		7	7					7	6	1	10	8		7	7		
19	1SJ18AE024	10	9	10		8	8					5	6	5	10	8		8	8		
20	1SJ18AE025	10	6	2		7	7					0	0	0	7	6		7	7		

Figure 3.2.1.3: Snapshot of Quiz, Assignment & Internal assessment test marks entry sheet

(b)Internal/ External Assessment

SJCIT/NBA/ SEE-MARKS/ 2019-20	S J C INSTITUTE OF TECHNOLOGY Chickballapur - 562 101 Department of Aeronautical Engineering							
Course Title	AEROTHERMODYNAMICS					Course Code	C202	
Subject Code	18AE32	Semester	3	Section	A	Emp.ID	1913	
Faculty Name	Prof. DEEPA M S					No.students	57	
	Format for Entry of Semester End Examination Marks					40	60	100
Sl.	USN	NAME				CIE	SEE	Total
1	1SJ18AE001	ABDUL RAHMAN J				19	26	45
2	1SJ18AE003	AKASH M				19	6	25
3	1SJ18AE004	AKASH SIDDANGOUDA PATIL				19	18	37
4	1SJ18AE006	ANNASAGARAM GOWTHAMI				28	24	52
5	1SJ18AE007	ANUSHREE N				26	30	56
6	1SJ18AE008	ARAVIND R NAIDU				19	21	40
7	1SJ18AE009	ARJI BHARATH				19	30	49
8	1SJ18AE011	BHAVANA A J				33	43	76
9	1SJ18AE012	BINDUSHREE K				33	33	66
10	1SJ18AE014	CHAVALI BHIMA SANKARAM				25	34	59
11	1SJ18AE015	CHIDANANDA				19	14	33
12	1SJ18AE016	DHANUSH KUMAR B K				19	23	42
13	1SJ18AE017	DURGAPRASAD N S				27	27	54
14	1SJ18AE018	GIRIDHAR S				19	25	44
15	1SJ18AE019	GIRISH N				37	53	90
16	1SJ18AE021	HARSHA D S				24	21	45
17	1SJ18AE022	HARSHITH L				36	37	73
18	1SJ18AE023	HARSHITHA K				27	33	60

Figure 3.2.1.4: Sample snapshot of Internal assessment test & Semester End Examination marks

(c) Summary Sheet to display CO, CO-PO Mapping and CO / PO targets for Attainment

S J C INSTITUTE OF TECHNOLOGY
Chickballapur - 562 101
Department of Aeronautical Engineering

Course Information

ramme Name	Aeronautical Engineering						
demic Year:	2019-20	Semester:	3	Section:	A	Subject Type:	Theory
urse Title:	AEROTHERMODYNAMICS						
rse Instructor Name:	Prof. DEEPA M S					Class Strength:	
ject Code:	18AE32	Course No	2	Course ID:	C202	57	

Scheme of Teaching & Marks

act Hr/Week	5	Lecture Hours (Hr.):	3	Tutorials (Hr.):	2
.CIE Marks:	40	Max. SEE Marks:	60	otal Max.Marks	100
.CIE Marks:	19	Min.SEE Marks:	21	otal Min.Marks	40
CIE (IA) Marks	40	Assignment Marks:	10	Test Marks:	30

Threshold Values for Attainment Calculation							Final CO Attainment			
tainment level	3	%	2	%	1	%	Percentage Contribution, %			
nal Assessment	>=	60	>=	50	>=	40	CIE	40	SEE	50
E Examination	>=	50	>=	45	>=	40	-		CES	10

Statements of Course Outcomes	No.of CO's	6		
02.1	Relate the fundamental thermodynamic concepts with the real life applications.		65	L2
02.2	Differentiate heat and work as thermodynamic quantity for various systems and processes		60	L3
02.3	Calculate the efficiency and COP for heat engine and heat pump using second law of thermodynamics.		60	L3
02.4	Estimate the change in entropy to define the reversibility or irreversibility of a process.		60	L3
02.5	Determine the various states of a pure substance using steam tables and evaluate properties for various gas mixtures using thermodynamic		60	L2
02.6	Compare the different types of Air Standard cycles, calculate its efficiencies and describe the different vapour power cycles, its		60	L3
er End Exam. (SEE) Targe		ourse End Survey(CES) Target (%		

CO-PO Mapping Table (In the scale of 3)

CO/PO	1	2	3	4	5	6	7	8	9	10	11	12
C202.1	3	3	2	1					2			2
C202.2	3	3	2	2					2			2
C202.3	3	3	2	2					2			2
C202.4	3	3	2	2					2			2
C202.5	3	3	2	1					2			2
C202.6	3	3	2	1					2			2
Total	18	18	12	9					12			12

CO-PSO Mapping Table

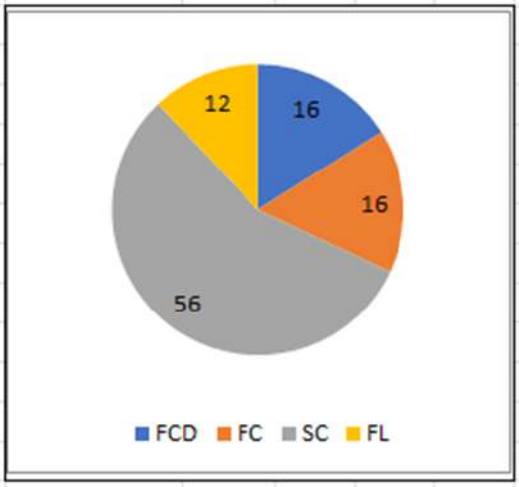
CO/PSO	1	2	3	4
C202.1	1	1		
C202.2	1	1		
C202.3	1	1		
C202.4	1	1		
C202.5	1	1		
C202.6	1	1		
Total	6	6		

Figure 3.2.1.5: Sample snapshot of Cos, CO-PO mapping & targets set for attainment

(d) Summary Sheet to display result analysis of the course

SJCIT/NBA/ SEE-REPT/ 2019-20	S J C INSTITUTE OF TECHNOLOGY Chickballapur - 562 101 Department of Aeronautical Engineering						
Course Title	AEROTHERMODYNAMICS					Course Code	C202
Subject Code	18AE32	Semester	3	Section	A	Emp.ID	1913
Faculty Name	Prof. DEEPA M S					No.students	57

Result Analysis of Subject Code -18ME32 - for the Academic year 2019-20



Result Analysis of Section: 3 - A				
No. Students	Pass	%	Fail	%
57	50	88	7	12

Class Analysis of Section: 3 - A			
No. Students	57	%	Grade Poi
FCD	9	16	10,9,8
FC	9	16	7
SC	32	56	6,4
FL	7	12	0

Max. and Avg. Marks					
CIE	AVG	SEE	AVG	TOT	AV
40	25	60	28	100	53

CO Attainment in SEE	
Sum_AT	95
T_students	57
Avg.ATNT	1.7
Sum_AT(=3)	25
AT(=3)%	44
Attainment	YES

ANALYSIS OF GRADE POINT AND GRADE LETTER							
Grade Letter	S	A	B	C	D	E	F
Grade Point	10	9	8	7	6	4	0
No.of Students	1		8	9	24	8	7
% of Students	2		14	16	42	14	12

CIE and SEE correlation Coefficient	0.7

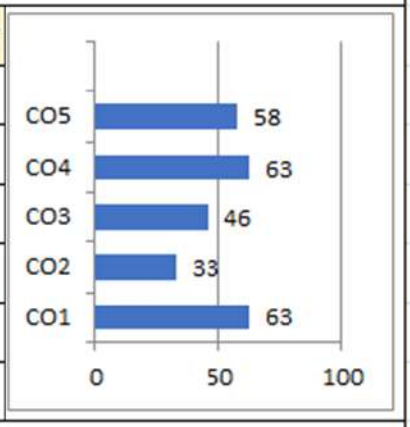
Figure 3.2.1.6: Sample snapshot of result analysis of the course

(f) Final Summary Sheet to display attainment of Course outcomes

SJCIT/NBA/ CO-REPT/ 2019-20	S J C INSTITUTE OF TECHNOLOGY Chickballapur - 562 101 Department of Aeronautical Engineering						
Course Title	AEROTHERMODYNAMICS					Course Code	C202
Subject Code	18AE32	Semester	3	Section	A	Emp.ID	1913
Faculty Name	Prof. DEEPA M S					No.students	57

CO Attainment from -TEST - 3, in the Subject: 18ME32-Based on: TYPE-1, Academic Year 2019-20

Sl.	CO Number	Sum	T_Std	Av-AT	TS(=3)	AT,%	Ac_AT	ATNT
CO1	C202.1	138	57	2.4	36	63	1.9	
CO2	C202.2	86	57	1.5	19	33	1	
CO3	C202.3	110	57	1.9	26	46	1.4	
CO4	C202.4	131	57	2.3	36	63	1.9	YES
CO5	C202.5	125	57	2.2	33	58	1.7	



Distribution of CO Attainment from -TEST - 3, in Subj: 18ME32-Based on: TYPE-1, ACDY:2019-20

Sl.	CO Number	3	%	2	%	1	%
CO1	C202.1	36	63	12	21	6	11
CO2	C202.2	19	33	10	18	9	16
CO3	C202.3	26	46	13	23	6	11
CO4	C202.4	36	63	9	16	5	9
CO5	C202.5	33	58	10	58	6	58

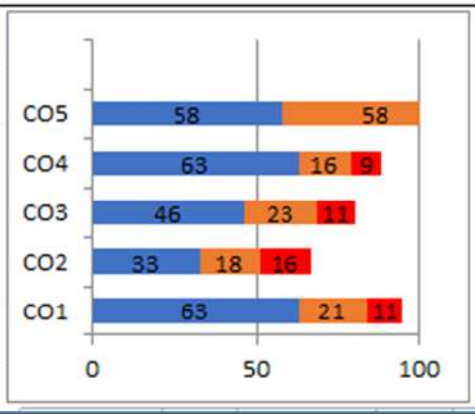


Figure 3.2.1.7: Sample snapshot of attainment of the Course Outcomes

3.3 Attainment of Program Outcomes and Program Specific Outcomes (50)

3.3.1. Describe assessment tools and processes used for measuring the attainment of each PO and PSO (10)

For each course, COs contributes to the attainment of POs. Different courses emphasize on contribution to different POs leading to eventual attainment of POs upon successful completion of all courses and hence the programme. Following are the assessment tools used for measuring the POs and PSOs

Table B. 3.3.1: Direct and Indirect Assessment Method

Direct Assessment		
Direct method	**Form of assessment**	**Frequency of assessment**
CO Attainment	1.Test 2. Assignment	1. Test: Three times / semester 2.Assignment:3 times for semester
	2.Laboratory	2. Laboratory: Weekly
	3.Semester End Examination	3.SEE: End of semester
	4.Tech Seminar	4.Tech Seminar: 8th semester as per event of calendar
	5.Project Work	5.Project Work: Assessed phase wise 1,2,3 (7th and 8th semester)
	6.Internship	6.Four weeks duration (During 7th and 8th semester)
Indirect Assessment Methods		
Indirect method	**Form of assessment**	**Frequency of assessment**
Course end survey	Survey Questionnaire through DHI software	After completion of each course
Program exit survey	Survey Questionnaire through DHI software	After completion of programme

3.3.2. Record the attainment of Course Outcomes of all courses with respect to set attainment levels (40)

The following table B.3.3.2 lists the Overall Course Outcomes attainment of all courses from second year.

OVERALL CO ATTAINMENT						
3rd SEMESTER						
Courses	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**	**CO6**
C201 –Engineering Mathematics III	0.84	0.74	0.9	0.89	0.89	
C202 - Elements of Aeronautics	2.39	2.39	2.38	1.66	2.01	
C203 - Aero Thermodynamics	1.15	1.60	1.59	1.59	1.61	
C204 - Mechanics of Materials	1.9	1.88	1.51	1.51	1.17	
C205 - Mechanics of Fluids	2.92	2.60	2.92	2.92	2.93	1.96
C206 - Measurement & Metrology	2.94	2.95	2.94	2.94	2.96	2.63
C207-Material Testing Lab	2.20	2.20	2.20			
C208-Machine Shop Lab	3	3	3			
4th SEMESTER						
Courses	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**	**CO6**
C209-Engineering Mathematics-IV	0.79	0.77	0.84	0.86	0.81	
C210-Aerodynamics -I	2.40	2.40	2.39	1.68	2.04	
C211-Aircraft Propulsion	2.97	2.96	2.96	2.96	2.96	
C212-Mechanisms and Machine Theory	2.61	2.62	2.26	2.97	2.97	
C213-Aircraft Material Science	2.92	2.59	2.59	2.92	2.93	
C214-Turbomachines	1.17	1.48	1.48	1.47	0.86	1.96
C215-Measurement & Metrology Lab	2.5	2.5	2.5			
C216-Computer Aided Aircraft Drawing	3	3	3			

5th SEMESTER						
Courses	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**	**CO6**
C301-Management & Entrepreneurship	2.04	2.04	2.04	1.96	2.00	
C302-Introduction to Composite Materials	2.98	2.97	2.97	2.97	2.98	
C303-Heat and Mass Transfer	2.97	2.97	2.97	2.97		
C304-Aircraft Structure-I	2.80	2.80	2.80	2.80	2.08	
C305-Theory of Vibrations	2.97	2.97	1.89	2.25	2.61	
C306-Basics of Rockets & Missiles	2.39	2.39	2.38	1.66	2.01	
C307-Aerodynamics Lab	2.94	2.94	2.94	2.94	2.94	2.94
C308-Energy Conversion & Fluid Mechanics Lab	2.96	2.96	2.96	2.96	2.96	2.96
6th SEMESTER						
Courses	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**	**CO6**
C309-Aerodynamics-II	2.97	2.97	2.97	2.97	2.97	
C310-Gas Turbine Technology	2.97	2.96	2.96	2.96		
C311-Aircraft Performance	2.43	2.44	2.44	1.71	2.07	
C312-Aircraft Structures-II	2.96	2.95	2.96	2.96		
C313-Space Mechanics	2.97	2.97	2.97	2.97		
C314-Finite Element Method	2.90	2.88	2.89	2.89	2.89	
C315-Unmanned Aerial Vehicles Basics & Applications	2.97	2.96	2.97	2.96	2.97	
C316-Aircraft Propulsion Lab	2.39	2.39	2.38	1.66	2.01	
C317-Aircraft Structures Lab	2.96	2.96	2.96	2.96	2.96	
7th SEMESTER						
Courses	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**	**CO6**
C401-Control Engineering	2.96	2.60	2.60	1.88	1.88	
C402-Computational Fluid Dynamics	1.88	1.88	0.80	0.80		
C403-Aircraft Stability and Control	2.93	2.93	2.92	2.92	2.91	
C404-Helicopter Dynamics	2.39	2.39	2.38	1.66	2.01	

C405-Guidance, Navigation & Control	2.96	2.95	2.96	2.96		
C406-Modelling and Analysis Lab	2.85	2.85	2.85	2.85	2.85	
C407- Flight Simulation Lab	2.85	2.85	2.85	2.85	2.85	
C408-Project Phase –I	2.97	2.97	2.97			
8th SEMESTER						
Courses	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**	**CO6**
C409-Avionics	2.97	2.97	2.98	2.98		
C410-Flight Vehicle Design	2.96	2.95	2.96	2.96		
C411- Flight Testing	3.00	3.00	3.00	3.00	3.00	
C412-Professional Practice /Internship	2.91	2.90	2.89	2.91		
C413- Project Work	2.96	2.96	2.96			
C414- Seminar	2.96	2.96	2.96	2.96		

Table B3.2.2b shows the recorded attainment of Course Outcomes of all courses for the batch: 2017 – 21

Direct attainment levels of PO& PSO are determined by taking average across all courses addressing that PO and/or PSO

Courses	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
I SEMESTER												
C101-Engineering Mathematics-I	2	1.75	2.04	0.85	0.85	-	-	-	-	-	-	-
C102-Engineering Physics	2.06	1.82	1.81	-	-	-	-	-	-	-	-	
C103-Elements of Civil Engineering and	1.35	1.57	2.02	-	-	-	-	-	-	-		0.625
C104-Elements of Mechanical Engineering	1.91	1.8	-	-	-	-	-	-	-	-	-	-
C105-Basic Electrical Engineering	1.85	1.78	1.68	-	-	-	-	-	-	-	-	-
C106-Workshop Practice	3	2	-	-	-	-	-	2	2	-	-	1
C107-Physics Lab	3	2	1	-	-	-	-	-	-	-	-	-

II SEMESTER												
C108-Engineering Mathematics-II	1.63	1.36	1.53	0.68	1.02	-	-	-	-	-	-	-
C109-Engineering Chemistry	2.7	2.35	0.9	-	-	-	-	-	-	-	-	-
C110-Programming in C And Data Structures	1.5	1.51	1.51	1.26	-	-	-	-	-	-	-	1.01
C111-Computer Aided Engineering Drawing	3	2	2	1	-	-	-	2	2	-	-	-
C112-Basic Electronics	2.3	1.9	1.86	-	-	-	-	-	-	-	-	-
C113-CCP Lab	2	2	2	1	2	-	-	-	-	-	-	2
C114-Engineering Chemistry Lab	3	2	2	-	-	-	-	-	-	-	-	-
C115-Environmental Studies	0.99	1.93	0.74	1.52	-	0.74	2.35	-	-	-	-	-
III SEMESTER												
C201 –Engineering Mathematics III	1.48	1.35	1.57	0.94	1.12	-	-	-	-	-	-	-
C202 - Elements of Aeronautics	2.01	1.45	0.72	-	-	-	-	-	1.45	1.45	-	1.45
C203 - Aero Thermodynamics	1.51	1.51	1.51	0.93	-	-	-	-	1.51	-	-	0.5
C204 - Mechanics of Materials	1.11	0.74	0.67			-	-	-	-	-	-	-
C205 - Mechanics of Fluids	2.89	1.88	1.25	0.63	-	-	-	-	-	-	-	-
C206 - Measurement & Metrology	2.6	0.9	0.9	-	-	0.9	0.9	-	2.6	2.6	-	-
C207-Material Testing Lab	1.5	-	-	-	-	1	0.67	1.17	1.5	1.5	-	0.5
C208-Machine Shop Lab	2	-	-	-	-	2	1	2	3	3	-	1
IV SEMESTER												
C209-Engineering Mathematics-IV	1.99	1.49	1.38	1.24	1.38	-	-	-	-	-	-	-
C210-Aerodynamics -I	2.18	2.18	2.18	1.29	-	-	-	-	-	-	-	1.54
C211-Aircraft Propulsion	2.96	2.22	0.99	0.99	-	0.99	1.97	0.99	1.97	1.97	0.99	2.96
C212-Mechanisms and Machine Theory	2.31	2.14	2.31	2.24	-	-	-	-	2.79	2.79	-	-
C213-Aircraft Material Science	2.82	-	-	-	-	-	-	-	1.88	1.88	-	1.88
C214-Turbomachines	1.06	1.06	0.99	1.03	-	-	-	0.71	0.71	-	-	0.38

C215-Measurement & Metrology Lab	2.6	0.9	0.9	-	-	0.9	0.9	-	2.6	2.6	-	-
C217-Computer Aided Aircraft Drawing	2.95	2.95	2.95	2.95	2.95	-	-	-	-	-	-	0.98
V SEMESTER												
C301-Management & Entrepreneurship	1.88	1.34	0.67	-	-	-	-	-	1.34	1.34	0	1.34
C302-Introduction to Composite Materials	2.97	1.98	2.97	-	-	-	-	-	1.98	1.98	-	1.98
C303-Heat and Mass Transfer	1.98	1.98	1.98	1.98	-	-	-	-	2.97	2.97	2.97	2.97
C304-Aircraft Structure-I	2.8	2.8	2.8	2.87				-	1.87	-	-	0.93
C305-Theory of Vibrations	2.54	2.54	2.54	1.12	-	-	-	-	-	-	-	2.97
C306-Basics of Rockets & Missiles	2.01	1.45	0.72	-	-	-	-	-	1.45	1.45	0	1.45
C307-Aerodynamics Lab	2.94	2.78	1.96	1.72	1.76	0.98	0.98	0.98	2.94	1.96	0.98	1.96
C308-Energy Conversion & Fluid	2.96	1.98	-	1.98	-	-	-	-	2.96	2.96	-	1.98
VI SEMESTER												
C309-Aerodynamics-II	2.77	2.77	1.78	1.19	-	-	-	-	1.98	1.98	-	1.98
C310-Gas Turbine Technology	1.97	1.97	1.97	1.97	-	-	-	-	2.96	2.96	2.96	2.96
C311-Aircraft Performance	2.22	2.22	2.22	1.89	-	-	-	-	2.22	1.48	-	0.74
C312-Aircraft Structures-II	2.96	2.96	2.96	2.96	-	-	-	-	-	-	-	0.99
C313-Space Mechanics	2.47	2.97	2.31	1.98	-	-	-	-	2.97	2.97	-	0.99
C314-Finite Element Method	2.94	1.96	1.96	-	-	-	-	-	-	-	-	2.94
C315-Unmanned Aerial Vehicles Basics &	2.97	2.97	2.37	-	-	-	-	-	1.98	-	-	0.99
C316-Aircraft Propulsion Lab	2.01	1.45	0.72	-	-	-	-	-	1.45	1.45	0	1.45
C317-Aircraft Structures Lab	2.96	2.96	-	2.96	-	-	-	-	2.96	-	-	0.99
VII SEMESTER												
C401-Control Engineering	2.09	1.81	1.64	1.73	-	-	-	-	1.59	-	-	-
C402-Computational Fluid Dynamics	1.34	0.89	1.01	-	0.8	-	-	-	0.53	0.27	-	-
C403-Aircraft Stability and Control	2.92	2.92	1.36	0.97	-	-	-	-	1.95	1.95	-	-

C404-Helicopter Dynamics	2.01	1.45	0.72	-	-	-	-	-	1.45	1.45	-	1.45
C405-Guidance, Navigation & Control	1.97	1.73	0.99	-	-	-	-	-	1.97	1.97	-	0.99
C406-Modelling and Analysis Lab	2.85	2.85	2.85	2.85	2.85	-	-	-	1.9	-	-	0.95
C407- Flight Simulation Lab	2.85	2.85	2.85	2.85	2.85	-	-	-	1.9	-	-	0.95
C408-Project Phase –I	2.97	2.64	2.97	0.99	0.99	-	-	0.99	2.97	2.31	0.99	1.98
VIII SEMESTER												
C409-Avionics	1.98	1.24	0.99	-	-	-	-	-	2.97	2.97	-	0.99
C410-Flight Vehicle Design	2.96	2.96	2.96	2.71	-	-	-	0.99	0.99	1.97	0.99	0.99
C411- Flight Testing	2.97	2.97	1.98	-	-	-	-	-	1.98	1.98	-	-
C412-Professional Practice/Internship	2.55	2.55	1.7	0.85	-	1.66	1.66	2.21	2.51	2.29	0.81	1.67
C413- Project Work	2.96	2.63	2.96	0.99	1.98	-	-	2.96	2.96	2.63	0.99	1.98
C414- Seminar	1.98	1.98	1.98	-	-	-	-	-	-	-	-	-
Direct Assessment (Average)	**2.41**	**2.09**	**1.81**	**1.66**	**1.72**	**1.28**	**1.36**	**1.55**	**2.05**	**2.05**	**0.97**	**1.49**
Indirect Assessment	**2.20**	**2.16**	**2.42**	**2.11**	**1.83**	**1.86**	**2.43**	**1.88**	**2.41**	**2.40**	**2.54**	**2.50**
Overall Attainment (90% Direct attainment + 10% Indirect Attainment)	**2.39**	**2.10**	**1.87**	**1.71**	**1.73**	**1.34**	**1.47**	**1.58**	**2.09**	**2.09**	**1.13**	**1.59**

PO Indirect Attainment (CAY: 2017-21 Batch):

Assessment Tool	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Program Exit Survey	2.44	2.42	2.40	2.38	2.36	2.47	2.47	2.44	2.42	2.40	2.49	2.47
Alumni Survey	1.96	1.98	2.04	1.78	1.96	1.92	2.00	2.20	2.16	2.18	2.14	2.02
Employer Survey	2.18	2.09	2.82	2.18	1.18	1.18	2.82	1.00	2.64	2.64	3.00	3.00
Indirect Attainment Average	**2.20**	**2.16**	**2.42**	**2.11**	**1.83**	**1.86**	**2.43**	**1.88**	**2.41**	**2.40**	**2.54**	**2.50**

PSO Direct Attainment (CAY: 2017-2021 Batch):

Courses	PSO1	PSO2
I SEMESTER		
C101-Engineering Mathematics-I	0.8	0.7
C102-Engineering Physics	1.7	0.8
C103-Elements of Civil Engineering and	2.4	0.8
C104-Elements of Mechanical Engineering	2.6	0.7
C105-Basic Electrical Engineering	2.5	0.6
C106-Workshop Practice	1.55	0.74
C107-Physics Lab	2.8	0.7
II SEMESTER		
C108-Engineering Mathematics-II	1.7	0.7
C109-Engineering Chemistry	0.7	0.7
C110-Programming in C And Data Structures	0.8	0
C111-Computer Aided Engineering Drawing	2.8	2.80.7
C112-Basic Electronics	1.8	0.8
C113-Ccp Lab	1.6	0
C114-Engineering Chemistry Lab	0	0
C115-Environmental Studies	1.4	0.6
III SEMESTER		
C201 –Engineering Mathematics III	1.4	0.6
C202 - Elements of Aeronautics	0.79	0.79
C203 - Aero Thermodynamics	0.54	-
C204 - Mechanics of Materials	1.27	0.63
C205 - Mechanics of Fluids	2.71	0.9
C206 - Measurement & Metrology	1.93	1.93
C207-Material Testing Lab	1.17	0
C208-Machine Shop Lab	1	0
IV SEMESTER		
C209-Engineering Mathematics-IV	0	0
C210-Aerodynamics -I	0.73	0.73
C211-Aircraft Propulsion	1.56	0.97
C212-Mechanisms and Machine Theory	2.63	0
C213-Aircraft Material Science	0.93	0.93
C214-Turbomachines	0.86	0.43
C215-Measurement & Metrology Lab	0.8	-
C216-Computer Aided Aircraft Drawing	1	-
V SEMESTER		
C301-Management & Entrepreneurship	0.98	0.98
C302-Introduction to Composite Materials	0.98	0.98
C303-Heat and Mass Transfer	2.94	2.45
C304-Aircraft Structure-I	0.96	0.96
C305-Theory of Vibrations	0.85	-
C306-Basics of Rockets & Missiles	0.99	0.99
C307-Aerodynamics Lab	1.96	0.96
C308-Energy Conversion & Fluid Mechanics	1.98	0.99

VI SEMESTER		
C309-Aerodynamics-II	0.97	0.97
C310-Gas Turbine Technology	2.92	2.43
C311-Aircraft Performance	2.28	1.43
C312-Aircraft Structures-II	0.97	0.97
C313-Space Mechanics	1.68	1.22
C314-Finite Element Method	0	0
C315-Unmanned Aerial Vehicles Basics &	2.97	2.97
C316-Aircraft Propulsion Lab	1.9	0.95
C317-Aircraft Structures Lab	1.98	2.57
VII SEMESTER		
C401-Control Engineering	0.99	-
C402-Computational Fluid Dynamics	2.88	0.96
C403-Aircraft Stability and Control	1.95	1.17
C404-Helicopter Dynamics	1.0	-
C405-Guidance, Navigation & Control	1.87	1.87
C406-Modelling and Analysis Lab	1.87	1.67
C407- Flight Simulation Lab	1.05	0.7
C408-Project Phase –I	2.91	1.94
VIII SEMESTER		
C409-Avionics	0.99	0.99
C410-Flight Vehicle Design	1.25	1.25
C411- Flight Testing	1.8	1.8
C412-Professional Practice/Internship	1	0
C413- Project Work	0.99	0.99
C414- Seminar	2	1.2
Direct Assessment (Average)	**1.59**	**1.29**
Indirect Assessment	**2.37**	**1.23**
Overall Attainment (90% Direct attainment + 10% Indirect Attainment)	**1.67**	**1.19**

PSO Indirect Attainment (CAY: 2017-21 Batch):

Assessment Tool	PSO1	PSO2
Program Exit Survey	2.5	1.4
Alumni Survey	2.4	1.2
Employer Survey	2.2	1.1
Indirect Attainment Average	**2.37**	**1.23**

3.3. Attainment of Program Outcomes and Program Specific Outcomes (50)

3.3.1. Describe assessment tools and processes used for measuring the attainment of each of the Program Outcomes and Program Specific Outcomes (10)

CBCS Scheme: (2016-20 Batch)

Direct Assessment Tools:

To know the effectiveness of the delivery,

• Continuous Internal Evaluation (CIE) or Internal Assessment (IA) is conducted on a monthly basis as per calendar or events issued for theory and laboratory subjects for 25 marks.

• The University will conduct Semester End Examinations (SEE) every semester for theory and laboratory for 100 and 50 marks respectively.

Indirect Assessment Tools:

- Employer Survey
- Alumni Survey

PO Attainment:

Direct attainment level of a PO & PSO is determined by taking average across all courses addressing that PO and/or PSO. Fractional numbers may be used for example 1.55.

Example:

1. It is assumed that a particular PO has been mapped to four courses C2O1, C3O2, C3O3 and C4O1
2. The attainment level for each of the four courses will be as per the examples shown in 3.2.2
3. PO attainment level will be based on attainment levels of direct assessment and indirect assessment
4. For affiliated, non-autonomous colleges, it is assumed that while deciding on overall attainment level 80% weightage may be given to direct assessment and 20% weightage to indirect assessment through surveys from Alumni (largely), employers (to some extent). Program may have different weightages with appropriate justification.
5. Assuming following actual attainment levels:

Direct Assessment

C302 – Medium (2)

C303 – Low (1)

C401 – High (3)

Attainment level will be summation of levels divided by no. of courses

3+2+1+3/4=9/4=2.25

Indirect Assessment

Surveys, Analysis, customized to an average value as per levels 1, 2 & 3. Assumed level - 2

6. PO Attainment level will be 90 % of direct assessment + 10 % of indirect assessment i.e. 1.8 + 0.4 = 2.2.

Note: Similarly, for PSOs

3.3.2. Provide results of evaluation of each PO & PSO (40)

3.3.2.1. Direct Assessment Results

Direct attainment level of a PO & PSO is determined by taking average across all courses addressing that PO and/or PSO

PO Direct Attainment (CAYm1: 2016-20 Batch)

Table B.3.3.2.1a: Overall PO Attainment for 2016-2020 Batch (CAYm1)

Courses	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
I SEMESTER												
C101-Engineering Mathematics-I	1.87	1.66	1.94	0.83	0.83							
102-Engineering Physics	2	1.33	0.67	-	-	-	-	-	-	-	-	-
C103-Elements of Civil Engineering and	1.67	1.94	2.5	-	-	-	-	-	-	-	-	0.83
C104-Elements of Mechanical Engineering	3	1.5	-	-	-	-	-	-	-	-	-	-
C105-Basic Electrical Engineering	2	1.6	1.1	0		-	-	-	-	-	-	-
C106-Workshop Practice	3	2.5	3	-	2	-	-	2	2	2	-	1
C107-Physics Lab	2	1.33	0.67	-	-	-	-	-	-	-	-	-
C108-Constitution of India	2	1	2	1	1	2	1.5	2.2	2.5	2	2.16	2.83
II SEMESTER												
C109-Engineering Mathematics-II	1.6	1.33	1.5	0.66	1							
C110-Engineering Chemistry	3	2.6	1		-	-	-	-	-	-	-	-
C111-Programming in C And Data Structures	2.17	2.17	1.83	1.67	1.67	-	-	-	-	-	-	1.67
C112-Computer Aided Engineering Drawing	2.8	2	2	1.5	-	-	-	3	3	-	-	2

C113-Basic Electronics	2	1.33	0.67	-	-	-	-	-	-	-	-	-
C114-CCP Lab	2.4	2.4	2	2	2	-	-	-	-	-	-	2
C115-Engineering Chemistry Lab	3	1.75	1.75	-	-	-	-	-	-	-	-	-
C116-Environmental Studies	1.33	2.5	1	2		1	3					
III SEMESTER												
C201 –Engineering Mathematics III	0.73	0.67	0.78	0.47	0.55							
C202 - Elements of Aeronautics	3	2.8	2.6	2.4	-	-	-	-	-	-	-	-
C203 - Aero Thermodynamics	2.16	2.16	1.44	1.14	-	-	-	-	1.44	-	-	1.86
C204 - Mechanics of Materials	2.5	2.5	2.5	2	-	-	-	-	-	-	-	2
C205 - Mechanics of Fluids	2.67	1.78	0.89	-	-	-	-	-	-	-	-	0.92
C206 - Measurement & Metrology	1.97	1.87	-	-	-	-	-	-	-	-	-	1.97
C207-Material Testing Lab	0.6	0.6	-	-	-	-	-	-	0.6	-	-	0.2
C208-Machine Shop Lab	3	1	1	-	-	1	1	-	3	3	-	-
IV SEMESTER												
C209-Engineering Mathematics-Iv	1.46	1.33	1.55	0.93	1.10							
C210-Aerodynamics -I	2.58	2.58	2.58	1.18	-	-	-	-	-	-	-	2.58
C211-Aircraft Propulsion	2.17	1.73	0.78	0.78	-	0.77	1.53	0.74	1.55	1.55	0.77	2.32
C212-Mechanisms and Machine Theory	1.52	1.44	1.43	1.29	-	-	-	-	-	-	-	1.29
C213-Aircraft Material Science	2.8	-	-	-	-	-	-	-	-	-	-	1.87
C214-Turbomachines	1.83	1.44	1.74	1.93	-	-	-	-	-	-	-	1.29
C215-Measurement & Metrology Lab	2.6	0.87	0.87	-	-	0.87	0.87	-	2.6	2.6	-	-
C217-Computer Aided Aircraft Drawing	3	3	3	3	3	-	-	-	-	-	-	1
V SEMESTER												
C301-Management & Entrepreneurship	0.89	0.72	-	-	-	1.79	1.79	1.79	2.68	0.89	2.51	-
C302-Introduction to Composite Materials	2.97	1.97	1.62	1.47	0.93	-	1	-	2	2	-	1.98

C303-Heat and Mass Transfer	2.88	2.88	1.92	0.96	-	-	-	-	-	-	-	-
C304-Aircraft Structure-I	2.92	2.92	2.92	2.32	-	-	-	-	1.95	-	-	0.97
C305-Theory of Vibrations	2.92	2.92	2.92	2.32	-	-	-	-	1.95	-	-	0.97
C306-Basics of Rockets & Missiles	1.79	1.79	1.98	2					2.96			0.99
C307-Aerodynamics Lab	3	2.83	2	1.75	1.8	1	1	1	2.5	2	1	2
C308-Energy Conversion & Fluid	3	1	1	-	-	-	-	-	3	3	-	2
VI SEMESTER												
C309-Aerodynamics-II	3	2.25	2.25	1.5	-	-	-	-	3	-	-	1.25
C310-Gas Turbine Technology	2.76	1.84	0.92	-	-	0.91	0.91	-	1.82	1.82	-	1.84
C311-Aircraft Performance	2.68	2.68	2.68	1.59	-	-	-	-	-	-	-	0.89
C312-Aircraft Structures-II	2.96	2.96	2.96	1.57	-	-	-	-	1.97	-	-	1.39
C313-Space Mechanics	2.92	2.92	2.92						1.95			0.97
C314-Finite Element Method	1	1.6	1.6	1.5	-	1.25	1.4	1	2	2	-	1.4
C315-Unmanned Aerial Vehicles Basics	2.4	2.87	2.2	1.87					2.9	2.9		
C316-Aircraft Propulsion Lab	3	2.33	1.5	1.33	-	1.2	1.25	-	3	2	-	1.5
C317-Aircraft Structures Lab	3	2.25	2.25	1.5	-	-	-	-	3	-	-	1.25
VII SEMESTER												
C401-Control Engineering	2	1	1	-	2	-	-	-	2	2	-	2
C402-Computational Fluid Dynamics	1.8	1.63	1.77	1	-	-	-	-	-	-	-	-
C403-Aircraft Stability and Control	2.88	2.88	1.33	2.29	-	-	-	-	1.92	1.92	-	0.96
C404-Helicopter Dynamics	2.88	2.88	1.33	2.29	-	-	-	-	1.92	1.92	-	0.96
C405-Guidance, Navigation & Control	3	3	2	-	-	-	-	-	1	-	-	1
C406-Modelling and Analysis Lab	0.8	0.8	0.8						0.9	0.45		0.45
C407- Flight Simulation Lab	2.8	2.8	2.8	1.87	2.8				2.8	1.87		0.93
C408-Project Phase –I	3	3	3	3	3	-	-	-	2	-	-	1

VIII SEMESTER												
C409-Avionics	3	2.67	3	-	-	-	-	-	3	2.33	-	2
C410-Flight Vehicle Design	0.58	0.58							1.4	1.4		0.47
C411- Flight Testing	3	3	3	3	-	-	-	1	3	2	1	1
C412-Professional Practice/Internship	3	0.67	0.4									
C413- Project Work	3	3	2	1	-	2	2	2.67	3	2.75	1	2
C414- Seminar	3	2.67	3	-	-	-	-	3	2.67	2.67	-	2
Direct Attainment	**2.36**	**2.00**	**1.81**	**1.61**	**1.69**	**1.25**	**1.44**	**1.84**	**2.23**	**2.05**	**1.41**	**1.44**
Indirect Attainment	**2.07**	**2.04**	**2.43**	**1.98**	**1.57**	**1.55**	**2.41**	**1.60**	**2.40**	**2.41**	**2.57**	**2.51**
Overall Attainment (90% Direct attainment + 10% Indirect attainment)	**2.33**	**2.00**	**1.87**	**1.65**	**1.68**	**1.28**	**1.54**	**1.82**	**2.25**	**2.09**	**1.53**	**1.55**

PO Indirect Attainment (CAYm1: 2016-20 Batch):

Table B.3.3.2.1b: PO Indirect Attainment for 2016-2020 Batch (CAYm1)

Assessment Tool	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Alumni Survey	1.96	1.98	2.04	1.78	1.96	1.92	2.00	2.20	2.16	2.18	2.14	2.02
Employer Survey	2.18	2.09	2.82	2.18	1.18	1.18	2.82	1.00	2.64	2.64	3.00	3.00
Indirect Attainment Average	**2.07**	**2.04**	**2.43**	**1.98**	**1.57**	**1.55**	**2.41**	**1.60**	**2.40**	**2.41**	**2.57**	**2.51**

PSO Direct Attainment (CAYm1: 2016-2020 Batch):

Table B.3.3.2.1c: Overall PSO Attainment for 2016-2020 Batch (CAYm1)

Course	PSO1	PSO2
I SEMESTER		
C101-Engineering Mathematics-I	-	-
102-Engineering Physics	-	-
C103-Elements of Civil Engineering and Mechanics	-	-

C104-Elements of Mechanical Engineering	1	-
C105-Basic Electrical Engineering	-	-
C106-Workshop Practice	-	2
C107-Physics Lab	-	-
C108-Constitution of India	-	-
II SEMESTER		
C109-Engineering Mathematics-II	-	-
C110-Engineering Chemistry	-	-
C111-Programming in C And Data Structures	-	-
C112-Computer Aided Engineering Drawing	-	3
C113-Basic Electronics	-	-
C114-CCP Lab	-	-
C115-Engineering Chemistry Lab	-	-
C116-Environmental Studies	1	-
III SEMESTER		
C201 –Engineering Mathematics III	-	-
C202 - Elements of Aeronautics	2.4	1.6
C203 - Aero Thermodynamic	1.44	0.72
C204 - Mechanics of Materials	1	1
C205 - Mechanics of Fluids	0.92	-
C206 - Measurement & Metrology	-	-
C207- Material Testing Lab	-	0.2
C208- Machine Shop Lab	1	-
IV SEMESTER		
C209- Engineering Mathematics-IV	-	-
C0210- Aerodynamics -I	0.86	0.86
C211- Aircraft Propulsion	1.22	0.77
C212- Mechanisms and Machine Theory	-	-
C213- Aircraft Material Science	-	1.87
C214- Turbomachines	-	-
C215- Measurement & Metrology Lab	0.87	-
C216- Computer Aided Aircraft Drawing	1	-

V SEMESTER		
C301-Management & Entrepreneurship	2.68	1.79
C302-Introduction to Composite Materials	1.98	1.98
C303-Heat and Mass Transfer	0.96	-
C304-Aircraft Structure-I	0.97	0.97
C305-Theory of Vibrations	0.97	0.97
C306-Basics of Rockets & Missiles	0.99	0.99
C307-Aerodynamics Lab	2	2
C308-Energy Conversion & Fluid Mechanics Lab	2	2
VI SEMESTER		
C309-Aerodynamics-II	1	1
C310-Gas Turbine Technology	1.84	1.84
C311-Aircraft Performance	0.89	0.89
C312-Aircraft Structures-II	0.99	0.99
C313- Finite Element Method	2.92	2.92
C314- Unmanned Aerial Vehicles Basics & Applications	1	2
C315- Aircraft Propulsion Lab	1.68	1.22
C316- Aircraft Structures Lab	2	1
VII SEMESTER		
C401-Control Engineering	1	1
C402-Computational Fluid Dynamics	1.84	1.84
C403-Aircraft Stability and Control	0.89	0.89
C404- Helicopter Dynamics	0.99	0.99
C405- Guidance, Navigation & Control	2.92	2.92
C406- Flight Simulation Lab	1	2
C407-Modelling and Analysis Lab	1.68	1.22
C408- Project Phase –I	2	1
VIII SEMESTER		
C409- Avionics	1.67	1.67
C410- Flight Vehicle Design	1.05	0.7
C411- Flight Testing	3	2
C412- Professional Practice/Internship		0.8
C413- Project Work	1.25	1.25

C414- Seminar	1	1
Direct Assessment	**1.32**	**1.40**
Indirect Assessment	**2.3**	**2.15**
Overall Attainment (90% direct attainment + 10% indirect attainment)	**1.42**	**1.48**

PSO Indirect Attainment (CAYm1: 2016-20 Batch):

Table B.3.3.2.1d: PSO Indirect Attainment for 2016-2020 Batch (CAYm1)

AssessmentTool	PSO1	PSO2
AlumniSurvey	2.4	2.3
EmployerSurvey	2.2	2.0
Indirect Attainment Average	**2.3**	**2.15**

3.3.2.2. Direct Assessment Results

Direct attainment level of a PO & PSO is determined by taking average across all courses addressing that PO and/or PSO

PO Direct Attainment (CAYm2: 2015-19 Batch)

Table B.3.3.2a: Overall PO Attainment for 2015-2019 Batch (CAYm2)

Courses	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
I SEMESTER												
C108-Engineering Mathematics-II	2.75	1.75	2.33	1.5	1.5							
C109-Engineering Chemistry	2.5	1.5	1	-	-	-	-	-	-	-	-	1
C110-Programming In C And Data Structures	2.17	2.17	1.83	1.67	1.67	-	-	-	-	-	-	1.67
C111-Computer Aided Engineering Drawing	2.33	1.67	1.67	1.25	-	-	-	3	3	-	-	2
C112-Basic Electronics	2.6	2.2	1	1	1	-	-	-	-	-	-	-
C113-CCP Lab	2.4	2.4	2	2	2	-	-	-	-	-	-	2
C114-Engineering Chemistry Lab	3	1.75	1.75	-	-	-	-	-	-	-	-	-

C115-Environmental Studies	1.33	2.5	1	2	-	1	3	-	-	-	-	-
II SEMESTER												
C101-Engineering Mathematics-I	2.4	2	2.25	1	1.5							
102-Engineering Physics	2	1.33	0.67	-	-	-	-	-	-	-	-	-
C103-Elements Of Civil Engineering And	1.67	1.94	2.5	-	-	-	-	-	-	-	-	-
C104-Elements Of Mechanical Engineering	3	2.33	2	1	-	-	-	-	2	-	-	2
C105-Basic Electrical Engineering	2	1.55	1.11			-	-	-		-	-	-
C106-Workshop Practice	3	2.5	3	-	2	-	-	2	2	2	-	1
C107-Physics Lab	2	1.33	0.67	-	-	-	-	-	-	-	-	-
C116-Constitution of India	2	1	2	1	1	2	1.5	2.2	2.5	2	2.16	2.83
III SEMESTER												
C201 –Engineering Mathematics III	1.83	1.66	1.94	1.16	1.38							
C202 - Elements of Aeronautics	2.8	1.87	0.93	-	-	-	-	-	-	-	-	0.93
C203 - Aero Thermodynamics	2.5	2.5	1.67	1.33	-	-	-	-	1.67	-	-	2.16
C204 - Mechanics Of Materials	1.85	1.68	1.52	1.1	-	-	-	-	-	-	-	0.62
C205 - Mechanics Of Fluids	1	0.67	0.3	-		-	-	-	-	-	-	0.33
C206 - Measurement & Metrology	1.73	1.6	1.6	-	-	-	-	-	-	-	-	1.71
C207-Material Testing Lab	1.6	0.8	0.8	0.8	0.8	0.8	-	-	2.4	2.4	-	0.8
C208-Machine Shop Lab	1.87	1.87	1.87	0.93	0.93	0.93	-	-	2.8	2.8	-	0.93
IV SEMESTER												
C209-Engineering Mathematics-Iv	1.06	1.2	1.1	1	1.1							
C210-Aerodynamics -I	2.92	2.92	2.52	2.32	-	-	-	-	-	-	-	2.92
C211-Aircraft Propulsion	2.38	1.8	0.8	0.8	-	0.79	1.57	0.77	1.59	1.59	0.79	2.38
C212-Mechanisms And Machine Theory	2.37	2.21	2.23	1.91	-	-	-	-	-	-	-	1.91
C213-Aircraft Material Science	3	3	3	1.8					3			1

C214-Turbomachines	2.87	2.24	2.71	2.83	-	-	-	-	-	-	-	1.89
C215-Measurement & Metrology Lab	2.4	0.8	0.8	-	-	0.8	0.8	-	2.4	2.4	-	-
C217-Computer Aided Aircraft Drawing	3	3	1.5	-	-	-	-	-	3	-	-	1
V SEMESTER												
C301-Management & Entrepreneurship	1	-	1	-	-	2	1	2	2	2.6	2	2
C302-Introduction To Composite Materials	3	2	-	-	-	-	-	-	-	-	-	2
C303-Heat And Mass Transfer	3	3	3	1.8	-	-	-	-	3	-	-	1
C304-Aircraft Structure-I	2.76	2.76	2.76	2.76	-	-	-	-	-	-	-	0.92
C305-Theory Of Vibrations	2.92	2.54	1.4	0.97	-	-	-	-	-	-	-	0.97
C306-Basics Of Rockets & Missiles	2.92	1.4	1.62	0.97	-	-	-	-	-	-	-	0.97
C307-Aerodynamics Lab	3	3	2.2	1.75	1.75	1	1	1	3	2	1	2
C308-Energy Conversion & Fluid	3	1	1	-	-	-	-	-	3	3	-	2
VI SEMESTER												
C309-Aerodynamics-II	3	2.4	2.4	1.67	-	-	-	-	-	-	-	1.4
C310-Gas Turbine Technology	3	2	1	-	-	1	1	-	2	2	-	2
C311-Aircraft Performance	3	3	3	1.8	-	-	-	-	-	-	-	1
C312-Aircraft Structures-Ii	3	3	3	3								1
C313-Space Mechanics	2.4	2	2	1	-	-	-	-	-	-	-	2
C314-Finite Element Method	3	3	3	1	1	1	-	-	-	-	-	1
C315-Unmanned Aerial Vehicles Basics &	3	2.33	1.5	1.33	-	1.2	1.25	-	3	2	-	1.5
C316-Aircraft Propulsion Lab	2	1	1	-	2	-	-	-	2	2	-	2
C317-Aircraft Structures Lab	3	2.4	2.4	1.67	-	-	-	-	-	-	-	1.4
VII SEMESTER												
C401-Control Engineering	3	3	1.4	1	-	-	-	-	-	-	-	2
C402-Computational Fluid Dynamics	3	3	2.6	2.4	2	1	-	2	2	1	1	3

C403-Aircraft Stability And Control	2.4	2.4	2.4	2	-	-	-	-	-	-	-	2
C404-Helicopter Dynamics	3	3	2	-	-	-	-	-	1	-	-	1
C405-Guidance, Navigation & Control	1.8	1.6	1.8	-	-	-	-	-	3	3	-	1
C406-Modelling And Analysis Lab	3	3	3	2	3				3	2		1
C407- Flight Simulation Lab	3	3	3	3	3	-	-	-	2	-	-	1
C408-Project Phase –I	3	2.67	3	-	-	-	-	-	2.67	2.33	-	2
VIII SEMESTER												
C409-Avionics	1.23	1.23	-	-	-	-	-	-	2.95	2.95	-	0.98
C410-Flight Vehicle Design	3	3	2	2	3	1	1	1	2	-	2	1
C411- Flight Testing	2.92	0.97	0.97	-	-	-	-	-	-	-	-	-
C412-Professional Practice/Internship	3	3	2	1	-	2	2	2.67	3	2.75	-	2
C413- Project Work	3	2.67	3	-	-	-	-	3	2.67	2.67	-	2
C414- Seminar	3	2	-	-	2	-	-	1	3	2.25	1	1.75
Direct Attainment	**2.68**	**2.27**	**1.99**	**1.76**	**1.89**	**1.25**	**1.48**	**1.90**	**2.58**	**2.36**	**1.45**	**1.57**
Indirect Attainment	**2.07**	**2.04**	**2.43**	**1.98**	**1.57**	**1.55**	**2.41**	**1.60**	**2.40**	**2.41**	**2.57**	**2.51**
Overall Attainment	**2.42**	**2.08**	**1.88**	**1.59**	**1.69**	**1.20**	**1.50**	**1.82**	**2.44**	**2.27**	**1.52**	**1.62**

PO Indirect Attainment (CAYm2: 2015-19 Batch):

Table B.3.3.2.2b: PO Indirect Attainment for 2015-2019 Batch (CAYm2)

Assessment Tool	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Alumni Survey	1.96	1.98	2.04	1.78	1.96	1.92	2.00	2.20	2.16	2.18	2.14	2.02
Employer Survey	2.18	2.09	2.82	2.18	1.18	1.18	2.82	1.00	2.64	2.64	3.00	3.00
Indirect Attainment Average	**2.07**	**2.04**	**2.43**	**1.98**	**1.57**	**1.55**	**2.41**	**1.60**	**2.40**	**2.41**	**2.57**	**2.51**

PSO Direct Attainment (CAYm2: 2015-2019 Batch):

Table B.3.3.2c: Overall PSO Attainment for 2015-2019 Batch (CAYm2)

Course	PSO1	PSO2
I SEMESTER		
C101-Engineering Mathematics-I	-	-
C102- Engineering Chemistry	-	-
C103- Programming in C And Data Structures	-	-
C104- Computer Aided Engineering Drawing	-	2.5
C105- Basic Electronics	1	1
C106- CCP Lab	-	-
C107- Engineering Chemistry Lab	-	-
C108- Environmental Studies	1	-
II SEMESTER		
C109- Engineering Mathematics-II	-	-
C110- Engineering Physics	-	-
C111- Elements of Civil Engineering And Mechanics	1.88	-
C112- Elements of Mechanical Engineering	1	1
C113- Basic Electrical Engineering	-	-
C114- Workshop Practice	-	2
C115- Physics Lab	-	-
C116-Constitution of India	-	-
III SEMESTER		
C201 –Engineering Mathematics III	-	-
C202 - Elements of Aeronautics	0.93	0.93
C203 - Aero Thermodynamic	1.67	0.83
C204 - Mechanics of Materials	0.62	0.62
C205 - Mechanics of Fluids	0.33	-
C206 - Measurement & Metrology	-	-
C207- Material Testing Lab	0.8	-
C208- Machine Shop Lab	0.93	-

IV SEMESTER		
C209- Engineering Mathematics-IV	-	-
C0210- Aerodynamics -I	0.97	0.97
C211- Aircraft Propulsion	1.26	0.79
C212- Mechanisms and Machine Theory	-	-
C213- Aircraft Material Science	1	1
C214- Turbomachines	0.94	-
C215- Measurement & Metrology Lab	0.8	-
C216- Computer Aided Aircraft Drawing	1	1
V SEMESTER		
C301-Management & Entrepreneurship	-	-
C302-Introduction to Composite Materials	-	2
C303-Heat and Mass Transfer	1	1
C304-Aircraft Structure-I	0.92	0.92
C305-Theory of Vibrations	0.97	-
C306-Basics of Rockets & Missiles	0.97	-
C307-Aerodynamics Lab	2	2
C308-Energy Conversion & Fluid Mechanics Lab	2	2
VI SEMESTER		
C309-Aerodynamics-II	1	1
C310-Gas Turbine Technology	1.78	1.78
C311-Aircraft Performance	0.92	0.92
C312-Aircraft Structures-II	0.92	0.92
C313- Finite Element Method	-	1.97
C314- Unmanned Aerial Vehicles Basics & Applications	3	1
C315- Aircraft Propulsion Lab	2	1
C316- Aircraft Structures Lab	2	2
VII SEMESTER		
C401-Control Engineering	-	1.87
C402-Computational Fluid Dynamics	1.85	1.86
C403-Aircraft Stability and Control	0.89	0.89
C404- Helicopter Dynamics	0.95	1.89

C405- Guidance, Navigation & Control	0.93	0.93
C406- Flight Simulation Lab	2	2
C407-Modelling and Analysis Lab	1	-
C408- Project Phase –I	1.67	1.67
VIII SEMESTER		
C409- Avionics	2.22	1.48
C410- Flight Vehicle Design	3	2
C411- Flight Testing	-	1.95
C412- Professional Practice/Internship	1.25	1.25
C413- Project Work	1	1
C414- Seminar	1.75	1.75
AVERAGE VALUE	**1.32**	**1.40**

PSO Indirect Attainment (CAYm2: 2015-19 Batch):

Table B.3.3.2.2d: PSO Indirect Attainment for 2015-2019 Batch (CAYm2)

AssessmentTool	PSO1	PSO2
AlumniSurvey	2.4	2.3
EmployerSurvey	2.2	2.0
Indirect Attainment Average	2.3	2.15

3.3.2.3. PO Attainment level = 90 % of direct assessment + 10% of indirect assessment

Program Outcomes and Program Specific Outcomes Attainment (2017-2021):

Table B.3.3.2.3a PO Attainment 2017-21 batch

POs/ attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Target	2.64	2.35	2.09	1.84	2.05	1.42	1.53	1.78	2.49	2.23	1.49	1.65
Avg attainment	2.39	2.1	1.87	1.71	1.73	1.34	1.47	1.58	2.09	2.09	1.13	1.59

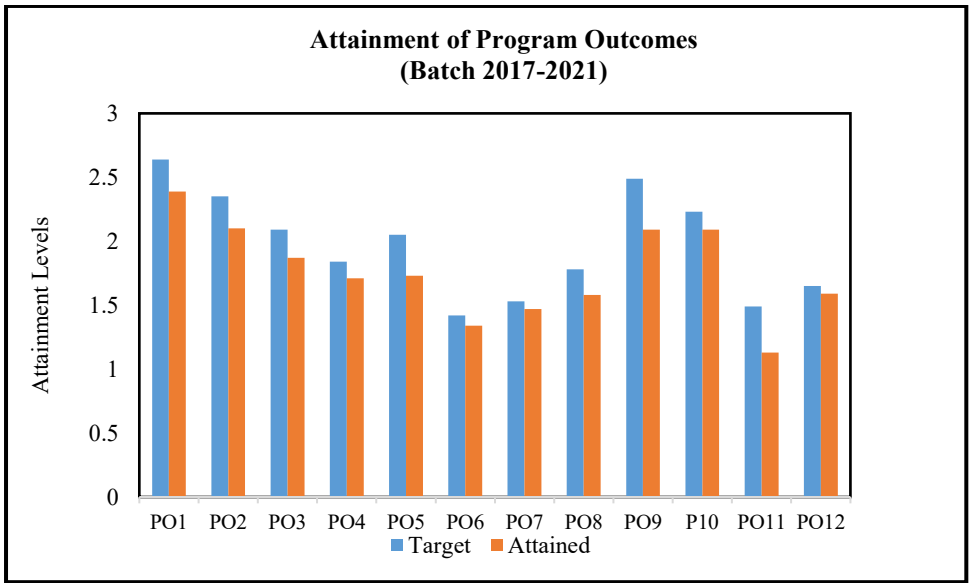


Figure 3.3.2.3a: PO Attainment 2017-21 batch

Table B.3.3.2.3b: PO Attainment 2016-20 batch

POs/ attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Target	2.69	2.3	2.03	1.88	1.79	1.34	1.43	1.74	2.51	2.29	1.24	1.57
Avg attainment	2.33	2.00	1.87	1.65	1.68	1.28	1.54	1.82	2.25	2.09	1.53	1.55

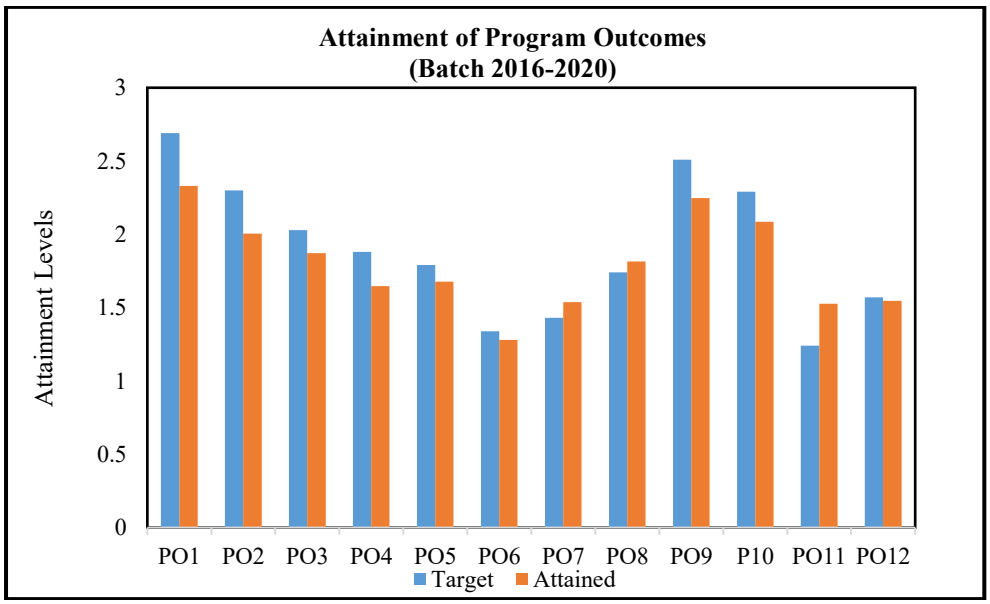


Figure 3.3.2.3b: PO Attainment 2016-20 batch

Table B.3.3.2.3c: PO Attainment 2015-19 batch

POs/ attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Target	2.68	2.27	1.99	1.76	1.89	1.25	1.48	1.90	2.58	2.36	1.45	1.57
Avg attainment	2.42	2.08	1.88	1.59	1.69	1.20	1.50	1.82	2.44	2.27	1.52	1.62

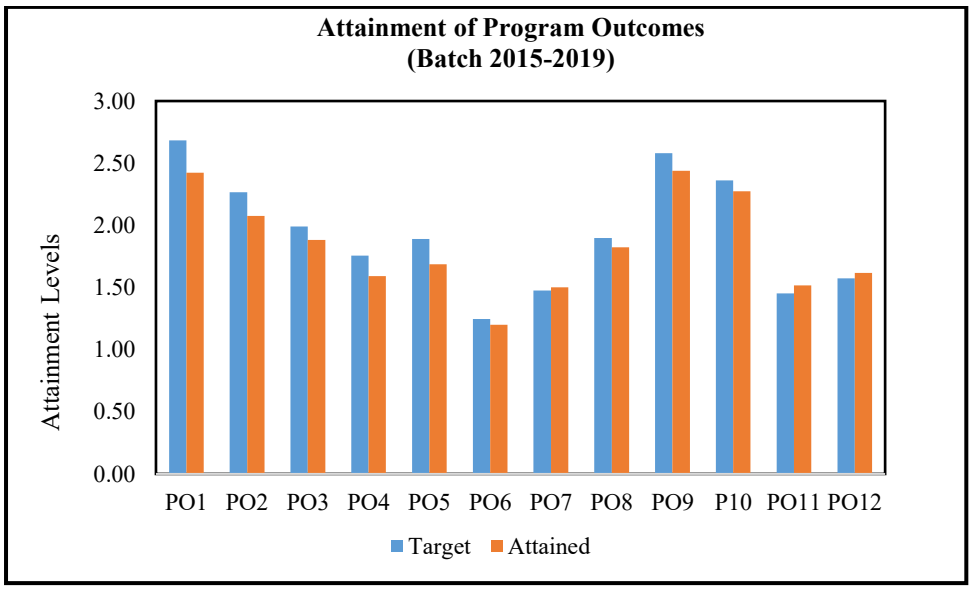


Figure 3.3.2.3c: PO Attainment 2015-19 batch

3.3.2.4: PSO Attainment level = 90 % of direct assessment + 10 % of indirect assessment

Program Specific Outcomes Attainment (2017-21):

Table B.3.3.2.4a: PSO Attainment 2015-19 batch

PSOs/ attainment	PSO1	PSO2
Target	1.84	1.53
Avg attainment	1.32	1.04

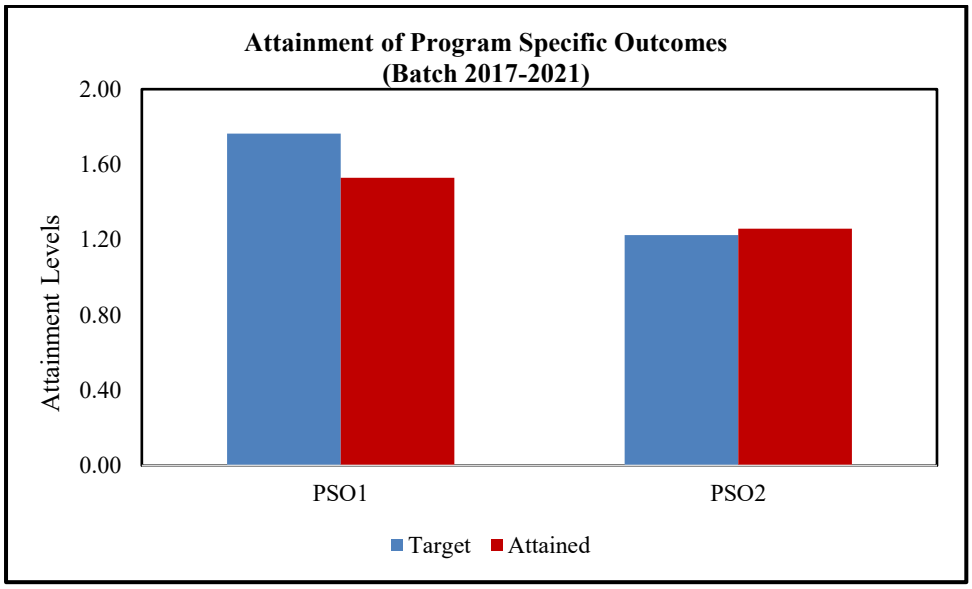


Figure 3.3.2.4a: PSO Attainment 2017-21 batch

Table B.3.3.2.4b: PSO Attainment 2016-20 batch

PSOs/ attainment	PSO1	PSO2
Target	1.57	1.54
Avg attainment	1.48	1.32

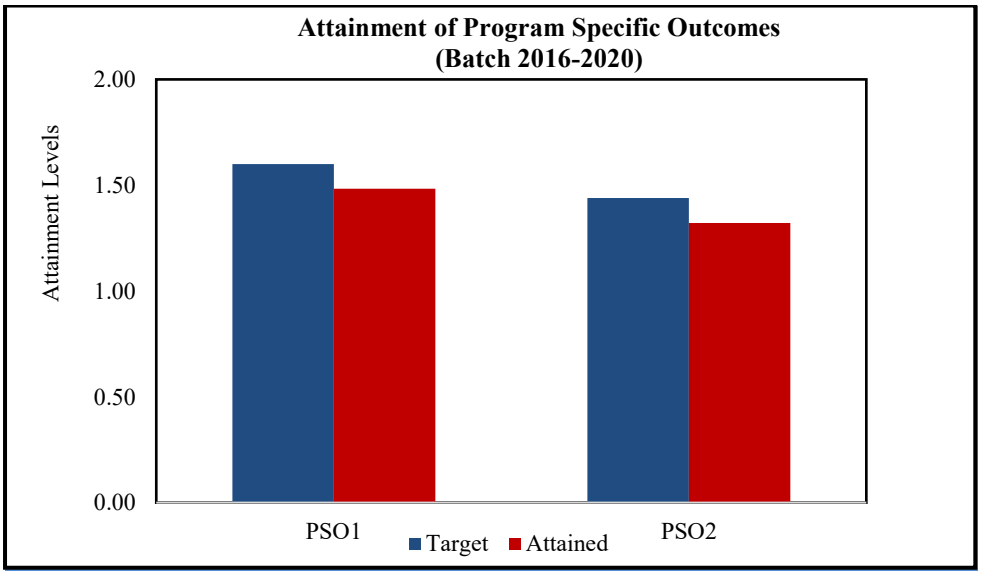


Figure 3.3.2.4b: PSO Attainment 2016-20 batch

Table B.3.3.2.4c: PSO Attainment 2015-19 batch

POs/ attainment	PSO1	PSO2
Target	1.41	1.46
Avg attainment	1.43	1.53

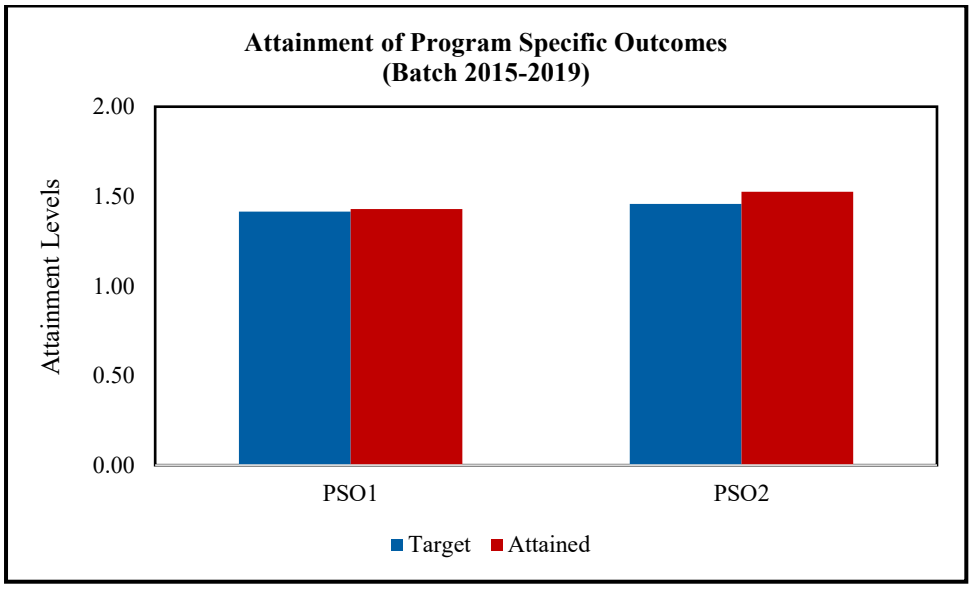


Figure 3.3.2.4c: PSO Attainment 2015-19 batch

CRITERIA 4

Students' Performance

CRITERION 4	STUDENTS' PERFORMANCE	150

Table B.4a: Students' Admission Details

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	CAY (2020-21)	CAYm1 (2019-20)	CAYm2 (2018-19)	CAYm3 (2017-18)	CAYm4 (2016-17)	CAYm5 (2015-16)	CAYm6 (2014-15)
Sanctioned intake of the program (N)	60	60	60	60	60	60	60
Total number of students admitted in first year minus number of students migrated to other programs/institutions plus no. of students migrated to this program (N1)	42	43	61	47	50	48	51
Number of students admitted in 2nd year in the same batch via lateral entry (N2)	NIL	01	NIL	NIL	NIL	NIL	NIL
Separate division students (SNQ-Super Numerary Quota), if applicable (N3)	3	04	04	01	01	03	01
Total number of students admitted in the Program (N1 + N2 + N3)	**45**	**48**	**65**	**48**	**51**	**51**	**52**

CAY- Current Academic Year (2020-21)

CAYm1- Current Academic Year minus 1 = Current Assessment Year (2019-2020)

CAYm2- Current Academic Year minus 2 = Current Assessment Year minus 1 (2018-2019)

CAYm3- Current Academic Year minus 3 = Current Assessment Year minus 2 (2017-2018)

LYG – Last Year Graduate

LYGm1 – Last Year Graduate minus 1

LYGm2 – Last Year Graduate minus 2

4. STUDENT PERFORMANCE (150)

Table B.4b: Successful students without backlogs

Year of entry	N1 + N2 + N3 (As defined above)	Number of students who have successfully graduated without backlogs in any semester/year of study (Without Backlog means no compartment or failures in any semester/year of study)			
		I Year	II Year	III Year	IV Year
CAY (2020-21)	45(42+0+3)				
CAYm1 (2019-20)	48(44+0+4)	34(30+0+4)			
CAY m2 (2018-19)	65(61+0+4)	41(37+0+4)	41(37+0+4)		
CAYm3 (2017-18)	48(47+0+1)	31(30+0+1)	28(27+0+1)	28(27+0+1)	27(26+0+1)
CAYm4 (LYG) (2016-17)	51(50+0+1)	26(25+0+1)	22(22+0+0)	22(22+0+0)	18(18+0+0)
CAYm5 (LYGm1) (2015-16)	51(48+0+3)	39(36+0+3)	23(21+0+2)	22(20+0+2)	21(20+0+1)
CAYm6 (LYGm2) (2014-15)	52(51+0+1)	24(23+0+1)	17(16+0+1)	16(15+0+1)	16(15+0+1)

Table B.4c: Successful students with backlogs

Year of entry	N1 + N2 + N3 (As defined above)	Number of students who have successfully graduated (Students With Backlog in stipulated period of study)			
		I Year	II Year	III Year	IV Year
CAY (2020-21)	45(42+0+3)				
CAYm1 (2019-20)	48(44+0+4)	8(8+0+0)			
CAY m2 (2018-19)	65(61+0+4)	15(15+0+0)	16(16+0+0)		
CAYm3 (2017-18)	48(47+0+1)	09(09+0+0)	11(11+0+0)	11(11+0+0)	12(12+0+0)
CAYm4 (LYG) (2016-17)	51(50+0+1)	19(19+0+0)	20(19+0+1)	16(15+0+1)	20(19+0+1)
CAYm5 (LYGm1) (2015-16)	51(48+0+3)	7(7+0+0)	20(19+0+1)	19(17+0+2)	20(18+0+2)
CAYm6 (LYGm2) (2014-15)	52(51+0+1)	18(18+0+0)	24(24+0+0)	22(22+0+0)	22(22+0+0)

Table B.4d: Successful students without and with backlogs.

Year of entry	N1 + N2 + N3 (As defined above)	Number of students who have successfully graduated (Students Without and With Backlog in stipulated period of study)			
		I Year	II Year	III Year	IV Year
CAY (2020-21)	45(42+0+3)				
CAYm1 (2019-20)	48(44+0+4)	39(35+0+4)			
CAY m2 (2018-19)	65(61+0+4)	56(52+0+4)	57(53+0+4)		
CAYm3 (2017-18)	48(47+0+1)	42(41+0+1)	39(38+0+1)	39(38+0+1)	39(38+0+1)
CAYm4 (LYG) (2016-17)	51(50+0+1)	46(45+0+1)	42(41+0+1)	38(37+0+1)	38(37+0+1)
CAYm5 (LYGm1) (2015-16)	51(48+0+3)	46(45+0+3)	43(40+0+3)	41(38+0+3)	41(38+0+3)
CAYm6 (LYGm2) (2014-15)	52(51+0+1)	42(41+0+1)	41(40+0+1)	38(37+0+1)	38(37+0+1)

4.1 Enrolment Ratio (20)

Enrolment ratio = N1/N

Table B.4.1.1: Enrolment Ratio

Sl. No	Year	N1	N	Enrolment ratio (N1/N)	Marks Obtained
1	**CAY (2020-21)**	45	60	0.75	**16**
2	**CAYm1 (2019-20)**	48	60	0.7833	**18**
3	**CAY m2 (2018-19)**	65	60	1.0833	**20**
4	**CAY m3 (2017-18)**	48	60	0.7833	**18**
Average				**0.84.99=85%**	**18**

4.2. Success Rate in the stipulated period of the program (40)

4.2.1. Success rate without backlogs in any semester/year of study (25)

SI = (Number of students who have graduated from the program without backlog) /(Number of students admitted in the first year of that batch and admitted in 2nd year via lateral entry and separate division,

if applicable).

Average SI = Mean of Success Index (SI) for past three batches

Success rate without backlogs in any year of study = 25 × Average SI

Table B.4.2.1: Success rate without backlogs.

Item	Latest Year of Graduation LYG (2016-17)	Latest Year of Graduation LYGm1 (2015-16)	Latest Year of Graduation LYGm2 (2014-15)
Number of students admitted in the corresponding First Year + admitted in 2nd year via lateral entry and separate division, if applicable	51(50+0+1)	51(48+0+3)	52 (51+0+1)
Number of students who have graduated without backlogs in the stipulated period	18(18+0+0)	21(20+0+1)	16 (15+0+1)
Success Index (SI)	**0.35**	**0.41**	**0.31**
Average SI	**0.36**		
Success rate without backlogs in any year of study = 25 × Average SI =25 X 0.36= 9			

4.2.2. Success rate with backlog in stipulated period of study (15)

SI = (Number of students who graduated from the program in the stipulated period of course duration) / (Number of students admitted in the first year of that batch and admitted in 2nd year via lateral entry and separate division, if applicable)

Average SI = mean of Success Index (SI) for past three batches

Success rate = 15 × Average SI

Table B.4.2.2: Success rate with backlog

Item	Latest Year of Graduation LYG (2016-17)	Latest Year of Graduation LYGm1 (2015-16)	Latest Year of Graduation LYGm2 (2014-15)
Number of students admitted in the corresponding First Year + admitted in 2nd year via lateral entry and separate division, if applicable	51(49+0+1)	51(48+0+3)	52(51+0+1)
Number of students who have graduated without backlogs in the stipulated period	38(37+0+1)	41(39+0+2)	38(37+0+1)
Success Index (SI)	**0.75**	**0.80**	**0.73**
Average SI	**0.76**		
Success rate with backlogs in any year of study = 25 × Average SI =25 X 0.76 = 11.40			

4.3. Academic Performance in Third Year (15)

Academic Performance = 1.5 x Average API (Academic Performance Index)

***API** = ((Mean of 3rd Year Grade Point Average of all successful Students on a 10 point scale) or (Mean of the Percentage of marks of all successful students in Third Year/10)) x (number of successful students/number of students appeared in the examination). Successful students are those who are permitted to proceed to the final year.*

Table B.4.3: Academic Performance in Third Year

Academic Performance	CAYm3 (2017-18)	LYG (2016-17)	LYGm1 (2015-16)
Mean of CGPA or Mean Percentage of all successful students (X)	7.45	6.45	6.58
Total no. of successful students (Y)	39	38	41
Total no. of students appeared in the examination (Z)	39	42	43
API = X* (Y/Z)	**7.46**	**5.84**	**6.27**
Average API = (AP1 + AP2 + AP3)/3	**6.52**		
Academic Performance = **1.5 x Average API = 1.5 X 6.52 = 9.78**			

4.4. Academic Performance in Second Year (15)

Academic Performance Level = 1.5 x Average API (Academic Performance Index)

***API** = ((Mean of 2nd Year Grade Point Average of all successful Students on a 10 point scale) or Mean of the percentage of marks of all successful students in Second Year/10)) x (number of Successful students/number of students appeared in the examination)Successful students are those who are permitted to proceed to the Third year.*

Table B.4.4: Academic Performance in Second Year

Academic Performance	CAYm2 (2018-19)	CAYm3 (2017-18)	LYG (2016-17)
Mean of CGPA or Mean Percentage of all successful students (X)	6.99	6.95	6.13
Total no. of successful students (Y)	56	39	42
Total no. of students appeared in the examination (Z)	56	42	46
API = X* (Y/Z)	**6.99**	**6.45**	**5.60**
Average API = (AP1 + AP2 + AP3)/3	**6.35**		
Academic Performance = **1.5 x Average API= 1.5 X 6.35 = 9.52**			

4.5 Placement, Higher studies and Entrepreneurship (40)

Assessment Points = 40 X Average placement

Table B.4.5: Placement, Higher Studies and Entrepreneurship

Item	CAYm3 (2017-18)	LYG (2016-17)	LYGm1 (2015-16)	LYGm2 (2014-15)
Total No. of Final Year Students (N)	39	38	41	38
No. of Students placed in companies or Government Sector (x)	15	14	20	20
No. of students admitted to higher studies with valid qualifying score (GATE or equivalent state or National level Tests, GRE, GMAT etc.) (y)	01	04	04	06
No. of students turned entrepreneur in engineering/technology (z)	-	01	01	01
x + y + z =	16	19	25	27
Placement Index: (x + y + z) / N	0.41	0.5	0.609	0.71
Average placement = (P1 + P2 +P3) / 3	**0.606**			
Assessment Points = 40 X Average placement = 40 X 0.606 = 24.26				

4.5a. Provide the placement data in the below mentioned format with the name of the program and the assessment year:

Table B.4.5.1: Placement Data 2020-21

Aeronautical Engineering- CAY (2020-21)				
Sl. No.	**Name of the student placed**	**Enrolment No.**	**Name of the Employer**	**Appointment Letter reference No. With date**
1	ABHIJEET	1SJ17AE002	Accenture	11/3/2021
2	AKASH HA	1SJ17AE004	Quess Corp. Ltd	11/25/2021
3	AMRUTHA R	1SJ17AE006	Mahindra Aerospace	04/10/2021.
4	AVESODDIN SIDDIQUI FAHIMODDIN SIDDIQU	1SJ17AE009	Safran Engineering Service	
5	C H LOKESH	1SJ17AE012	Dassault Systemes	10/11/2021
6	CHANDANA N	1SJ17AE013	HAL, Internship	12/27/2021
7	ERAGOWDA H G	1SJ17AE014	TLE Technology	10/14/2021
8	JASON JEEVAN C J	1SJ17AE017	TE Connectivity	10/14/2021
9	LOCHANA BM	1SJ17AE020	Innomech Aerospace Toolings Pvt Ltd	9/2/2021
10	MEGHA MANNIKERI	1SJ17AE025	Infosys	10/21/2021
11	MOHAN D C	1SJ17AE027	Capgemini	3/3/2022
12	NETHRA J	1SJ17AE028	TCS	8/19/2021

13	PAVAN KALYAN B V	1SJ17AE032	TLE Technology	10/14/2021
14	PRUTHVIJA P	1SJ17AE033	Innomech Aerospace Toolings Pvt Ltd	9/2/2021
15	SACHINREDDY	1SJ17AE035	State Govt Job	29/1/2021
16	SRIDEVI M HERLE	1SJ17AE041	CYIENT	4/3/2022
17	JAHNAVI R	1SJ17AE016	M Tech, RVCE	22/1/2022
18	MAGDUM ARIHANT RAJGONDA	1SJ17AE021	E-Dall System & Service PVT Ltd	12/2/2021
19	SANDEEP D	1SJ17AE036	CGI Info Systems	1/31/2022
20	SATISH KUMAR H	1SJ17AE039	HP	12/2/2022
21	SIDDHARTH CHANDRA CHOUDHARY	1SJ17AE040	Cognizant	12/22/2021
22	SUHAS C	1SJ17AE044	ProSIM R&D Pvt. Ltd.	12/27/2021
23	BHARATH B	1SJ17AE011	Axis Cades	02/24/2022
24	NIHAL N	1SJ17AE029	TCS	12/10/2021
25	NISHAT MOMIN	1SJ17AE031	Agdhi	12/29/2021
26	SANDEEP N	1SJ17AE037	MBA, Reva University	11/15/2021
27	NANDAN KUMAR	1SJ17AE049	Multiplex Drone Pvt Ltd	21/2/2022

Table B.4.5.2: Placement Data 2019-20

Aeronautical Engineering- CAYm1 (2019-20)				
Sl. No	**Name of the student placed**	**Enrolment No.**	**Name of the Employer**	**Appointment Letter reference No. With date**
1	A N R GOWDA	1SJ16AE001	RUAS, Bengaluru	31/07/2021
2	ASHPAK	1SJ16AE007	Allegis Ltd	1/10/2021
3	BHUVAN K	1SJ16AE009	Coventry University.UK	19/03/2021
4	DARSHAN N	1SJ16AE012	Gas Turbine Research Establishment	23/04/2021
5	HIDAYATHULLA	1SJ16AE015	Sun Rise Biz tech Systems	5/07/2021
6	GAWAI TUSHAR VILAS	1SJ16AE014	Allegis	31/07/2021
7	KOMALESH B E	1SJ16AE019	Exigent Group Ltd	26/05/2021
8	KOTRESH VG	1SJ16AE020	NOVOLYTICS	18/01/2022
9	LAKSHMI NARASIMHA R	1SJ16AE021	Q SPIDER	10/12/2021
10	MANUGOWDA	1SJ16AE025	Sericulture Dept, GOK	
11	NARENDRA R	1SJ16AE027	University Of Dayton, USA	17/12/2020
12	NAVEEN M SAJJAN	1SJ16AE029	Verzeo	11/08/2021
13	SAI TULASI NEHASHREE V M	1SJ16AE036	Cap Gemini	23/11/2021
14	SAKSHAM MUTREJA	1SJ16AE037	Amtex Software Solution Pvt Ltd	26/04/2021
15	SANGITA MULLICK	1SJ16AE038	Altran Technologies	11/02/2021
16	SATA JAHNAVI TARUNKUMAR	1SJ16AE041	Akka Technologies	1/02/2022
17	GANNE SHILPA GOVIND	1SJ16AE044	Cap Gemini	23/11/2021
18	SUJEETH P	1SJ16AE045	IBM	20/08/2021

19	VANDANA K N	1SJ16AE047	ADE	07/11/2021
20	YASHWANT S	1SJ16AE049	S&I Engineering Solution Pvt Ltd	19/10/2020
21	ASHUTOSH KUMAR SAHU	1SJ16AE050	XTENTICS	02/09/2021

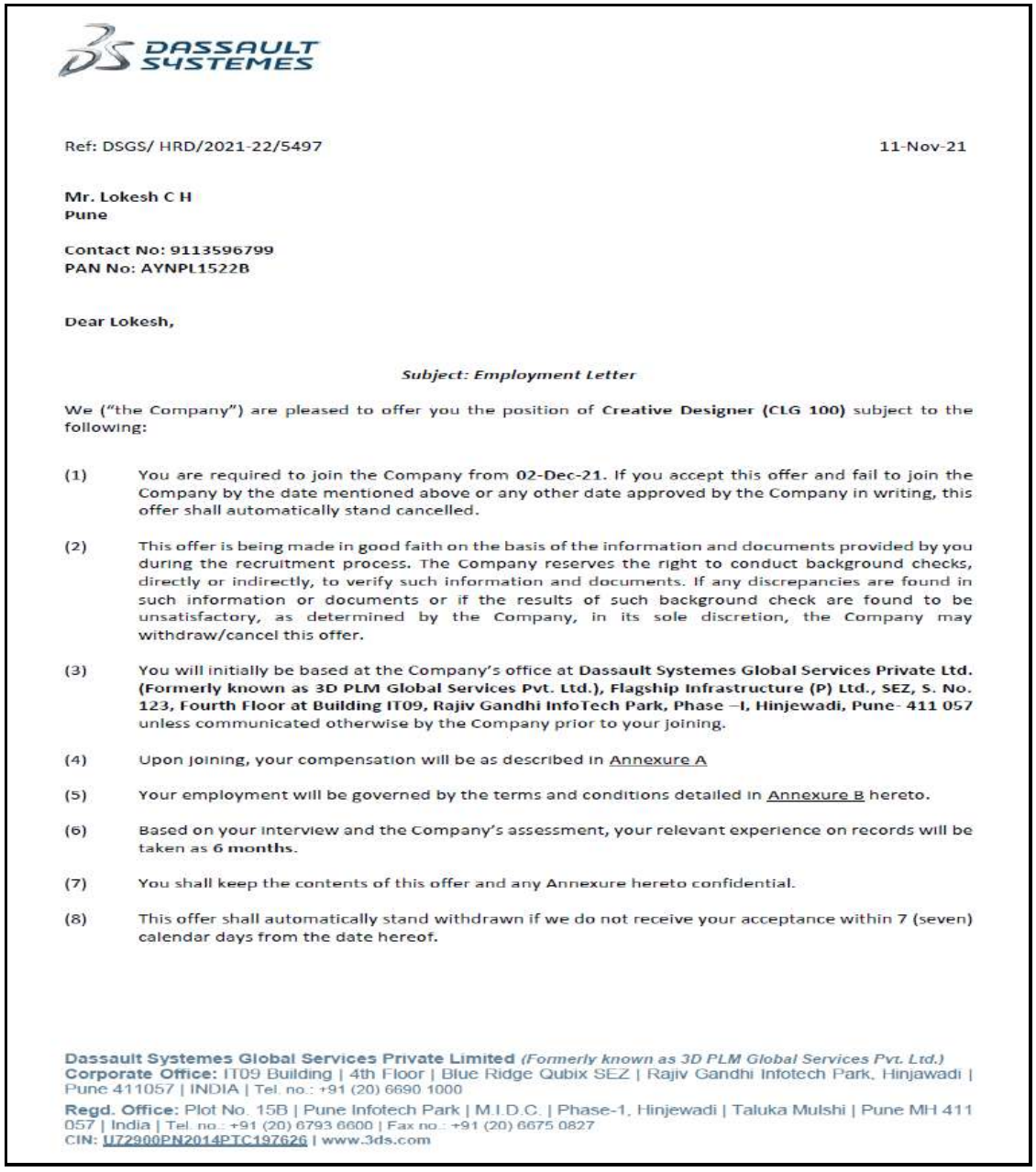
Table B.4.5.3: Placement Data 2018-19

Aeronautical Engineering- CAYm2 (2018-19)				
SL NO	**Name of the student placed**	**Enrolment No.**	**Name of the Employer**	**Appointment Letter reference No. With date**
1	AJITH PATIL	1SJ15AE001	MBA, RUAS, Bengaluru	14/01/2022
2	CHAITRA. B. R	1SJ15AE005	TCS	20/09/2018
3	CHANDANA	1SJ15AE006	UMAC	28/06/2019
4	CHATURVED S	1SJ15AE007	Gopalan Tech Fabs Pvt	01/02/2020
5	DHANUSH. G J	1SJ15AE011	TCS	20/09/2018
6	G. VISHNU	1SJ15AE013	INFOSYS	05/11/2019
7	GOWTHAM R NAZRE	1SJ15AE015	Kingston University, UK	15/12/2020
8	LAKSHITHA P	1SJ15AE017	Srinivas University, Mangalore	22/01/2021
9	KARTHIK G R	1SJ15AE016	Fortune Plastech	01/07/2021
10	MANJUNATH PATIL	1SJ15AE018	TCS	20/09/2018
11	MANOJ KUMAR R S	1SJ15AE019	UMLAUT	04/10/2019
12	NIHARIKA. B	1SJ15AE023	TCS	10/06/2019
13	NITHIN S M	1SJ15AE025	ADE	13/02/2020
14	PATIL JAYANT VIJAYKUMAR	1SJ15AE027	Inspira Enterprige LTD	27/12/21
15	POORNANANDA T	1SJ15AE029	Continental	01/10/2021
16	PRIYANKA SINGH	1SJ15AE030	CAPGEMINI	24/09/2021
17	RAGHAVENDRA	1SJ15AE031	M- DRONE	02/04/2019
18	RAMYA R	1SJ15AE032	JKM HR	23/09/2019
19	SANTHOSH GAUTHAM	1SJ15AE037	Lewis University, USA	10/11/2021
20	SUSHANTH GOWDA B C	1SJ15AE043	Cap Gemini	08/06/2019
21	SWATHI S ACHARYA	1SJ15AE044	Quest	23/12/2019
22	TANUJA. M. S	1SJ15AE045	TCS	20/09/2018
23	VAISHNAVI P	1SJ15AE048	Anglia Ruskin University, UK	17/07/2020
24	VINUTH N	1SJ15AE051	Cap Gemini	23/09/2019
25	VIVEK K S	1SJ15AE052	International University of Applied Science, Germany	01/09/2021

Table B.4.5.4: Placement Data 2017-18

Aeronautical Engineering- CAYm3 (2017-18)				
SL NO	**Name of the student placed**	**Enrolment No.**	**Name of the Employer**	**Appointment Letter reference No. With date**
1	AFREEN ANJUM	1SJ14AE002	Sonovision	06/06/2019
2	AKSHAY KUMAR C	1SJ14AE003	Cades Studec Technologies	24/09/2018
3	AKSHAYRAJ. N	1SJ14AE004	RUAS, Bengaluru	28/09/2018
4	ARAVIND REDDY	1SJ14AE006	TCS	16/10/2018
5	ARUN SUNNY.A. R	1SJ14AE007	Arden University	31/05/2019
6	BINDHU L	1SJ14AE011	BELCAN	24/11/2021
7	CHETHAN	1SJ14AE012	DIBS	27/02/2020
8	C SHIVA PRASAD	1SJ14AE013	PCS Global	31/01/2019
9	DHARANESH VN	1SJ14AE015	Cades Studec Technologies	24/09/2018
10	GURUSHANTANA GOWDA	1SJ14AE018	Axis cades	31/08/2018
11	KIRAN I DEVAPUR	1SJ14AE019	TCS	14/01/2019
12	MANOJ J	1SJ14AE025	Cades Studec Technologies	26/11/2018
13	MUBEENAHMAD M MUDDEBIHAL	1SJ14AE028	ENAC, France	29/03/2019
14	NANDHA KUMAR KN	1SJ14AE029	Alten	06/12/2018
15	PAVAN REDDY A	1SJ14AE033	P3 Consulting Engg Pvt Ltd	13/12/2018
16	PAVAN.B. V	1SJ14AE034	IUBH University of Applied Science, Germany	01/09/2019
17	PAVAN T	1SJ14AE035	CapGemini	25/03/2019
18	POOJA	1SJ14AE036	ACCENTURE	29/11/2019
19	PRASHANTH R	1SJ14AE038	Sonovision	12/07/2019
20	RAKESH K	1SJ14AE041	Alten India Pvt Ltd	09/05/2019
21	SHAHID AMEEN KHAN	1SJ14AE044	Leap Aeronautics	19/09/2019
22	SHREYAS.G. R	1SJ14AE046	VTU VIAT, Bengaluru	11/10/2018
23	SHUBADA	1SJ14AE047	CapGemini	08/07/2019
24	SUHAS.B. L	1SJ14AE050	RMIT University, Australia	01/03/2021
25	VENKATSH HR	1SJ14AE053	Home Credit Finance Pvt Ltd	01/10/2019
26	VINAY MR	1SJ14AE054	Collins India Enterprises Pvt Ltd	18/06/2019

Figures 4.5.1 to 4.5.3 shows the samples of offer letters from industries



DASSAULT SYSTEMES

Ref: DSGS/ HRD/2021-22/5497 11-Nov-21

Mr. Lokesh C H
Pune

Contact No: 9113596799
PAN No: AYNPL1522B

Dear Lokesh,

Subject: Employment Letter

We ("the Company") are pleased to offer you the position of **Creative Designer (CLG 100)** subject to the following:

(1) You are required to join the Company from **02-Dec-21**. If you accept this offer and fail to join the Company by the date mentioned above or any other date approved by the Company in writing, this offer shall automatically stand cancelled.

(2) This offer is being made in good faith on the basis of the information and documents provided by you during the recruitment process. The Company reserves the right to conduct background checks, directly or indirectly, to verify such information and documents. If any discrepancies are found in such information or documents or if the results of such background check are found to be unsatisfactory, as determined by the Company, in its sole discretion, the Company may withdraw/cancel this offer.

(3) You will initially be based at the Company's office at **Dassault Systemes Global Services Private Ltd. (Formerly known as 3D PLM Global Services Pvt. Ltd.), Flagship Infrastructure (P) Ltd., SEZ, S. No. 123, Fourth Floor at Building IT09, Rajiv Gandhi InfoTech Park, Phase –I, Hinjewadi, Pune- 411 057** unless communicated otherwise by the Company prior to your joining.

(4) Upon joining, your compensation will be as described in Annexure A

(5) Your employment will be governed by the terms and conditions detailed in Annexure B hereto.

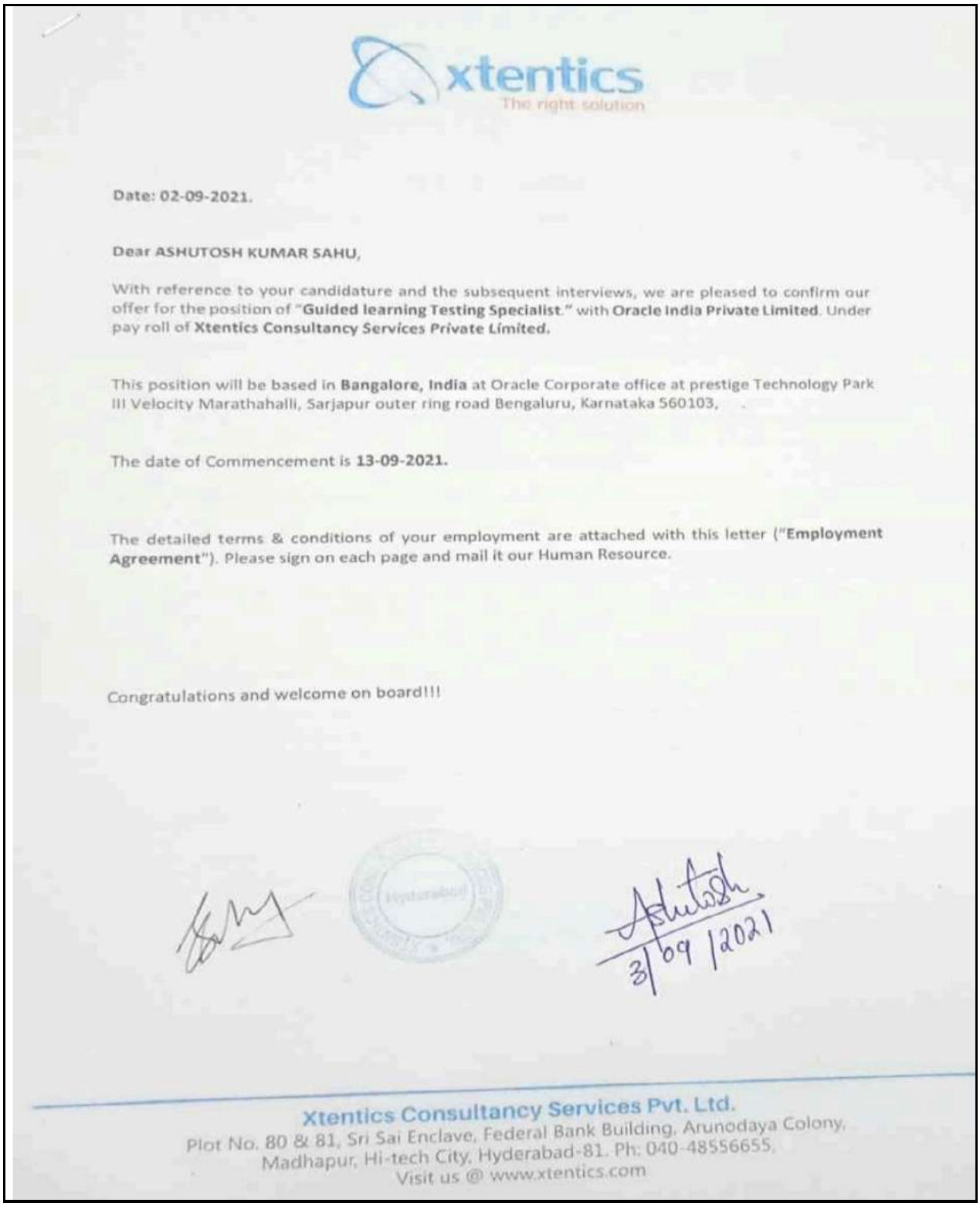
(6) Based on your interview and the Company's assessment, your relevant experience on records will be taken as **6 months**.

(7) You shall keep the contents of this offer and any Annexure hereto confidential.

(8) This offer shall automatically stand withdrawn if we do not receive your acceptance within 7 (seven) calendar days from the date hereof.

Dassault Systemes Global Services Private Limited *(Formerly known as 3D PLM Global Services Pvt. Ltd.)*
Corporate Office: IT09 Building | 4th Floor | Blue Ridge Qubix SEZ | Rajiv Gandhi Infotech Park, Hinjawadi | Pune 411057 | INDIA | Tel. no.: +91 (20) 6690 1000
Regd. Office: Plot No. 15B | Pune Infotech Park | M.I.D.C. | Phase-1, Hinjewadi | Taluka Mulshi | Pune MH 411 057 | India | Tel. no.: +91 (20) 6793 6600 | Fax no.: +91 (20) 6675 0827
CIN: U72900PN2014PTC197626 | www.3ds.com

Figure 4.5.1: Sample of Offer Letter from Dassault Systems



xtentics
The right solution

Date: 02-09-2021.

Dear ASHUTOSH KUMAR SAHU,

With reference to your candidature and the subsequent interviews, we are pleased to confirm our offer for the position of "**Guided learning Testing Specialist.**" with **Oracle India Private Limited**. Under pay roll of **Xtentics Consultancy Services Private Limited.**

This position will be based in **Bangalore, India** at Oracle Corporate office at prestige Technology Park III Velocity Marathahalli, Sarjapur outer ring road Bengaluru, Karnataka 560103,

The date of Commencement is **13-09-2021.**

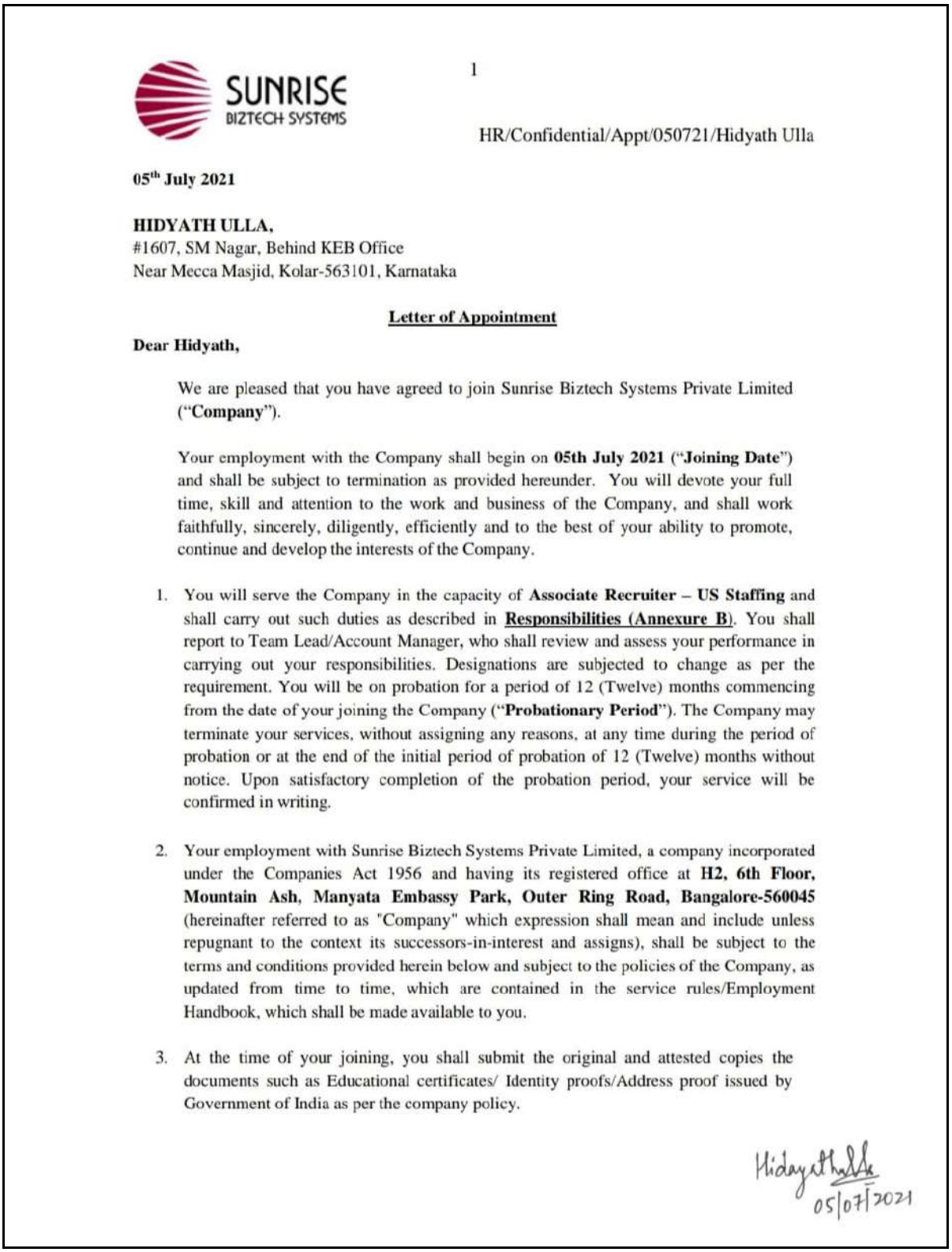
The detailed terms & conditions of your employment are attached with this letter (**"Employment Agreement"**). Please sign on each page and mail it our Human Resource.

Congratulations and welcome on board!!!

Ashutosh
3/09/2021

Xtentics Consultancy Services Pvt. Ltd.
Plot No. 80 & 81, Sri Sai Enclave, Federal Bank Building, Arunodaya Colony,
Madhapur, Hi-tech City, Hyderabad-81. Ph: 040-48556655.
Visit us @ www.xtentics.com

Figure 4.5.2: Sample of Offer Letter from XTENTICS Consultancy service PVT LTD



SUNRISE
BIZTECH SYSTEMS

1

HR/Confidential/Appt/050721/Hidyath Ulla

05th July 2021

HIDYATH ULLA,
#1607, SM Nagar, Behind KEB Office
Near Mecca Masjid, Kolar-563101, Karnataka

Letter of Appointment

Dear Hidyath,

We are pleased that you have agreed to join Sunrise Biztech Systems Private Limited ("**Company**").

Your employment with the Company shall begin on **05th July 2021** ("**Joining Date**") and shall be subject to termination as provided hereunder. You will devote your full time, skill and attention to the work and business of the Company, and shall work faithfully, sincerely, diligently, efficiently and to the best of your ability to promote, continue and develop the interests of the Company.

1. You will serve the Company in the capacity of **Associate Recruiter – US Staffing** and shall carry out such duties as described in **Responsibilities (Annexure B)**. You shall report to Team Lead/Account Manager, who shall review and assess your performance in carrying out your responsibilities. Designations are subjected to change as per the requirement. You will be on probation for a period of 12 (Twelve) months commencing from the date of your joining the Company ("**Probationary Period**"). The Company may terminate your services, without assigning any reasons, at any time during the period of probation or at the end of the initial period of probation of 12 (Twelve) months without notice. Upon satisfactory completion of the probation period, your service will be confirmed in writing.

2. Your employment with Sunrise Biztech Systems Private Limited, a company incorporated under the Companies Act 1956 and having its registered office at **H2, 6th Floor, Mountain Ash, Manyata Embassy Park, Outer Ring Road, Bangalore-560045** (hereinafter referred to as "Company" which expression shall mean and include unless repugnant to the context its successors-in-interest and assigns), shall be subject to the terms and conditions provided herein below and subject to the policies of the Company, as updated from time to time, which are contained in the service rules/Employment Handbook, which shall be made available to you.

3. At the time of your joining, you shall submit the original and attested copies the documents such as Educational certificates/ Identity proofs/Address proof issued by Government of India as per the company policy.

Hidyath Ulla
05/07/2021

Figure 4.5.3 Sample of Offer Letter from TLE Technology

4.6 Professional Activities (20)

4.6.1 Professional Societies/Chapters and organizing & Engineering Events (5)

The following are the Professional Societies Show casing a variety of academic activities such as techno quiz, paper presentation, and technical debates, group discussions, student seminars and workshops.

Table B.4.6.1: Events/Activities

Sl. No.	Name of Professional Societies/Chapters	Year of Establishment	Academic Year	No. Of students Enrolled
1	IFERP (Institute for Engineering Research And profession)	2000	2020-21	18
2.	Aeronautical Society of India (AeSI)	2022	2021-22	107

1. A full day workshop on Agile Systems was conducted under the aegis of Department of Aeronautical Engineering (AED) at SJCIT by TCS, Bangalore on 28th Oct 2017. Faculty and about 20 students of the department actively participated in the workshop.

2. A 2-day workshop on HLI Model Sport Aero-Modeling was conducted by Department of Aeronautical Engineering on 29th-30th April, 2017 at SJCIT. About 66 students of the department actively participated in the event.

3. Intercollegiate Technical Fest “AVION” is conducted every year to showcase the technical talents of students in the field of Aeronautical Field. About 150 -200 students from various Engineering colleges have participated in the fest,

4.6.2 Publication of Technical Magazines, Newsletters etc., (5)

SJCIT encourages publication of student magazines both at the college level and department level. Specific Support services and facilities available are:

- Release of College Magazine during First Year Inauguration function for fresh BE entrants every year, ensuring continuity of the magazine.
- Formation of Magazine Committee at the college level to publish the college magazine “NANDI TARANGA” annually which showcases talents of students and faculty.

- The nominated committee members are responsible for bringing out the annual magazine with the following plan of action.
- The magazine committee is rotated among departments every years to enhance the publishing skills and to inculcate creative editing skills among students through adobe Photoshop.

Details of the articles for the year 2018 are given in Table B4.6.2a.

Table B.4.6.2a: Publication of Technical Magazines, Newsletters

SL No	Name of the Student	USN	Name of the Article	Editors	Magazine	Year
01	RAGHAVENDRA	1SJ15AE031	NINU ATTAGA NANU	PROF.M. NAGENDRAKUMAR	NANDI TARANGA	2018
02	RAGHAVENDRA	1SJ15AE031	NAADIDHU KANNADA	PROF.M. NAGENDRAKUMAR	NANDI TARANGA	2018
03	RAMYA R	1SJ15AE032	STEALTH TECHNOLOGY	PROF.M. NAGENDRAKUMAR	NANDI TARANGA	2018
04	NIHARIKA.B	1SJ15AE023	ART GALLERY	PROF.M. NAGENDRAKUMAR	NANDI TARANGA	2018

Figure 4.6.1: Various editions of NANDI TARANGA College Magazine

Figure 4.6.2: Release of 2017 editions of NANDI TARANGA College Magazine

The following student(s) Presented Technical paper during their program of study are listed in Table B.4.6.2b

Table B.4.6.2: Technical papers presented by students during their program of study.

Sl. No.	Title	Authors	Year of Publication	Name of the Publisher
1	Effect of Stall on Blended wing Body Aircraft.	KOMALESH B E DARSHAN N	2019	International Journal of Latest Trends in Engineering and Technology
2	A Comprehensive Study on Space Debris, Threats Posed by Space Debris and Removal Techniques.	SANGITA MULLICK JHANVI THARUN SATA YASHWANTH SRINIVAS	2019	International Conference on Emerging Trends in Smart Technologies
3	PID Controller Design for Dynamic Motion of an Aircraft.	PANKAJ KUMAR CHATHURVED S CHANDANA M RAMYA R	2019	International Conference on Emerging Trends in Smart Technologies
4	Study of Indian Unmanned Aerial Vehicles	RAMYA R	2018	International Journal of Advanced Research Trends in Engineering and Technology
5	Numerical Simulation of Rocket Launch Vehicle	DHANUSH G J MANJUNATH DEEPAK B S AJITH PATIL J R	2019	Social Science Research Network
6	Comprehensive Characterization of Carbon Fiber Reinforced Epoxy Composites for Aerospace Application.	MANOJ KUMAR R S	2019	International Conference on Emerging Research in Civil, Aeronautical and Mechanical Engineering
7	Internal Flow Analysis on Sweeping Jet Actuator.	SUSHANT GOWDA B C VINUTH N POORNANANDA T	2019	The International Journal of Recent Technology and Engineering
8	Numerical Simulation of Rocket Launch Vehicle.	DHANUSH G J MANJUNATH DEEPAK B S AJITH PATIL J R	2019	International Conference on Emerging Trends in Smart Technologies
9	Internal Flow Analysis on Sweeping Jet Actuator	SUSHANT GOWDA B C VINUTH N POORNANANDA T DHANUSH G J	2019	International Conference on Emerging Trends in Smart Technologies
10	Mechanical Characterization of Carbon Fibre reinforced Epoxy Polymer	TEJASHWINI C G NIHARIKA B MANOJ KUMAR R S	2019	International Conference on Emerging Trends in Smart Technologies

11	Conceptual design of 180-Seater Passenger Aircraft	VINAY M R KRUTHIKA H V SHAHEED AMEEN KHAN	2018	International Journal of Advanced Research Trends in Engineering and Technology
13	Design and Analysis of Main Rotor Blades of a Utility Helicopter During Hovering	SHAHID AMEEN KHAN	2018	International Journal of Advanced Research Trends in Engineering and Technology
14	Conceptual design of 180-Seater Passenger Aircraft	VINAY M R KRUTHIKA H V SHAHEED AMEEN KHAN	2018	International Conference On Emerging Trends In Engineering Science And Technology
15	Conceptual design of 180-Seater Passenger Aircraft.	VINAY M R KRUTHIKA H V SHAHEED AMEEN KHAN	2017	International Journal of Innovative Research in Technology and Science
16	Speech Input Controlling of Unmanned Aerial Vehicles.	MANOJ. J	2017	Innovation of Engineering Technology

4.6.3 Participation in Inter-Institute events by the students of the program of Study (10)

The following are the student(s) participate in Inter-Institute events during the program of study

Table B.4.6.3a: Participation in Inter-Institute Events (2014-21)

Sl. No.	Name of the Student	USN	Title	Date	Place
1.	ASHUTOSH KUMAR SAHU	1SJ16AE050	Fundamental and applications of shock waves	08/11/2019	Department of Mechanical and Aerospace Engineering BMSCE, Bengaluru
2.	JAHNAVI SATA	1SJ16AE041			
3.	SANGEETHA MULLIK	1SJ16AE038	Fundamental and applications of shock waves		
4.	S YESHWANTH	1SJ16AE049			
5.	S YESHWANTH	1SJ16AE049	Seminar and workshop on Aero vision 2019	14/10/2019	NMIT Bengaluru
6.	ASHUTOSH KUMAR SAHU	1SJ16AE050			
7.	GANNE SHILPA GOVIND	1SJ16AE044			
8.	RACHANA M	1SJ16AE033			
9.	NISARGA V S	1SJ16AE031			
10.	ABILASH M	1SJ16AE002			
11.	MANOJ B E	1SJ16AE023			
12.	SATISH KUMAR	1SJ17AE039			

13.	ASHIK RAM GOWDA	1SJ16AE006	Aero India International Seminar 2019	17/02/2019 18/02/2019	Royal Orchid Convention Centre, Bengaluru
14.	MEGHA MANNIKERI	1SJ17AE025	Seminar On Skill Development For Creation Of World Class Aerospace And Aviation Ecosystem	17/08/2018	DRVM GAGTE Convention Centre Bengaluru
15.	NETRA J	1SJ17AE028			
16.	SAI TULASI NEHASHREE	1SJ16AE036			
17.	JAHNAVI SATA	1SJ16AE041			
18.	SANGEETHA MULLIK	1SJ16AE038			
19.	S YESHWANTH	1SJ16AE049			
20.	DHARANESH V N	1SJ14AE015			
21.	AKSHAY KUMAR C	1SJ14AE003			
22.	RAGHAVENDRA	1SJ15AE031			
23.	AFREEN ANJUM	1SJ14AE002	Seminar on Methods of Computation in Fluid Flow Heat and Mass Transfer Problems	14/03/2017 15/03/2017	Acharya Institute of Technology Bengaluru
24.	ARAVIND REDDY	1SJ14AE006			
25.	KIRAN I DEVAPUR	1SJ14AE019			
26.	MEGHASHREE B R	1SJ14AE026			
27.	DHARANESH VN	1SJ14AE015			
28.	AFREEN ANJUM	1SJ14AE002			
29.	CHATURVED S	1SJ15AE007	Seminar on Aerostats and Airships	14/03/2017 15/03/2017	EWCE Bengaluru
30.	ARIF T D	1SJ14AE004			
31.	NIHARIKA B	1SJ14AE023			
32.	RAMYA R	1SJ14AE032			
33.	CHAITRA B R	1SJ14AE005			
34.	G VISHNU	1SJ14AE013			
35.	NAVEEN KUMAR G K	1SJ14AE021			
36.	DHANUSH G J	1SJ14AE011			
37.	RAGHAVENDRA	1SJ14AE031			
38.	DEEPAK B J	1SJ14AE009			
39.	SRIVATSA R	1SJ14AE041			
40.	MANSOOR M	1SJ14AE020			
41.	VINAY TEMKAR S	1SJ14AE050			
42.	DHARANESH VN	1SJ14AE015			
43.	RAKESH K	1SJ14AE041			
44.	C SHIVAPRASAD	1SJ14AE013			
45.	AKSHAY RAJ N	1SJ14AE004			
46.	AKSHAY KUMAR C	1SJ14AE003			
47.	MANOJ J	1SJ14AE025			
48.	GURUSHANTANA GOWDA	1SJ14AE018			

49.	DHARANESH VN	1SJ14AE015			
50.	RAKESH K	1SJ14AE041			
51.	C SHIVAPRASAD	1SJ14AE013			
52.	ASHUTOSH KUMAR SAHU	1SJ16AE050	Data Platform Summit 2018 (DPS)	07/08/2018 11/08/2018	SQLMAESTROS/ REDGATE
53.	G VISHNU	1SJ14AE013			

AERO INDIA 2019
INTERNATIONAL SEMINAR
18 – 19 February 2019

Dr G Satheesh Reddy
Secretary, Department of Defence R&D & Chairman, DRDO
Chairman, Seminar Advisory Committee

Dr (Ms) Tessy Thomas
DS & Director General (Aeronautical Systems)
Advisor

Mr M Z Siddique
Distinguished Scientist
Director GTRE
Chairman
Seminar Organising Committee

Mr Sreelal Sreedhar, Sc 'H'
GTRE
Vice Chairman
Seminar Organising Committee

Wg Cdr C R Vaidyanathan (Retd)
Secretary
Seminar Organising Committee

Dr Rajeev Jain, Sc 'G'
Treasurer
Seminar Organising Committee

CERTIFICATE OF PARTICIPATION

This is to certify that Mr. Ashik Ram Gowda, of SJCIT has attended the Aero India International Seminar 2019 held on 18 and 19 Feb 2019 at Royal Orchid Convention Centre, Yelahanka, Bangalore.

AIS-2019 GTRE

T. Dasikan
Office cum Accounts Manager
Aero India Seminar 2019
GTRE, Bangalore

Seminar Organising Committee, Aero India 2019
Gas Turbine Research Establishment (GTRE)
DRDO, Ministry of Defence
Govt. of India , C.V. Raman Nagar
Bengaluru-560 093, Karnataka, India

Tel: +91-80-25040292
Fax: +91-80-25243034
Mobile - 9740864000
Email: secretary@aeroindiaseminar.com
Web : aeroindiaseminar.com

Figure 4.6.3: Sample of certificate - Inter-Institute event.

ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೆಳಗಾವಿ

Visvesvaraya Technological University, Belagavi

Regional Office, Bengaluru

CERTIFICATE OF PARTICIPATION

This is to certify that Dr./ Prof. / Mr. / Ms. MANOJ KUMAR R S Dept. of CENTRE OF EXCELLENCE, VTU RO, BENGALURU has attended the workshop on "(A) HISTORICAL PHILOSOPHICAL AND SOCIETAL PERSPECTIVES (B) THE EVOLUTION OF THERMODYNAMICS IN THE 19TH CENTURY" held on 24.07.2019 at V T U Regional Office, Bengaluru

REGIONAL DIRECTOR

Figure 4.6.4: Sample Certificate - Inter-Institute events

॥ ज्ञं इदं गुरुपदेव ॥

Sri Adichunchanagiri Mahasamsthana Math

Sri Kshetra Adichunchanagiri, Nagamangala Taluk, Mandya District.

JNANA - VIJNANA - TANTRAJNANA MELA - 2020

Certificate

This is to certify that Mr. / ~~Ms.~~ MANUGOWDA. K. S. of SJCIT

has participated in "Jnana-Vijnana-Tantrajnana Mela - 2020" which was held on 19th and 20th february 2020 at Sri Kshetra Adichunchanagiri.

Sri Sri Dr. Nirmalanandanatha Mahaswamiji
Pontiff

20.02.2020
Sri Kshetra

Figure 4.6.5: Sample Certificate - Inter-Institute events.

The following students have obtained online certification courses during the program of study.

Table B.4.6.3b: Participation in NPTEL Online Certification. (2014-21)

Sl. No.	Name of the Student	USN	Title	Date	Place
1	SUJAY B HIREMATH	1SJ19AE036	"NPTEL Online Certification in **AIRCRAFT STABILITY AND CONTROL**.	Jul-Oct 2021 (12 Week course)	IIT Kanpur
2	MUZAMMIL PASHA S B	1SJ19AE015	"NPTEL Online Certification in **INTRODUCTION TO AIRCRAFT DESIGN"**	Jul-Oct 2021 (12 Week course)	IIT Bombay
3	NACHIKET S	1SJ19AE016	"NPTEL Online Certification in **INTRODUCTION TO AIRCRAFT DESIGN"**	Jul-Oct 2021 (12 Week course)	IIT Bombay
4	PRUTHVIJA P	1SJ17AE033	"NPTEL Online Certification in **AIRCRAFT MAINTENANCE**.	Jan-Feb 2020 (4 Week course)	IIT Kanpur
5	ASHPAK KAJOORI	1SJ16AE007	"NPTEL Online Certification in **ADVANCE AIRCAFT MAINTENANCE**.	Feb-Apr 2019 (8 Week course)	IIT Kanpur
6	KOMALESH B E	1SJ16AE019	"NPTEL Online Certification in **ADVANCE AIRCAFT MAINTENANCE**"	Feb-Apr 2019 (8 Week course)	IIT Kanpur
7	DARSHNA N	1SJ16AE012	"NPTEL Online Certification in **ADVANCE AIRCAFT MAINTENANCE"**	Feb-Apr 2019 (8 Week course)	IIT Kanpur

Figure 4.6.6: Sample certificate of NPTEL online programme.

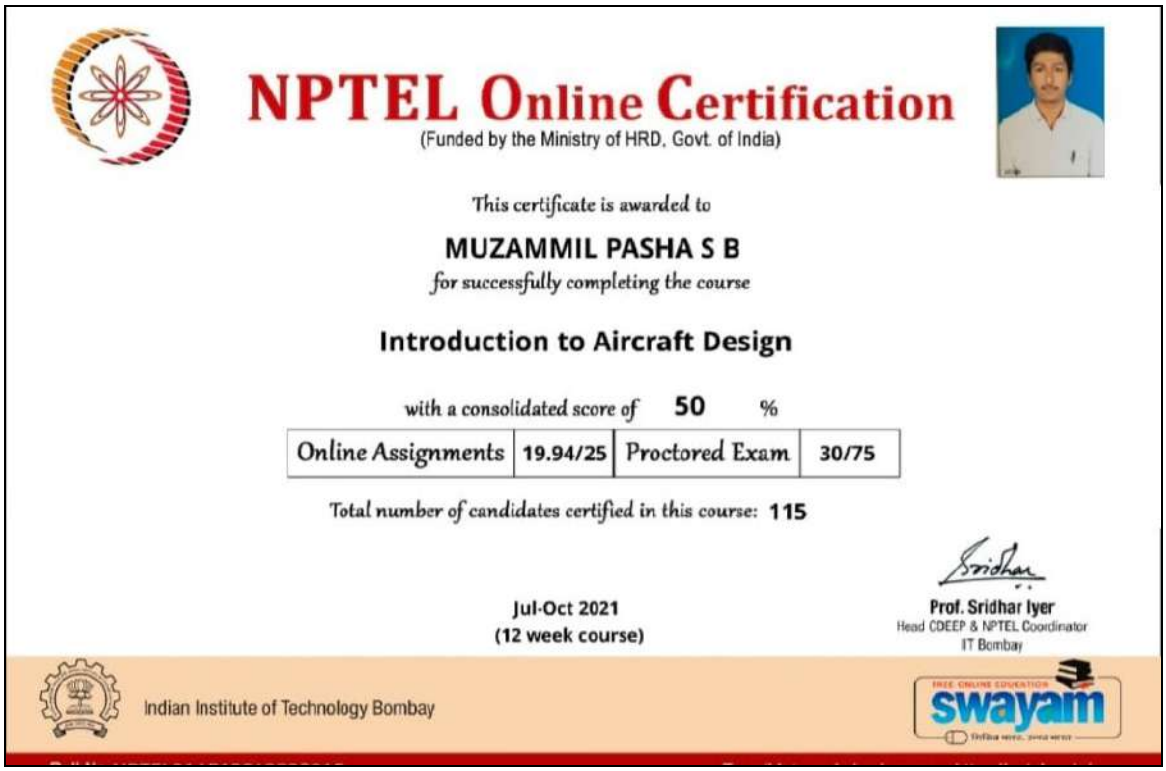


Figure 4.6.7: Sample certificate of NPTEL online programme.

Figure 4.6.8: Sample certificate of NPTEL online programme.

The following are the student(s) participate in some of the certification of excelled in sports and NCC events.

Table B.4.6.3c: Participation in sports, NCC, NSS Events (2014-21)

Sl. No.	Student Name	Awards/Recognition	Year
1	UMESH RANA	Awarded 'B' Certificate in NCC	2021
2	NAGAMANI J V		
3	BHAVANA A J		
4	MANIKYA G		
5	SAMPRUTHA A R	Awarded 'C' Certificate in NCC	
6	ASHPAK KAJOORI	Winning Team Volleyball in NCC Camp at Toranagallu	2020
7	NAGAMANI J V	Third Place in Inter/Single Zonal Tournament Wrestling at SJCIT	2020
		First Place in Inter-Collegiate Zonal Tournament Kabaddi at SJCIT	
		First Place in Taluk level Dasara Sports meet Kabaddi	

		at Chickballapur	
		Participated in BOOT CAMP during Technotsav 5.0 conducted by CSE Department, SJCIT	
		Second Place in Inter/Single Zonal Tournament Wrestling at Nipadi	
7	SAMPRUTHA A R	Participated in CATC conducted by 39 Karnataka Battalion NCC	
8	MONICA CHAVAN A		
9	RACHANA J		
10	SUBHAM		
11	ASHPAK KAJOORI	Awarded ‘B’ Certificate in NCC	
12	YASHWANT T H	Volunteer in the Campaign (School Bell) for strengthening learning atmosphere of Government schools	
13	VINAY KUMAR N		
14	ARAVIND R N		
15	ABHIJEET		
16	YASHWANTH R		
17	SIDDHARTH CHOUDHARY		
18	RAVINDRA SREE CHENDAN SAI		
19	LAKSHITHA P	Awarded ‘B’ Certificate in NCC	2018
20	A N R GOWDA	Participated in South Zone/All India Inter University Kho Kho at Tirupati	
21	DARSHAN N	Participated in CATC conducted by 8 Karnataka Battalion NCC	
22	RAJESH P		
23	VANDANA K N		
24	ASHPAK KAJOORI		
25	MANJUNATH P		
26	PANKAJ KUMAR		
27	CHANDANA M		
28	LAKSHITHA P		
29	PRIYANKA SINGH		

30	RAJESH P		
31	SATHISH KUMAR H		
32	ANISHREE	First Place in Inter/Single Zonal Tournament Throw Ball at SJCIT	2017
		Second Place in Inter Collegiate Throw Ball Tournament at Global Academy of Technology	

राष्ट्रीय कैडेट कोर
NATIONAL CADET CORPS

प्रमाण - पत्र 'सी'
CERTIFICATE 'C'

सं॰ No. KAI7SDA206977
रैंक Rank JUO
नाम Name ASHPAK
सुपुत्र/सुपुत्री Son/Daughter of RASHEEDMIYA KAJOORI
यूनिट Unit 5 KAR BN NCC
जन्म तिथि Date of Birth 21-07-1998
राष्ट्रीय कैडेट कोर निदेशालय NCC Directorate KARNATAKA & GOA

प्रमाणित किया जाता है कि ऊपर लिखित कैडेट ने रक्षा मंत्रालय, भारत सरकार के प्राधिकार के अधीन सन् 2020..... में हुई प्रमाणपत्र 'सी' परीक्षा..... श्रेणी में पास कर ली है।

This is to certify that the above mentioned Cadet has passed the Certificate 'C' Examination in ....A..... Grade held in 2020..... under the authority of Ministry of Defence, Government of India.

क्र॰ सं॰ Ser. No. BB-3003
स्थान Place BANGALORE
दिनांक Date JUL2020
6 OCT 2020

(L K Jain)
Air Cmde
DDG NCC
उप-महानिदेशक, राष्ट्रीय कैडेट कोर
Dy. Director General, National Cadet Corps.

GRADE A

Figure 4.6.9: Sample Certificate – Participation in NCC camp

Visvesvaraya Technological University

" Jnana Sangama ", Belagavi- 590 018, Karnataka, India.

Department of Physical Education & Sports

Certificate

2018 - 2019

Reg. No. 002106

This is to certify that Mr./Ms. A N R Gowda

S/o-D/o Nanjappa USN 1ST16AE001

of SJCIT, Chikkaballapur has represented

The Visvesvaraya Technological University (VTU), Belagavi, in South Zone/ All India Inter University

Tournament / Competition of Kho Kho (M)

held at Venkateswara University, Tirupati (AP)

from 24th Oct. 2018 to 28th Oct. 2018

Director of Physical Education

Vice Chan

Figure 4.6.10: Sample Certificate – Participation in sports.

Figure 4.6.11: Winning Team - Volleyball in NCC Camp at Toranagallu

Figure 4.6.12: Sample of Certificate - NSS activity at a Government school

Figure 4.6.13: Sample of Certificate – Participation in NCC camp.


Visvesvaraya Technological University
"Jnana Sangama", Belagavi - 590 018, Karnataka
Department of Physical Education & Sports
Certificate
Inter Zonal / Single Zonal Tournament : 2019 - 2020 000988
This is to certify that Srl / Kum NAGAMANI J.N.
Representing S.J.C Institute of technology, chickballapur
has secured the ~~Winners~~ / Runner-up / ~~Third~~ / ~~Fourth~~ Place in Kabaddi (Women's)
Inter Collegiate, Inter Zonal / Single Zone Tournament / Competition held at
VSM's SRK Institute of technology, Nipani
from 13-05-2019 to 14-05-2019
Director of Physical Education
VTU, Belagavi
Principal
Organizing College
Vice - Chancellor
VTU, Belagavi

Figure 4.6.14: Sample of Certificate – Participation in Sports.

The following table shows the Prizes won by the student(s) for their project work

Table B.4.6.3d: Prizes won by the students for their project work

Sl No	Project Title	Students Names	USN	Date	Event Name	Prize Won (Rs)	Event Venue
1	Design Exploration and Performance Analysis of Winglet.	AKSHAYRA N	1SJ14AE004	Jun-2018	Project Exhibition 2018	5000	Department of Aeronautical Engineering SJCIT
		DHARANESH VN	1SJ14AE015				
		GURUSHANTHAN A GOWDA	1SJ14AE018				
		RAKESH K	1SJ14AE041				
2	Numerical Analysis of Leading-Edge Serration In Sound Suppression And Aerodynamic Force Production Using ANSYS	ARAVIND REDDY	1SJ14AE006	Jun-2018	Project Exhibition 2018	5000	Department of Aeronautical Engineering SJCIT
		KIRAN I DEVAPUR	1SJ14AE019				
		BINDHU L	1SJ14AE011				
		SHREYAS GR	1SJ14AE046				

3	Development And Characterizati on of Carbon Fibre Reinforced Polymer	MANOJ KUMAR RS	1SJ15AE019	Mar-2019	Symposium Cum Project Exhibition on Recent Advances in Engineering Science	3000	Department of Aeronautical Engineering SJCIT

The following student(s) participated in Aeronautical Engineering department events during their program of study.

Table B.4.6.3e: Students participated in events conducted by the department.

Sl. No.	Name of the Student	USN	Title	Date	Place
1	AMRUTHA	1SJ17AE006	Hydro-Rocketry-Avion 2019	22/10/2019	Department of Aeronautical Engineering SJCIT
	AVESODDIN	1SJ17AE009			
	NISHAT MOMIN	1SJ17AE031			
	MEGHA	1SJ17AE025			
2	SUBRA BERA	1SJ17AE043	Mind Sweepers Avion 2019	22/10/2019	Department of Aeronautical Engineering SJCIT
	ABHIJEET	1SJ17AE002			
3	ABHIJEET	1SJ17AE002	Glidowarz Avion 2019	22/10/2019	Department of Aeronautical Engineering SJCIT
4	AKASH	1SJ17AE004	Cad Modeling Avion 2019	22/10/2019	Department of Aeronautical Engineering SJCIT
	SHREYAS	1SJ17AE018			
5	YASHWANTH	1SJ16AE049	Cad Modeling Avion 2018	10/05/2018	Department of Aeronautical Engineering SJCIT
	DHANUSH G J	1SJ15AE011			
6	VINUTH N	1SJ15AE051	Mind Sweepers Avion 2018	10/05/2018	Department of Aeronautical Engineering SJCIT
7	CHAITRA B R	1SJ15AE005	Techno Terrain Avion 2018	10/05/2018	Department of Aeronautical Engineering SJCIT
	NIHARIKA B	1SJ15AE023			
8	AJITH PATIL J R	1SJ15AE001	Hydro-Rocketry-Avion 201	11/05/2018	Department of Aeronautical Engineering SJCIT
	SWATI S ACHARYA	1SJ15AE044			
	AKSHAY	1SJ15AE002			
	ASHISH RAM GOWDA	1SJ15AE006			
	YASHWANTH	1SJ16AE049			

9	CHAITRA B R	1SJ15AE005	Aircraft Sketching Avion 2018	11/05/2018	Department of Aeronautical Engineering SJCIT
10	RAMYA R	1SJ15AE032	Aircraft Sketching Avion 2017	04/05/2017	Department of Aeronautical Engineering SJCIT
	KIRAN N A	1SJ14AE020			
11	RAKESH R	1SJ14AE041	Techno Terrain Avion 2017	04/05/2017	Department of Aeronautical Engineering SJCIT
	CHANDANA	1SJ15AE006			
12	SAHIL D R	1SJ14AE042	Mind Sweeper Avion 2017	04/05/2017	Department of Aeronautical Engineering SJCIT
	RAGHAVENDRA	1SJ15AE031			
	CHAITRA	1SJ15AE005			

Figure 4.6.15: CAD Modelling Avion 2019

Figure 4.6.16: Glidowarz Avion 2019

Figure 4.6.17: Paper Plane 2018

Figure 4.6.18: Hydro-Rocketry-Avion 2018

The following student(s) participated in online programme in various events during their program of study.

Table B.4.6.3f: Students participated in on line programme in various events

Sl. No.	Name of the Student	USN	Title	Date	Place
1	SUBRA BERA	1SJ17AE043	Online Drone Course	20/04/2020 24/04/2020	Drone Ventor
2	MEGHANA MANIKERE	1SJ17AE025	Design, Simulation and Development Of Unmanned Aerial Vehicles And Application In Various Engineering Sectors.	30/04/2020 4/04/2020	Nafems In Association with Rajarambapu Institute of Technology
3	DURGA PRASAD N S	1SJ18AE017	Stealth Technology	20/08/2020	Department Of Aeronautical Engineering SJCIT
			Role of Start-ups and Innovators In Atmanirbhar Bharat	26/08/2020 28/08/2020	BMSIT&M AIC NITTE Incubation Centre.
			Patent Filing Procedure And Pct	27/08/2020	MLR Institute Of Technology Hyderabad
4	NIKHIL M	1SJ17AE030	A Six Weeks Online Winter Training On AutoCAD.	1/01/2020 12/02/2020	Internshala Training
			Certificate Of Training AutoCAD	1/01/2020 12/02/2020	Internshala Trainings
			Autodesk Auto Cad 20192d	21/02/2020	Udemy
			2.5 Hours Of CNC Machines Building	26/02/2019	Udemy
			Fundamentals Of Solid works 2018	21/02/2020	Udemy
5	MEGHANA MANIKERE	1SJ17AE025	Online Internship Program	27/07/2020 TWO WEEKS	Bangalore Aircraft Industries Pvt Ltd
6	ABHILASH M	1S16AE002	Trends of Millennials' Contributions and Challenges in Aerospace Engineering	27/07/2020 29/07/2020	Department of Aeronautical Engineering, Acharya Institute of Technology
7	AKSHATA GUNDETI	1SJ17AE005			
8	SRIDEVI M HERLE	1SJ17AE041			

9	ANR GOWDA	1SJ16AE001			
10	DARSHAN N	1SJ16AE012			
11	RAJESH P	1SJ16AE035			
12	SAKSHAM MUTREJA	1SJ16AE037			
13	KOMALESH B E	1SJ16AE019			
14	AVESUDDIN SIDDIQUI	1SJ17AE009			
15	AKSHATA GUNDETI	1SJ17AE005	Cosmoya –A Virtual Space Cafe	12/07/2020	VIT Chennai
			Exposure Series in Astrophysics and Cosmology	13/07/2020 18/07/2020	Stellar Universe And Scirox, Science Club Gndu
16	HARSHITH L	1SJ18AE022	Opportunities in Aeronautical Field	25/07/2020	Tagore Engineering College Chennai
17	KOLLANA YESWANTH	1SJ18AE027			
18	SAKSHAM MUTREJA	1SJ16AE037			
19	ABHIJEET	1SJ17AE002	Classroom Learning To Industrial Application	27/07/2020 29/07/2020	Sir M Visvesvaraya Institute of Technology Bengaluru
20	KOLLANA YESWANTH	1SJ18AE027			
21	SAMPRUTHA A R	1SJ18AE050			
22	AKSHATA GUNDETI	1SJ17AE005	Aero Engines: Structural Engineers Nightmare	11/07/2020	B S Abudur Rahaman Crescent Institute of Science and Technology
23	NIKHIL M	1SJ17AE030	Robotics Fundamental Course	02/07/2020	Udemy
			3D Modeling and Animation with Maya	8/07/2020	
			MAT lab Basics for Beginners-Learn From Top Experts	02/07/2020	
			Mat Lab Comprehensive Training	8/07/2020	
			Fusion 360 Simulations, Modal Analysis and Event Simulations	8/07/2020	
			Mastering 3D Modeling with Blender for Beginners		
24	SANDEEP D	1SJ17AE036	Exposure Series in Astrophysics and Cosmology	13/07/2020 18/07/2020	Stellar Universe and Scirox, Science Club Gndu
25	AVESUDDIN SIDDIQUI	1SJ17AE009	Manufacturing and Analysis of Advanced Materials and Engineering Structure	26/05/2020 30/05/2020	MLR Institute of Technology
26	AKSHATA GUNDETI	1SJ17AE005	Manufacturing and Analysis of Advanced Materials and	26/05/2020 30/05/2020	MLR Institute of Technology

27	RAJESH P	1SJ16AE035	Engineering Structure		
28	ABHILASH M	1S16AE002	Necessity of Ayush in Present Scenario	15/07/2020 21/07/2020	Aarupadai Veedu Institute of Technology and School of Allied Health Sciences
			Resent Trends in Mechanical Engineering	13/07/2020 17/07/2020	PVKK Institute of Technological
			Renewable Energy System	8/07/2020 12/07/2020	The Institution of Green Engineering Panimalar Institute of Technology

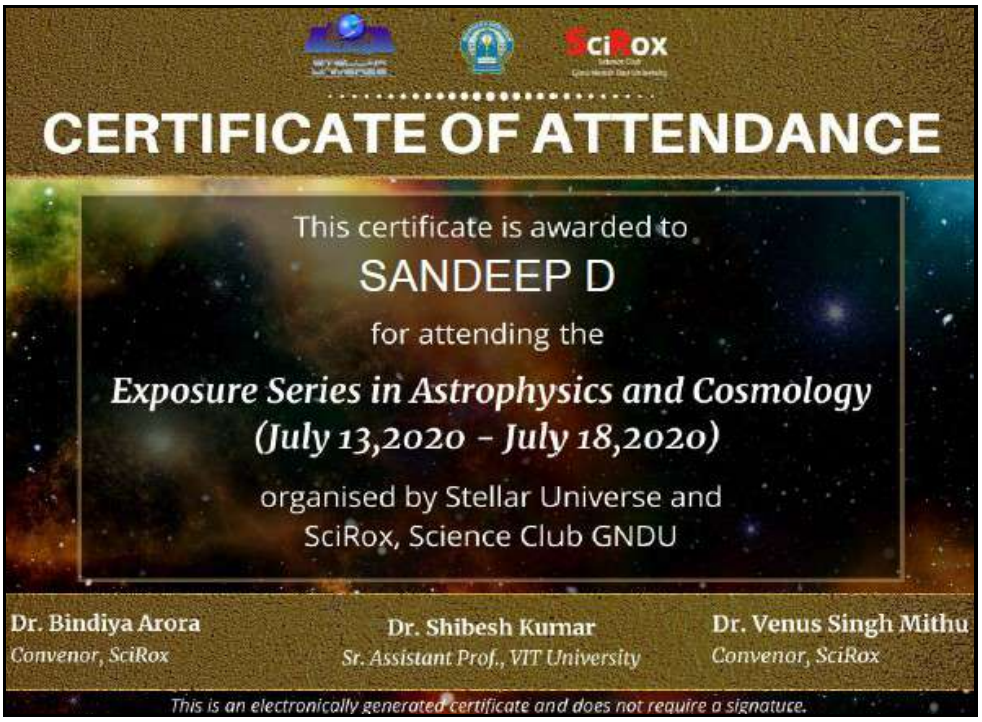


Figure 4.6.19: Sample certificate of online programme

Figure 4.6.20: Sample certificate of online programme.

CRITERIA 5

Faculty Information andContributions

CRITERION 5	FACULTY INFORMATION AND CONTRIBUTIONS	200

5. FACULTY INFORMATION AND CONTRIBUTIONS (200)

Table B 5a Faculty Information (CAY 2020-21)

CAY [2020-2021]											
Sl.NO	**Name of the Faculty Member**	**PAN No**	**Qualification**	**Area of Specialization**	**Designation**	**Date of Joining the Institution**	**Date on which Designated as Professor/ Associate Professor**	**Currently Associated (Y/N)**	**Nature of Association (Regular /Contract/Adjunct)**	**If contractual mention Full time or Part time**	**Date of Leaving** (In case Currently Associated is " No")
1.	Gp.Capt.V.Rajan (Retd)	**ACAPR5522Q**	**M.E**	Machine Design	Associate Prof	27/01/2014	27/01/2014	Y	R	-	-
2.	Prof. Deepa M.S	**ALOPM2360C**	**M.Tech (Ph.D)**	Propulsion & CFD	Associate Prof	29/07/2015	29/07/2015	Y	R	-	-
3.	Prof. Mithun P. S	**BCOPM8838F**	**M.Tech**	Machine Design	Asst.Prof	01/08/2015	-	Y	R	-	-
4.	Prof. Rohith L. G	**CAOPR2659N**	**M.Tech**	Energy Systems Engineering	Asst.Prof	01/02/2016	-	Y	R	-	-

5.	Prof. Vigneswaran C.M	**AQPJV2054N**	**M.Tech**	Aerospace Engineering	Asst.Prof	27/07/2016	-	Y	R	-	-
6.	Prof. Chandrika MB	**AKTPC4239L**	**M.Tech**	Aeronautical Engineering	Asst. Prof	31/01/2017	-	Y	R	-	-
7.	Prof. Praveen. N	**BCNPP9699G**	**M.Tech**	Astronomy & Space Engg.	Asst.Prof	01/07/2017	-	Y	R	-	-
8.	Prof. Vinay. P	**AQMPU3145M**	**M.Tech**	Computational Analysis in Mechanical Science	Asst.Prof	08/07/2017	-	Y	R	-	-
9.	Dr. Bino Prince Raja D	**AWVPB0745N**	**Ph.D**	Aerospace structures and Composite Materials	Professor	02/07/2018	01/03/2019	Y	R	-	-
10.	Prof. Nikhil Vijay Shinde	**BEVPS5298N**	**Ph.D,**	Computational Fluid Dynamics (CFD)	Professor	1/02/2019	1/02/2019	Y	R	-	-
11.	Dr. Nataraju S N	**AGNPN1302P**	**Ph.D**	Material Science	Associate Prof	28/07/2014	01/04/2017	Y	R	-	-
12.	Prof. Sunkappa	**EFXPS8087D**	**M.Tech**	Thermal Power Engg	Asst.Prof	28/07/2014	-	Y	R	-	-
13.	Dr. Nagesh D	**AQNPN9424G**	**Ph.D**	Composite Materials	Asst.Prof	22/02/2012	-	Y	R	-	-

Table B 5b Faculty Information (CAYm1 2019-20)

CAYm1 [2019-2020]											
Sl.NO	**Name of the Faculty Member**	**PAN No**	**Qualification**	**Area of Specialization**	**Designation**	**Date of Joining the Institution**	**Date on which Designated as Professor/ Associate Professor**	**Currently Associated (Y/N)**	**Nature of Association (Regular /Contract/Adjunct)**	**If contractual mention Full time or Part time**	**Date of Leaving** (In case Currently Associated is " No")
1.	Gp.Capt.V.Rajan (Retd)	**ACAPR5522Q**	**M.E**	Machine Design	Associate Prof	27/01/2014	27/01/2014	Y	R	-	-
2.	Prof. Deepa M.S	**ALOPM2360C**	**M.Tech (Ph.D)**	Propulsion & CFD	Associate Prof	29/07/2015	29/07/2015	Y	R	-	-
3.	Prof. Mithun P.S	**BCOPM 8838F**	**M.Tech**	Machine Design	Asst.Prof	01/08/2015	-	Y	R	-	-
4.	Prof. Rohith L. G	**CAOPR2659N**	**M.Tech**	Energy Systems Engineering	Asst.Prof	01/02/2016	-	Y	R	-	-
5.	Prof. Vigneswaran C.M	**AQPJV2054N**	**M.Tech**	Aerospace Engineering	Asst.Prof	27/07/2016	-	Y	R	-	-
6.	Prof. Chandrika MB	**AKTPC4239L**	**M.Tech**	Aeronautical Engineering	Asst. Prof	31/01/2017	-	Y	R	-	-
7.	Prof. Praveen. N	**BCNPP9699G**	**M.Tech**	Astronomy & Space Engg.	Asst.Prof	01/07/2017	-	Y	R	-	-

8.	Prof. Vinay. P	**AQMPU3145M**	**M.Tech**	Computational Analysis in Mechanical Science	Asst.Prof	08/07/2017	-	Y	R	-	-
9.	Dr. Bino Prince Raja D	**AWVPB0745N**	**Ph.D**	Aerospace structures and Composite Materials	Professor	02/07/2018	01/03/2019	Y	R	-	-
10.	Prof. Nikhil Vijay Shinde	**BEVPS5298N**	**Ph.D,**	Computational Fluid Dynamics (CFD)	Professor	1/02/2019	1/02/2019	Y	R	-	-
11.	Prof. Munikrishna Nagaram	**AEOPN6232P**	**Ph.D, Post Doc.**	Computational Fluid Dynamics (CFD)	Professor	1/02/2019	1/02/2019	Y	R	-	-
12.	Prof Paramesh T	**PLEPP0607F**	**M. Tech**	Thermal Engineering	Asst. Prof	01/02/2017	-	N	R	-	07/02/2020
13.	Dr. Nataraju S N	**AGNPN1302P**	**Ph.D**	Material Science	Associate Prof	28/07/2014	01/04/2017	Y	R	-	-
14.	Prof. Sunkappa	**EFXPS8087D**	**M.Tech**	Thermal Power Engg	Asst.Prof	28/07/2014	-	Y	R	-	-
15.	Dr. Nagesh D	**AQNPN9424G**	**Ph.D**	Composite Materials	Asst.Prof	22/02/2012	-	Y	R	-	-

Table B 5c Faculty Information (CAYm2 2018-19)

CAYm2 [2018-2019]											
Sl.NO	**Name of the Faculty Member**	**PAN No**	**Qualification**	**Area of Specialization**	**Designation**	**Date of Joining the Institution**	**Date on which Designated as Professor/ Associate Professor**	**Currently Associated (Y/N)**	**Nature of Association (Regular /Contract/Adjunct)**	**If contractual mention Full time or Part time**	**Date of Leaving** (In case Currently Associated is " No")
1.	GpCapt.V.Rajan (Retd)	**ACAPR5522Q**	**M.E**	Machine Design	Associate Prof	27/01/2014	27/01/2014	Y	R	-	-
2.	Prof. Munikrishna Nagaram	**AEOPN6232P**	**Ph.D, Post Doc.**	Computational Fluid Dynamics (CFD)	Professor	1/02/2019	1/02/2019	Y	R	-	-
3.	Prof. Nikhil Vijay Shinde	**BEVPS5298N**	**Ph.D,**	Computational Fluid Dynamics (CFD)	Professor	1/02/2019	1/02/2019	Y	R	-	-
4.	Prof. Deepa M. S	**ALOPM2360C**	**M.Tech (Ph.D)**	Propulsion & CFD	Associate Prof	29/07/2015	29/07/2015	Y	R	-	-
5.	Prof. Mithun P. S	**BCOPM8838F**	**M.Tech**	Machine Design	Asst. Prof	01/08/2015	-	Y	R	-	-
6.	Prof. Rohith L.G	**CAOPR2659N**	**M.Tech**	Energy Systems Engineering	Asst. Prof	01/02/2016	-	Y	R	-	-

7.	Prof. Vigneswaran C.M	**AQPJV2054N**	**M.Tech**	Aerospace Engineering	Asst. Prof	27/07/2016	-	Y	R	-	-
8.	Prof. Praveen. N	**BCNPP9699G**	**M.Tech**	Astronomy & Space Engg.	Asst. Prof	01/07/2017	-	Y	R	-	-
9.	Prof. Vinay. P	**AQMPU3145M**	**M.Tech**	Computational Analysis in Mechanical Science	Asst. Prof	08/07/2017	-	Y	R	-	-
10.	Dr.Bino Prince Raja D	**AWVPB0745N**	**Ph.D**	Aerospace structures and Composite Materials	Professor	02/07/2018	01/03/2019	Y	R	-	-
11.	Prof. Chandrika MB	**AKTPC4239L**	**M.Tech**	Aeronautical Engineering	Asst. Prof	31/01/2017	-	Y	R	-	-
12.	Prof Paramesh T	**PLEPP0607F**	**M. Tech**	Thermal Engineering	Asst. Prof	01/02/2017	-	Y	R	-	-
13.	Prof. Aditya A R	**BRDPA0406P**	**M. Tech**	Aircraft Design	Asst. Prof	02/07/2018	-	N	R	-	10/07/2019
14.	Dr. Nataraju S N	**AGNPN1302P**	**Ph.D**	Material Science	Associate Prof	28/07/2014	01/04/2017	Y	R		-
15.	Prof. Sunkappa	**EFXPS8087D**	**M.Tech**	Thermal Power Engg	Asst.Prof	28/07/2014	-	Y	R		-
16.	Dr. Nagesh D	**AQNPN9424G**	**Ph.D**	Composite Materials	Asst.Prof	22/02/2012	-	Y	R		-

5.1 Student-Faculty Ratio (SFR) (20)

(To be calculated at Department Level)

No. of UG Programs in the Department (n): **01**

No. of PG Programs in the Department (m): **NIL**

No. of Students in UG 2nd Year= **u1**

No. of Students in UG 3rd Year= **u2**

No. of Students in UG 4th Year= **u3**

No. of Students in PG 1st Year= **p1**

No. of Students in PG 2nd Year= **p2**

No. of Students = Sanctioned Intake + Actual admitted lateral entry students
(The above data to be provided considering all the UG and PG programs of the department)

S=Number of Students in the Department = UG1 + UG2 +… +UGn + PG1 + …PGn

F = Total Number of Faculty Members in the Department (excluding first year faculty)

Student Teacher Ratio (STR) = S / F

Student Teacher Ratio (STR) = S / F =13.54

Table B 5.1 Student-Faculty Ratio

Year	CAY (2020-21)	CAYm1(2019-20)	CAYm2(2018-19)
u1.1	60+1=61	60=60	60+0=60
u1.2	60+1=61	60=60	60+0=60
u1.3	60+1=61	60=60	60+0=60
UG1	**181**	**180**	**180**
Total No. of Students in the Department **(S)**	**S1=181**	**S1=180**	**S2=180**
No. of Faculty in the Department **(F)**	**F1=13**	**F1=14**	**F2=13**
Student Faculty Ratio **(SFR)**	**SFR1 =13.92**	**SFR2 =12.86**	**SFR3= 13.85**
Average SFR	**SFR=(SFR1+SFR2+SFR3)/3=13.54**		

5.1.1 Provide the information about the regular and contractual faculty as per the format mentioned below:

Table B 5.1.1 Regular and Contractual Faculty Information

Year	Total number of regular faculty in the department	Total number of contractual faculty in the department
CAY [2020-21]	13	-
CAYm1 [2019-20]	14	-
CAY*m*2 [2018-19]	13	-

5.2 Faculty Cadre Proportion (25)

The reference Faculty cadre proportion is 1(F1):2(F2):6(F3)

F1: Number of Professors required = 1/9 x Number of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (N) as per 5.1

F2: Number of Associate Professors required = 2/9 x Number of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (N) as per 5.1

F3: Number of Assistant Professors required = 6/9 x Number of Faculty required to comply with 20:1 Student-Faculty ratio based on no. of students (N) as per 5.1

Table B 5.2 Faculty Cadre Proportion

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY [2020-21]	**1**	**2**	**2**	**3**	**6**	**8**
CAY m1 [2019-20]	1	2	2	3	6	9
CAY*m*2 [2018-19]	1	0	2	3	6	10
Average Numbers	**RF1=1**	**AF1=1.33**	**RF1=2**	**AF2=3**	**RF3=6**	**AF3=9**

$$\text{Cadre Ratio Marks} = \left[\left[\frac{AF1}{RF1} \right] + \left[\frac{AF2 \times 0.6}{RF2} \right] + \left[\frac{AF3 \times 0.4}{RF3} \right] \right] \times 12.5$$

Cadre Ratio Marks= [1.33+0.9+0.6] x 12.5=35.375

5.3 Faculty Qualification (25)

FQ =2.5 x [(10X +4Y)/F)] where x is no. of regular faculty with Ph.D., Y is no. of regular faculty with M.Tech. F is no. of regular faculty required to comply 20:1 Faculty Student ratio (no. of faculty and no. of students required are to be calculated as per 5.1)

Table B 5.3 Faculty Qualification

Years	X	Y	F	FQ=2.5 x [(10X +4Y)/F)]
CAY [2020-21)]	**3**	**10**	**9**	**19.44**
CAYm1 [2019-20]	3	11	9	**20.56**
CAYm2 [2018-19]	1	13	9	**17.22**
Average Assessment				**19.07**

5.4 Faculty Retention (25)

Table B 5.4a Faculty Retention

Retention Details	CAY [2020-21]	CAYm1 [2019-20]	CAYm2 [2018-19]
Number of Faculties Retained	12	12	12
Number of Faculties in the Base Year [2016-2017]	13	13	13
Percentage of Retained	**92.30**	**92.30**	**92.30**
Average Percentage Faculty Retention	**92.30**		

5.5 Innovations by the Faculty in Teaching and Learning (20)

- Utilization of physical Aircraft models while taking classes and laboratory experiments;
  - Other than usual classroom teaching, faculty members discuss and expose students to the concepts that help them in carrying out mini-projects.

- Exposes the students to experimental and practical aspects of theory studied in classrooms. Lab-experiments help students to verify the theory concepts by interpretation of results. Laboratory experiments are carried out in teams, which helps in developing the spirit of working in a team

➢ Utilization of ICT methods & NPTEL/ You Tube videos lectures.

- The department encourages the use of modern-day teaching aids (tools) like LCD / LED projectors, Internet/Wi-Fi enabled computer systems/laptops which are regularly used in classrooms and other learning environments for the benefit of students.
- Students are provided the access to the tutorials of NPTEL where they can choose the subject of their choice and listen to the eminent resource persons in diverse areas of technology and enrich their knowledge base.
- Faculty members have been continuously encouraged to attend Faculty Development Programs on emerging technologies/subjects, certification programs by the relevant aeronautical and educational institutes to learn/update advance level of topics and skills.
- It has been a regular practice for the past five years; the faculty members have been presenting technical research papers in National/International Conferences and also publishing their research works in National/International journals to share and expand their boundary of knowledge.
- To reach out to students while handling complex subjects/topics in class rooms, faculty members make use of the study materials/videos of the reputed Universities in India and abroad

➢ Assignments in the form of Case Studies, Quizzes and Mini Projects

- **Assignments:** Assignments make students self-reliant in solving problems through understanding of theory through practice. Quizzes are conducted after the completion of syllabus and all the students are informed to attend the quizzes compulsorily
- **Case study:** Current topic related to the subject will be given to a group of students informing them to study about the topic, research going on related to the topic, submit a report and present in the class

- **Tutorials:** Tutorials help the students in analysing and solving the engineering problems on the basis of the theory dealt during lectures. The tutorial sessions make the concept clear to the students.
- **Seminar:** Students are made to present a seminar during their academic year. In this, the students are supposed to present on a particular topic by referring to various books, Journals of National and International repute.

➢ Course enrichment by covering topics beyond syllabus / curriculum

- Assignments on Contemporary Issues - from Library/Internet
- Pre-placement Training
- Training on Soft skills and Value Addition Programs
- Practicing/Mini/Creative Projects
- Guest Lectures/Technical Talks/Demonstrations
- Workshops/Conferences
- Industrial Visits and Internships

➢ Flipped class room

- Topics related to the course will be circulated to the students through google group (group mail) instructing them to prepare for the topic before the scheduled class. The Course coordinator prepares a list of questions and ask the students to answer the same during the class

5.6 Faculty as participants in Faculty development/training activities/STTPs/Webinars (15)

Table B 5.6 Faculty participants in FDP/STTP activities

Sl. No.	Name of the Staff	Max. 5 per Faculty			
		CAY (2020-21)	CAYm1 (2019-20)	CAYm2 (2018-19)	CAYm3 (2017-18)
1.	Gp Capt.V. Rajan (Retd)	3	5	5	5
2.	Prof. Deepa M. S	5	5	5	5
3.	Prof. Mithun P. S	3	-	5	-
4.	Prof. Rohith L. G	5	5	5	3
5.	Prof. Vigneswaran C.M	3	-	5	3
6.	Prof. Praveen. N	5	5	5	5
7.	Prof. Vinay. P	5	5	5	5
8.	Dr.Bino Prince Raja D	5	5	5	5
9.	Prof. Chandrika M B	-	5	3	5
10.	Dr. Nataraju.S. N	5	5	5	5
11.	Dr. Nagesh.D	5	5	5	5
12.	Prof.Sunkappa	-	-	-	-
Sum		**41**	**45**	**43**	**46**
***RF*= Number of Faculty required to comply with 20:1 Student-Faculty ratio as per 5.1**		**9**	**9**	**9**	**9**
Assessment= 3*(sum/0.5 RF)		**27.33**	**30**	**28.66**	**30.66**
Average Assessment over three years (Marks Limited to 15)		**29.16**			

5.7. Research and Development (30)

5.7.1 Academic Research (10)

A. Paper Published by the faculty members in Referred/SCI Journal.

Table B 5.7.1a Paper Published by the faculty members in Referred/SCI Journal during 2020-2021

Name of the Faculty	National/ International	Title of the Paper	Journal Details	Indexing	Impact factor
Prof. Deepa.M.S	International	Effect of stall on Blended Wing Body Aircraft	ISSN: 2278-627X (For online version) ISSN: 2319-3778 (For Printed Version)2\09\2020 Published in IJLTET Journal, Volume 17	Copernicus	0.685/1
Dr. Bino Prince Raja.D	International	Influence of nanoparticles on thermal, mechanical and 3D analysis of hybrid Bamboo/glass fibre reinforced polymer composites	Transaction of Indian Institute of Metals, SPRINGER	SCI	1.49
Dr. Bino Prince Raja.D	International	Investigating the effect of Si3 N4 Reinforcement on the morphological and mechanical behaviour of AA2219 alloy	Silicon, SPRINGER	SCI	2.4
Dr. Bino Prince Raja.D	International	Tribological, Thermal and Corrosive Behaviour of Aluminium Alloy 2219 Reinforced by Si3N4 Nanosized Powder	Silicon, https://doi.org/10.1007/s12633-021-01214-0 SPRINGER ISSN 1876-9918	SCI	2.4
Dr. Bino Prince Raja.D	International	Mechanical Characterization of Carbon Fibre Reinforced Epoxy Polymer	SSRN eLibrary23/07/2020 ISSN 1556-5068	Google Scholar	

Dr. Nagesh.D	International	Optimization of Tribological Properties of Al6061, Boron and Graphite MMCs Using Taguchi Method	IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE)	Google scholar	
Dr. Nagesh.D	International	Tribological characteristics of AI6061, baron, and Graphite hybrid Metal matrix composites	Taylor & Francis Advances in Materials and Processing Technologies http://doi.org/10.80/2374068X2021.1946323 18/06/2021	SCI	1.56

Table B 5.7.1b Paper Published by the faculty members in Referred/SCI Journal during 2019-20

Name of the Faculty	National/ International	Title of the Paper	Journal Details	Indexing	Impact factor
Prof. Deepa M. S	International	Preliminary Design of a Reverse flow annular Combustor & Experimental investigation at design & off design opening conditions	International Journal of Recent Technology and Engineering (IJRTE), ISSN 2277-3878, Vol 8, Issue 1C, May 2019	Scopus	
Prof. Deepa M. S	International	Numerical Simulation of Rocket launch Vehicle	SSRN e library	Scopus	
Dr. Bino Prince Raja.D	International	Influence of nanoparticles on hybrid fibre reinforced polymer composites	Materials Today: Proceedings, 24, Elsevier, pp 1498-1507, 2020	Scopus	
Dr. Bino Prince Raja.D	International	Intelligent particle swarm optimization for quality machining in advanced manufacturing process	Materials Today: Proceedings, 24, Elsevier	Scopus	

Table B 5.7.1c Paper Published by the faculty members in Referred/SCI Journal during 2018-19

Name of the Faculty	National/ International	Title of the Paper	Journal Details	Indexing	Impact factor
Dr. Bino Prince Raja.D	International	Effect of short fibre orientation on mechanical characterization of composite material-Hybrid fibre reinforced polymer matrix	Bulletin of material science, Springer s12034- 019-1813-5, 2019	SCI	1.39
Dr. Bino Prince Raja.D	International	Computational Analysis of Blended Winglet model performance by varying Cant Angle	Journal of Computational and Theoretical Science Vol 8, 2277-3878 May 2019	Scopus	
Dr. Bino Prince Raja.D	International	Prediction of responses in FSW Processed Hybrid Composites using soft computing Technique	Journal of Computational and Theoretical Science	Scopus	
Dr. Bino Prince Raja.D	International	Stress analysis of AL2014-T6 rivetted splice joint fuselage structure using finite element analysis"	IOP Conf. Series: Material science and Engineering, Vol.455, Issue 012138, pp. 1-8, December 2018	Scopus	
Mr. Vinay P	International	An Experimental Investigation on Hardness and Shear Behaviour of Aluminium, Silicon Carbide and Graphite Hybrid Composite with and without Cryogenic Treatment	Materials Today: Proceedings, 5, Elsevier Pp 916-921	Scopus	
Dr. Nagesh.D	International	Synthesis and Characterization of AL6061 reinforced with 2% Graphite, 2% Boron hybrid MMCS using Stir and centrifugal casting technique	International journal of mechanical and production Engineering research and development (IJMPERD)	Scopus	

B. Paper presented by the faculty in National/ International conferences

Table B 5.7.1d Paper presented by the faculty in National/ International conferences during 2020-2021

Sl. No	Name of the faculty	Title of the paper	Conference title	National/ International	Date
1.	Dr. Nataraju.S. N	Wear Characteristics of Double Ceramic Particulate Hybrid Aluminium Matrix Composite”	"Futuristic Trends in Mechanical Engineering" (ICOFTIME-2020)	International	24-25April 2020

Table B 5.7.1e Paper presented by the faculty in National/ International conferences during 2019-2020

Sl. No	Name of the faculty	Title of the paper	Conference title	National/ International	Date
1.	Dr. Bino Prince Raja.D	Particle swarm optimization of friction stir welding process parameters for AA6061/Activated carbon composite	2nd International Conference on Aeronautics	International	2020
2.	Dr. Bino Prince Raja.D	Multi response optimization of FSW Process parameters of ZE42 Alloy using RSM Based Grey relational Analysis	2nd International Conference on Intelligent Manufacturing and Energy Sustainability	International	2020

Table 5.7.1f. Paper presented by the faculty in National/ International conferences

Sl. No	Name of the faculty	Title of the paper	Conference title	National / International	Year
1.	**Prof. Deepa M. S**	Preliminary Design and numerical Simulation of a Reverse Flow Annular Combustor at Basic Design Point Operating Conditions	International Conference On Trends in Industrial & Value Engg, Business and Social Innovation	International	2018
2.	**Prof. Vigneswaran C M**	Conceptual Design of 180-Seater Passenger Aircraft	International Conference on Emerging Trends in Science & Technologies for Engineering Systems	International	2018
3.	**Prof. Vigneswaran C M**	Design and Analysis of Main Rotor Blades of a Utility Helicopter during Hovering	International Conference on Emerging Trends in Science & Technologies for Engineering Systems	International	2018
4.	**Prof. Paramesh.T**	Experimental and Numerical Evaluation of Thermal Performance of Closed Loop Pulsating Heat Pipe	International Conference on Emerging Trends in Science & Technologies for Engineering Systems	International	2018
5.	**Dr. Bino Prince Raja D**	Influence of Nano particles on Mechanical and Thermal characterization of Hybrid Fiber Reinforced Polyster Composites	International Conference on Advances in Materials and Manufacturing Applications	International	2018
6.	**Prof. Deepa M S**	Numerical Simulation of Rocket Launch Vehicle	2nd International Conference on Emerging Trends in Science & Technologies for Engineering Systems (Available in SSRN e Library of Elsevier)	International	2019

7.	**Prof. Praveen N**	PID Controller Design for Dynamic Motion of an Aircraft	2nd International Conference on Emerging Trends in Science & Technologies for Engineering Systems (Available in SSRN e Library of Elsevier)	International	SJCIT, Chickballapur 2019
8.	**Dr. Bino Prince Raja. D**	Mechanical Characterisation of Carbon Fibre Reinforced Epoxy Polymer	2nd International Conference on Emerging Trends in Science & Technologies for Engineering Systems (Available in SSRN e Library of Elsevier)	International	SJCIT, Chickballapur 2019

C. Patent filed/granted

Table 5.7.1g Patent Filed/Granted

Sl. No.	Name of the Inventor	Title of Invention	Application/ Patent	National / International
01	Dr. Bino Prince Raja. D	"Structural Health Monitoring for the turbine blades of the gas turbine engine by embedded sensors"	2021102090, Australia, April 2021**(GRANTED)**	**International** Australia
02	Dr. Bino Prince Raja. D	"Obtaining A Self-Healing CFRP By Microcapsules and Vascular Network for Aerospace Application"	**202141007313**, RQ No. 20214005725, February 2021	National
03	Dr. Bino Prince Raja. D	"Method of wear surface roughness and tensile failure analysis of hybrid composites by online acoustic emission"	**202041037313**, October 2020	National

D. Books/Books Chapters Published

Table 5.7.1h Books/Books Chapters Published

SL. No.	Title	Author/s	Year of Publication	Name of the Publisher/s
1	"Comprehensive Characterization of Carbon Fiber-Reinforced Epoxy Composite for Aerospace Application	**Dr. Bino Prince Raja. D**	2019	Advances in Structures, Systems and Materials, SPRINGER
2	Multi-response Optimization of FSW Process Parameters of ZE42 Alloy Using RSM-Based Grey Relational Analysis	Dr. **Bino Prince Raja D**	2020	Intelligt Manufacturing and Energy Sustainability, SPRINGER

E. Ph.D. guidance and Details of Ph. D. awardees at BGS R & D Centre for Aeronautical Engineering.

Table 5.7.1i Ph.D. guidance and Details of Ph. D. awardees at B G S R & D Centre for Aeronautical Engineering.

Sl. No.	Guide Name	Name of Ph.D. students	University	Field	Year of Registration	Status
1	Dr. Bino prince raja	Chandrika M B	VTU	Aerospace Engg.	2021	Registered
2	Dr. Bino prince raja	Syed Sukumar Abbas	VTU	Aerospace Engg.	2021	Registered

F. Details of Ph.D. Candidates registered outside Institution

Table 5.7.1j Details of Ph.D. Candidates registered outside Institution

Sl No.	Name of Research Scholar	Guide Name	University	Year of Registration	USN	Status
1	Deepa M S	Dr.S K Maharana	VTU	2015	1AY15PAJ01	Final Viva completed
2.	Vigneswaran C M	Dr. Vishnukumar	Hindustan University	2019	AE1908	Comprehensive viva completed.
3.	Mr. Vinay P	Dr. Mohan Krishna S A	VTU	2020	4VV20PME06	REGISTERD

5.7.2 Sponsored Research (5)

Funded research Provide a list with Project Title, Funding Agency, Amount and Duration)

Table B 5.7.2.1 Details of Funded /Sponsored Research

Sl. No	Title of the project	Period	Funding Agency	Amount Sanctioned INR	Duration
1.	Coconut and Areca Nut Harvesting Drone	March 2019-March 202(extended till Dec 2020)	NAIN/ITBT, Govt of Karnataka	2,50,000	12 Months
2	Study and Development of Hybrid Ramie/Glass Fiber reinforced Epoxy Composites	Aug 2019-May 2020	KSCST, Karnataka	5,000	10 Months
3	DESIGN, structural Analysis and Topology Optimization of Aircraft wing.	Aug 2020-May 2021	VTU	5000	10 Months
4	Design and Linear static analysis of Aircraft Interior composite Panel for Minimum Weight through Stress Analysis	Aug 2020-May 2021	VTU	5000	10 Months

5.7.3 Development activities (10)

5.7.3. A Product development: The following table B 5.7.3 lists the details of product that are designed, developed, implemented and deployed by our students guided by faculty members'

Table B 5.7.3.1a Product Development

Sl. No	Project name/ product	Year of implementation	Student team members	Faculty – In charge
1.	Coconut and Areca Nut Harvesting Drone	2018 to till Date	1. Dhanush G J 2. Ajith Patil 3. Manjunath Patil 4. Deepak B S	Prof. DEEPA M S
2.	Design and construction of a TRUAV	2020	1. Ashik Ram Gowda 2. Bhuvan K 3. Manu Gowda K S 4. Manoj B E	Prof. Chandrika M B

a) Coconut and Areca Nut Harvesting Drone

Figure. 5.7.3a Test flying of the Drone

Figure. 5.7.3b Altitude check of the Drone

Figure. 5.7.3 c handing over of Drone

b) Design and construction of a TRUAV

Figure. 5.7.3 d Model of TRUAV

5.7.3 The following table B 5.7.3 (B**)** Equipment name / Instructional materials /Working models/charts Descriptions of Aeronautical engineering department

Sl No	Activities	Equipment name / Instructional materials /Working models/charts Descriptions
1	Working Models/Charts	a) Turbojet Aero Engine R-11  b) Aircraft Components & Instruments  

		c) Display Boards of Aircraft and Aero-engine Components.
2	Instructional Materials	a) Instructional Manuals are available in all Labs b) PPTs, Subject Notes, Videos & Handouts
3	Equipments	a) Computerized Universal Testing Machine (10 TON)  b) Computerized Low Speed Subsonic Wind Tunnel  c) Wagnor Beam Test Set Up

4	Software Tools	a) CATIA V5 Academic (30 Users) b) CATIA V6 Academic (7 Users) 

Table 5.7.3.1b Equipment name / Instructional materials /Working models/charts Descriptions of Aeronautical Engineering department

5.7.4 Consultancy (from Industry) (5)

(Provide a list with Project Title, Funding Agency, Amount and Duration)

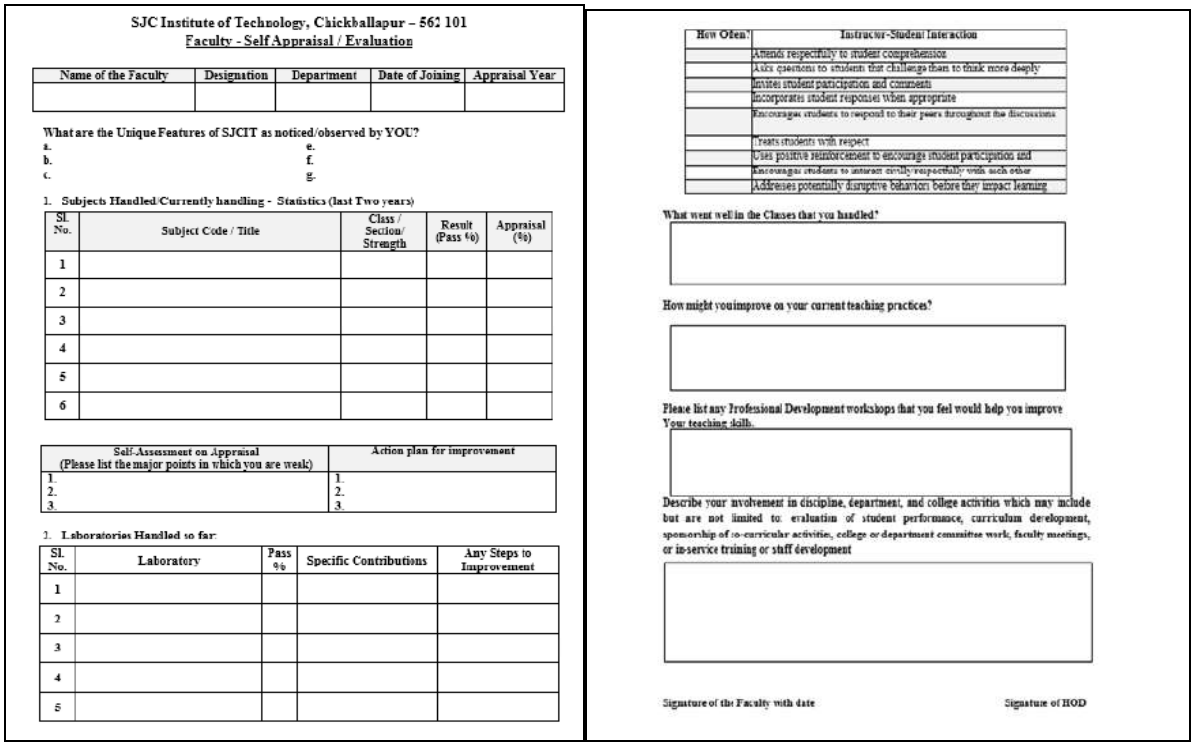
Table B 5.7.3.1c Details of Consultancy

Sl. No	Consultancy Work Undertaken	Facility used	Company/ Institute Name	Amount Sanctioned INR
1	Testing of Force Models to determine Lift, Drag & Moment	Low Speed Subsonic Wind tunnel (Aerodynamics Lab)	M/s Ind Lab Equipments Pvt Ltd, Doddaballapur	5,000
2	Force Balance & Smoke Flow Visualization	Low Speed Subsonic Wind tunnel (Aerodynamics Lab)	Jyothi Institute of Technology, Bangalore	5,000

5.8 Faculty Performance Appraisal and Development System (FPADS)(30)

The Institution has a well-defined faculty performance appraisal and development system. Each staff member submits annually in detail capturing all his/her activities in a prescribed format to the head of the department. At institution level Academic Audit Committee will evaluate the academic performance of every faculty member.

The sample copy of Annual self appraisal report is as shown below.



SJC Institute of Technology, Chickballapur – 562 101

Faculty - Self Appraisal / Evaluation

Name of the Faculty	Designation	Department	Date of Joining	Appraisal Year

What are the Unique Features of SJCIT as noticed/observed by YOU?

a. e.
b. f.
c. g.

1. Subjects Handled/Currently handling - Statistics (last Two years)

Sl. No.	Subject Code / Title	Class / Section/ Strength	Result (Pass %)	Appraisal (%)
1				
2				
3				
4				
5				
6				

Self-Assessment on Appraisal (Please list the major points in which you are weak)	Action plan for improvement
1. 2. 3.	1. 2. 3.

2. Laboratories Handled so far:

Sl. No.	Laboratory	Pass %	Specific Contributions	Any Steps to Improvement
1				
2				
3				
4				
5				

How Often?	Instructor-Student Interaction
	Attends respectfully to student comprehension
	Asks questions to students that challenge them to think more deeply
	Invites student participation and comments
	Incorporates student responses when appropriate
	Encourages students to respond to their peers throughout the discussions
	Treats students with respect
	Uses positive reinforcement to encourage student participation and
	Encourages students to interact civilly/respectfully with each other
	Addresses potentially disruptive behaviors before they impact learning

What went well in the Classes that you handled?

How might youimprove on your current teaching practices?

Please list any Professional Development workshops that you feel would help you improve Your teaching skills.

Describe your involvement in discipline, department, and college activities which may include but are not limited to: evaluation of student performance, curriculum development, sponsorship of co-curricular activities, college or department committee work, faculty meetings, or in-service training or staff development

Signature of the Faculty with date Signature of HOD

Figure 5.8.1 Sample copy of Annual Self Report

Implementation and effectiveness

Overall performance of every faculty member is evaluated once in a year based on the following parameters.

- Student feedback
- Results in the respective subject handled
- Additional duties performed in that particular semester
- Participation in Training Programs / Faculty Development programs / Workshops
- University Examination related work

- Publication in conferences and journals
- Consultancy work
- Involvement in Research work
- Execution of funded projects

The process of performance evaluation is as follows:

- The faculty fills the appraisal format and submits with necessary documents to the HOD.
- The institution schedules an Academic Performance Index review meeting once in a year. An Academic Audit committee comprising of Management Representative, Principal and respective HOD of the program will review the academic performance of every faculty member.
- The purpose of Academic Audit Committee is to evaluate the performance of the faculty and appreciate their achievement and give suggestion for further improvements of quality of teaching, research, administrations and curricular/extracurricular activities.
- Every faculty member will present his/her academic performance to the committee.
- Faculty member displays his/her teaching resources like Notes, Assignments, question bank, course file and personal file.
- The committee will evaluate the performance of every faculty member and generate evaluation report.
- This evaluation report along with the necessary recommendations/actions is submitted to the establishment section.
- The establishment section consolidates and submits the detail report to the principal for further actions.
- The typical recommendations/actions would include deferring in increment.
- The recommendation would be advising the faculty to participate in faculty development programs to enhance knowledge, enhance qualifications, organize programs in the college, and submit project proposals to funding agencies.

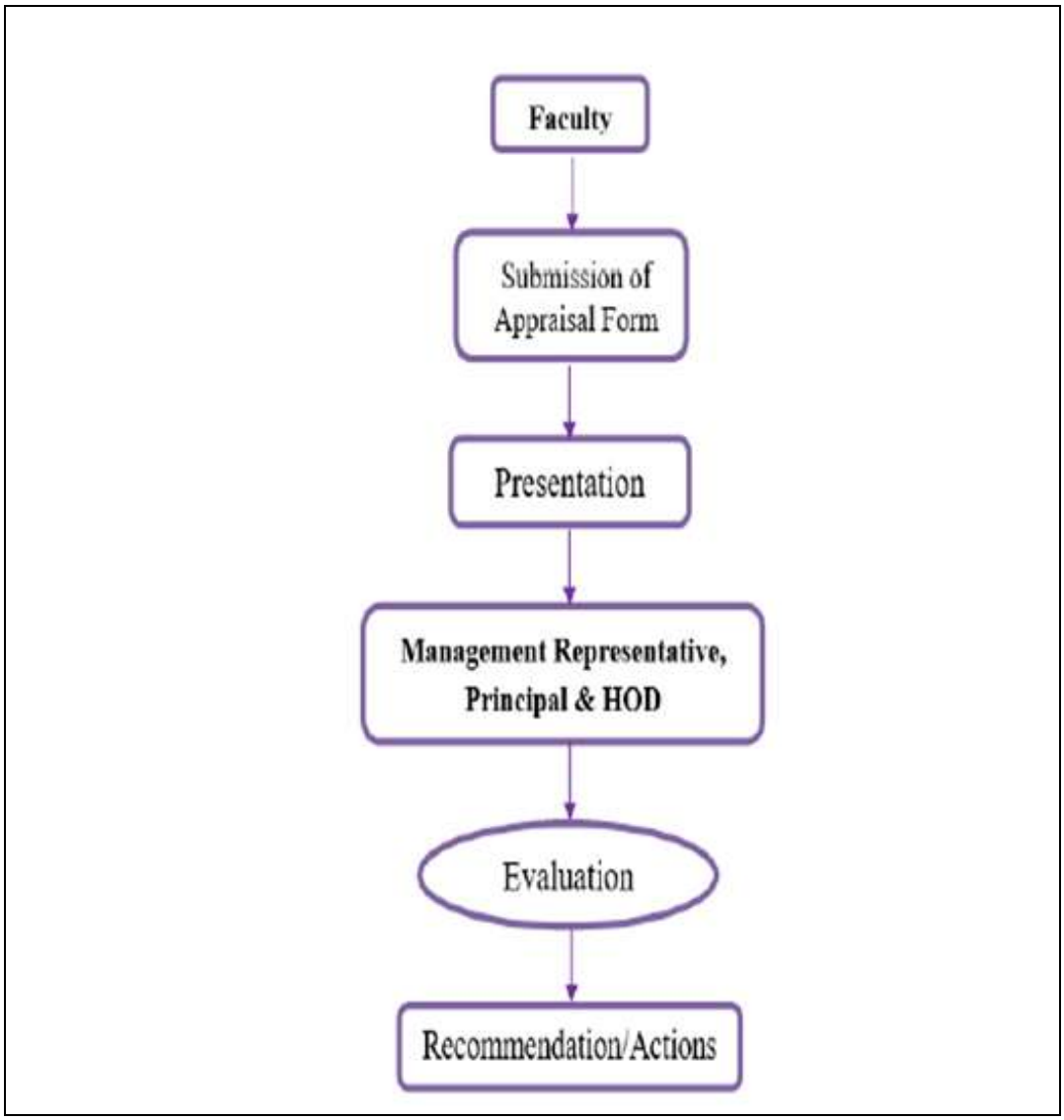
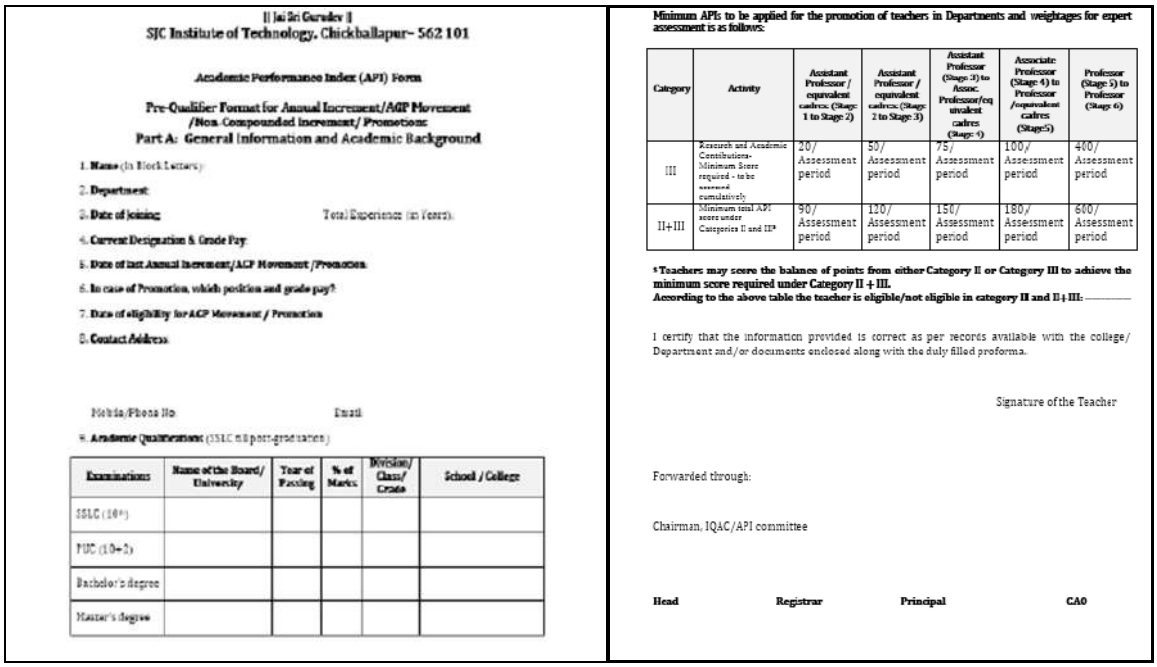


Figure 7.8.2 Flow chart of faculty performance appraisal and development system

The Academic Performance Index (API) Form are presented below:



|| Jai Sri Gurudev ||
SJC Institute of Technology, Chickballapur– 562 101

Academic Performance Index (API) Form

Pre-Qualifier Format for Annual Increment/ACP Movement
/Non Compounded Increment/ Promotion
Part A: General Information and Academic Background

1. Name (in Block Letters):
2. Department:
3. Date of joining: Total Experience (in Years):
4. Current Designation & Grade Pay:
5. Date of last Annual Increment/ACP Movement /Promotion:
6. In case of Promotion, which position and grade pay?:
7. Date of eligibility for ACP Movement / Promotion
8. Contact Address:

Mobile/Phone No: Email:

9. Academic Qualifications: (SSLC to post-graduation)

Examinations	Name of the Board/ University	Year of Passing	% of Marks	Division/ Class/ Grade	School / College
SSLC (10th)					
PUC (10+2)					
Bachelor's degree					
Master's degree					

Minimum APIs to be applied for the promotion of teachers in Departments and weightages for expert assessment is as follows:

Category	Activity	Assistant Professor / equivalent cadres. (Stage 1 to Stage 2)	Assistant Professor / equivalent cadres. (Stage 2 to Stage 3)	Assistant Professor (Stage 3) to Assoc. Professor/equivalent cadres (Stage: 4)	Associate Professor (Stage 4) to Professor /equivalent cadres (Stage:5)	Professor (Stage 5) to Professor (Stage 6)
III	Research and Academic Contributions- Minimum Score required - to be assessed cumulatively	20/ Assessment period	50/ Assessment period	75/ Assessment period	100/ Assessment period	400/ Assessment period
II+III	Minimum total API score under Categories II and III*	90/ Assessment period	120/ Assessment period	150/ Assessment period	180/ Assessment period	600/ Assessment period

*Teachers may score the balance of points from either Category II or Category III to achieve the minimum score required under Category II + III.
According to the above table the teacher is eligible/not eligible in category II and II+III: .....

I certify that the information provided is correct as per records available with the college/ Department and/or documents enclosed along with the duly filled proforma.

Signature of the Teacher

Forwarded through:

Chairman, IQAC/API committee

Head Registrar Principal CAO

Figure 5.8.3 Sample copy of Academic performance Index (API) form

CRITERIA 6

Facilities and Technical Support

CRITERION 6	FACILITIES AND TECHNICAL SUPPORT	80

6. FACILITIES AND TECHNICAL SUPPORT (80)

6.1 Adequate and well-equipped laboratories and technical manpower (30)

Table B.6.1 Details of major equipment, weekly utilization and technical man power support

Sl. No.	Name of the Laboratory	No. of students per setup (Batch size)	Name of the Important equipment	Weekly utilization status (all the courses for which the lab is utilized)	Technical Manpower support		
					Name of the technical staff	Designation	Qualification
1	Material Testing (3rdSemester)	25	1. Brinnel's hardness Test set up 2. Rockwell's hardness Testing equipment 3. Vicker's hardness Testing equipment 4. Computerized Universal Testing Machine (100 ton) 5. Torsion Testing equipment 6. Impact Testing equipment 7. Fatigue Testing equipment 8. Metallurgical Microscope 9. Heat Treatment Furnace 10. Wear Testing Machine 11. Magnetic flaw detection 12. Ultrasonic Inspection Equipment 13. Eddy Current Inspection Equipment 14. Polishing Machine 15. Dye Penetrate Test	2 batches x 3 hours = 6 hrs	Mr. Rakesh	Asst Instructor	ITI

2	Machine shop (3rdSemester)	25	Lathe, Milling Machine, Shaping Machine	2 batches x 3 hours = 6 hrs	Mr. Uday	Asst Instructor	ITI
3	Computer Aided Aircraft Drawing (4th Semester)	25	Computers (Solid Edge Version ST10) (60 Users)	2 batches x 3 hours = 6 hrs	Mr. Srinivas CA	Mechanic	ITI
4	Metrology and Measurement Lab (4thSemester)	25	1. Pressure gauge Setup 2. Thermocouple Calibration Test Rig 3. LVDT (Linear Variable Differential Transducer) 4. Digital load indicator Calibrator 5. Strain gauge set up test instrument 6. Sine center, Sine bar 7. Bevel protractor 8. Autocollimator/roller set 9. Two wire and three wire set equipment 10. Mechanical comparator Equipment 11. Gear tooth micrometer equipment 12. Micrometer Equipment 13. Slip gauge set up 14. Tool maker's Microscope 15. Optical profile projector 16. Gear tooth vernier caliper 17. V block 18. Thread pitch gauge 19. Dial indicator with stand 20. Vernier Caliper 21. Granite surface stand 22. Screw & Plain plug gauge	2 batches x 3 hours = 6 hrs	Mr. Srinivas CA	Mechanic	ITI
5	Fluid Mechanics Lab		1. Venturi Meter Test Rig 2. Orifice Meter Test Rig 3. Red Wood Viscometer 4. Notches - Weirs Apparatus 5. Bernoulli's Theorem Apparatus 6. Pipe Friction - Major loss Apparatus	2 batches x 3 hours = 6 hrs	Mr. Chandrashekar K. V.	Mechanic	ITI

	(5thSemester)	25	7. Pipe fittings - Minor loss Apparatus				
6	Energy Conversion Lab (5thSemester)	25	1. Abel-Pensky Apparatus (2No's) 2. Martin-Pensky apparatus(2No's) 3. Bomb Calorimeter 4. Torsion viscometer 5. Cut out Model Four stroke IC Diesel Engine 6. Single Cylinder Four stroke petrol engine – Test rig 7. Multi cylinder Four stroke Petrol engine – Test rig 8. Planimeter	2 batches x 3 hours = 6 hrs	Mr. ChandrashekarK. V	Mechanic	ITI
7	Aerodynamics Lab (5thSemester)	25	Computerized Low Speed Sub Sonic Wind Tunnel and Accessories	2 batches x 3 hours = 6 hrs	Mr. Chandrashekar K	Mechanic	ITI
8	Aircraft Propulsion Lab (6thSemester)	25	1. Burning Velocity of a Pre-mixed flame with blower 2. Nozzle Flow setup 3. Cascade Tunnel 4. Propeller Test Rig with Anemometer 5. Forced Convective Heat Transfer over a lat Plate 6. Boys Gas calorimeter (for Aviation Fuel) 7. Free jet and Wall jet setup 8. Free Convective Heat Transfer over Flat Plate / Aerofoil 9. Turbojet Aero Engine	2 batches x 3 hours = 6 hrs	Mr. Rakesh	Asst Instructor	ITI
10	Aircraft Structures Lab (6thSemester)	25	1. Beam Test Setup Frame-2 No's with Accessories 2. Wagner Beam with Accessories 3. Vibration of Beam with Accessories 4. Shear center location set-up for open sections (unsymmetrical bending) and for closed section	2 batches x 3 hours = 6 hrs	Mr.Chandrashekar K	Mechanic	ITI

11	Flight Simulation Lab (7^{th}Semester)	25	Computers MAT Lab with Add-ons **(30 Users)**	2 batches x 3 hours = 6 hrs	Mr. Chandrashekar K V	Mechanic	ITI
7	Design, Modelling and Analysis Lab (7^{th} Semester)	25	1. Computers (ANSYS 18.1 software) 2. Ansys Academic Structural & CFD **(30 Users)**	2 batches x 3 hours = 6 hrs	Mr. Srinivas CA	Mechanic	ITI
12	Project Lab	1	1. Workshop Facility 2. TRUAV 3. Ornithopter Model 4. Glider Models 5. Rocket Launching Facility 6. Beams engine Mechanism 7. Elliptical trammel 8. UAV Models 9. I Section Spar 10. Computers with Design and analysis Software	Weekly 3-4 Hours	Mr. Chandrashekar K	Mechanic	ITI

Figure 6.1 Material Testing Lab

Figure 6.2 Energy Conversion Lab

Figure 6.3 Fluid Mechanics Lab

Figure 6.4 Aerodynamics Lab

Figure 6.5 Aircraft Propulsion Lab

Figure 6.7 Aircraft Structures Lab

Figure 6.6 Design, Modeling and Analysis Lab

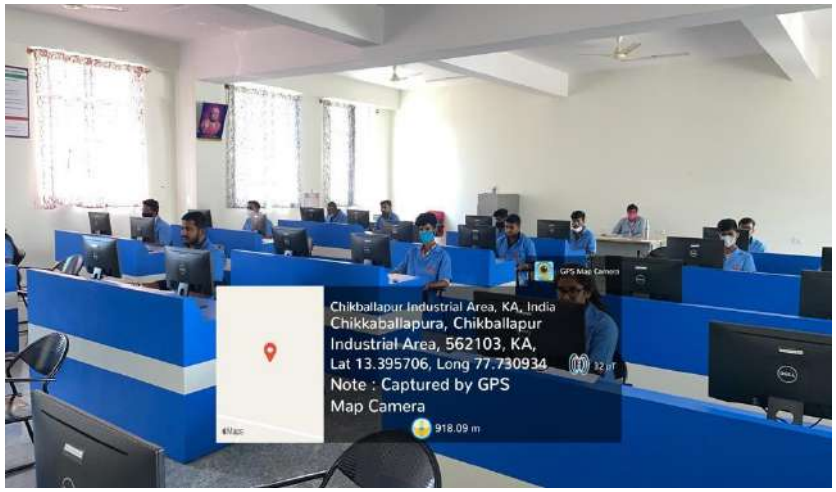


Figure 6.8 Flight Simulation Lab

6.2 Additional facilities created for improving the quality of learning experience in laboratories (25)

Details of additional facilities created for improving the quality of learning experience in laboratories are given in Table B.6.2.

Table B.6.2 Details of additional facilities created for improving the quality of learning experience in laboratories

Sl. No.	Facility Name	Details	Reason(s) for creating facility	Utilization	Areas in which students are expected to have enhanced learning	Relevance to POs/PSOs
1	Aircraft Design Lab	CATIA V5 (30 Users) CATIA V6 (07 Users)	Design and assembly of Aircraft components	• Saturdays and Vacation • MoU with EDS Technologies for level 1 Course of 60 Hours duration	Solid modelling, Assembly modelling, Surface modelling, Drafting	PO3, PO5, P012, PSO1
2	Department Library	• VTU Prescribed Text Books and Reference Books • Project, Seminar and Internship reports. • Research corner	To enable students and staff avail academic specific resources, advanced topics and research work related resources.	Entire Period of their study in the College	Aircraft Propulsion, Aerodynamics, Aircraft Structures, Avionics, Aircraft Stability and control, Aircraft Design, Heat and Mass transfer	PO9, PO11, PO12, PSO1
3	Lab Instruction Class	Discussion on theoretical concept of the experiment to be conducted in the upcoming lab Class.	To provide the students with brief idea about the experiment and its applications.	One Lab Instruction Class per Week/ Lab	Problem identification.	PO1,PO2,PO3, PO4

4	Project lab	Mini Project, Major Project and Self-motivated projects with guidance from the faculty of the department and across other departments. Labs with hardware and software tools.	● To motivate the students to work on real-timeprojects. ● To build creative skills. ● Idea Incubation.	Entire Period of their study in the College	Problem identification and solving. Teamwork. Developing prototype models. Publishing quality research papers in reputed conferences and journals.	PO1, PO2, PO3, PO4, PO5, PO9, PSO1, PSO2
5	Internet Facility	● Internet can be accessed over college LAN	● Self-learning of advanced and cutting-edge research topics. ● Easy access to resources on the internet for better understanding on required topic(s).	Entire Period of their study in the College	Academic and research. Identification of recent trends and challenges in the industry. Online Education	PO1, PSO1, PSO2
6	E Journals, E- books facility		● Self-learning of advanced and cutting-edge research topics. ● Easy access to resources on the internet for better understanding on required topic. ● Bridge gap between academic and recent research areas.	Entire Period of their study in the College	Academic and research. Identification of recent trends and challenges in the industry.	PO1, PSO1, PSO2
7	Seminar Hall	Partially established	To conduct Seminars, Guest lectures, Workshops	Throughout the semester	Communication and Presentation skills.	PO9, PO10

8	HR Classes	Focused to improve the programming and soft skills of the student for placements	It helps the students in enhancing the knowledge of soft skills, Aptitude, Softwares, Ethics	2hours per week and Vacation	Expertise in areas pertaining to industry centric requirements	PO5, PO8, PO9 PO10
9	Accessories For course enrichment	• Posters in Propulsion Lab • Spare Aircraft and Engine components • Models in Aerodynamics Lab	Bridge gap between academics and Industry needs	Throughout the semester	Expertise in areas pertaining to industry centric requirements	PO1, PSO1

Figure 6.9 Aero Jet Engine

6.3 Laboratories: Maintenance and Overall Ambiance (10)n

- All laboratories are well equipped and maintained.
- Regular preventive maintenance of instruments and equipment is carried out before the commencement of the semester.
- Maintenance register is kept in all the laboratories.
- Minor repairs are carried out by the laboratory instructor and records to that effect are maintained.
- Major repairs can be outsourced as per the procedure of the Organization
- All laboratories are equipped with state-of-the-art equipment to meet the requirements of university curriculum.
- Laboratories and equipment are kept clean and dust free with regular cleanliness and maintenance.
- All laboratories have sufficient natural light, good ventilation with lighting and fan arrangement.
- The labs are sufficient to accommodate the mentioned number of students per batch.
- Sufficient instructional area and teaching place for staff and students.
- Vision, Mission, POs, PSOs, PEOs, Do's and Don'ts Boards are displayed
- Notice Board in each lab for all curriculum activities and lab specifications and COEs display
- Labs are equipped with sufficient hardware and licensed software to run program specific curriculum and off program curriculum.
- Computer Labs are provided with printer and internet is connected to all the systems.
- Back Racks are available in each lab for students to place their belongings.

SI No	Curriculum Lab Description	Semester	Exclusive use/ shared	Space/ No. Students	No. of expt.	Quality of Instruments	Lab Manuals	Equipment s	Ambience
1	Machine Shop	III	Shared with MED	50/22- 24 per batch	14+0	Working	Available	Available	Maintained
2	Material Testing Lab	III	Exclusive use	75/22- 24Perbatch	14+0	Working	Available	Available	Maintained
3	Measurements & Metrology Lab	IV	Exclusive use	75/22- 24 per batch	13+0	Working	Available	Available	Maintained
4	Computer Aided Aircraft Drawing	IV	Exclusive use	60/22- 24 per batch	14+0	Working	Available	Available	Maintained
5	Aerodynamics Lab	V	Exclusive use	75/22- 24 per batch	12+2	Working	Available	Available	Maintained
6	Energy Conversion Lab	V	Exclusive use	50/22-24 per batch	7+0	Working	Available	Available	Maintained
7	Fluid Mechanics Lab	V	Exclusive use	50/22-24 per batch	7+0	Working	Available	Available	Maintained
8	Aircraft Propulsion Lab	VI	Exclusive use	50/22-24 per batch	12+0	Working	Available	Available	Maintained
9	Aircraft Structures Lab	VI	Exclusive use	50/22-24 per batch	14+0	Working	Available	Available	Maintained
10	Design, Modelling and Analysis Lab	VII	Exclusive use	30/22-24 per batch	14+0	Working	Available	Available	Maintained
11	Flight Simulation Lab	VII	Exclusive use	30/22-24 per batch	14+0	Working	Available	Available	Maintained

6.4 Project Lab:

This lab is open to all students to help them to complete their mini/Major projects and learn. Equipment is available and ambience is maintained

SI No	Facility Name	Major equipment	Utilization
1	Project laboratory	1. Workshop Facility 2. TRUAV 3. Ornithopter Model 4. Glider Models 5. Rocket Launching Facility 6. Beams engine Mechanism 7. Elliptical trammel 8. UAV Models 9. I Section Spar 10. Computers with Design and analysis Software	Throughout the Semester

6.4 Safety measures in laboratories (10)

The safety measures taken in the laboratories are listed below:

- Students should wear Apron and shoes in the lab.
- Technical supporting staff monitors the labs at regular intervals.
- Technical Supporting staff is trained by vendors to operate and maintain the equipment.
- Laboratories are maintained in a clean and systematic manner.
- Appropriate storage areas are available.
- PCs are loaded with antivirus and Firewall software's.
- Students are restricted from carrying pen drives, CDs or any other storage device

The details of safety/disciplinary measures followed in laboratory are indicated in Table B.6.5.

Sl. No.	Name of the Laboratory	Safety measures
1	Computer Aided Aircraft Drawing, Modeling and Analysis Lab	• Fire Extinguisher. • DO's and DON'Ts • Lab layouts are displayed. • Provided anti-virus software.
2	Simulation Lab	
3	Machine Shop Lab	• DO's and DON'Ts • Lab layouts are displayed. • First Aid Kit • Fire Extinguisher • Earthing • Grouting
4	Energy Conversion Lab	
5	Fluid mechanics Lab	
6	Material Testing Lab	
7	Mechanical Measurements & Metrology Lab	
8	Aircraft Propulsion Lab	
9	Aircraft Structures Lab	
10	Aerodynamics Lab	

Table B.6.5 Safety Measures in laboratories

CRITERIA 7

Continuous Improvement

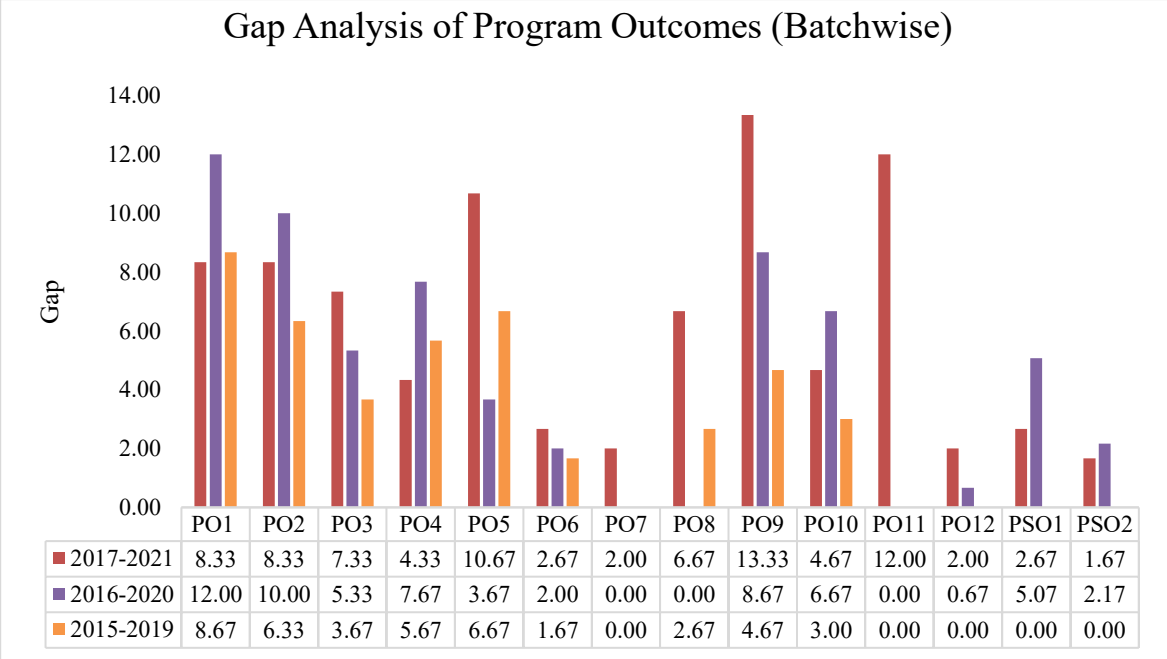
CRITERION 7	CONTINUOUS IMPROVEMENT	50

7.1.1 Actions taken based on the results of evaluation of each of the POs & PSOs (20)

Identify the areas of weaknesses in the program based on the analysis of evaluation of POs & PSOs attainment levels. Measures identified and implemented to improve POs & PSOs attainment levels for the assessment years.

Gap Analysis of Program Outcomes for the three batches: (2015-19, 2016-20, 2017-21)

Figures 7.1 show the Gap Analysis of Program Outcomes and Program SpecificOutcomes for the three batches



	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
2017-2021	8.33	8.33	7.33	4.33	10.67	2.67	2.00	6.67	13.33	4.67	12.00	2.00	2.67	1.67
2016-2020	12.00	10.00	5.33	7.67	3.67	2.00	0.00	0.00	8.67	6.67	0.00	0.67	5.07	2.17
2015-2019	8.67	6.33	3.67	5.67	6.67	1.67	0.00	2.67	4.67	3.00	0.00	0.00	0.00	0.00

Figure 7.1.1: Gap Analysis of Program Outcomes for the three batches

POs & PSOs Attainment Levels and Actions for Improvement – CAY [2017-2021]

Table B.7.1.1: Actions taken based on the evaluation of POs& PSOs CAY-(2017-21)

CAY [2017-2021]			
POs	**Target Level**	**Attainment Level**	**Observations**
PO1: Engineering knowledge: To Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	**2.64**	**2.39**	91% Target has been achieved. 9% gap because of students lack in applying knowledge in subjects such as Aero Thermodynamic, Mechanics of Materials, Turbomachines, Guidance, Navigation & Control, and Avionics.
Action 1: Solve a greater number of problems and assign & discuss extra numerical during Tutorials in fundamental subjects such as Mechanics of Materials, Aerothermodynamics, Mechanics of Fluids and Turbomachines. Action 2: Conductmore number of class room and lab sessions to cover the basic fundamental concepts. Action 3: Remedial classes to be conducted beyond regular planned classes for slow learners.			
PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
PO2	**2.35**	**2.1**	91% Target has been achieved. 9% gap because of students could not identify, formulate and analyze complex problems
Action 1: Incorporate additional numerical problems in assignments and tutorials Action 2: Organize Guest lecture from Industry Experts and arrange Industrial visits to core industries. Webinars on “CFD Analysis of Fluid Flow and Heat transfer characteristics in Gas Turbine” and “Stealth Technology” was organized. Industrial Visits to Air Force Technical College and Engine Division, HAL was arranged. Action2: Remedial Classes be conducted for slow learners beyond regular classes.			
PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate considerations for the public health and safety, and the cultural, societal, and environmental considerations.			
PO3	**2.09**	**1.87**	92% Target has been achieved .8% gap because of students lack in designing solutions for complex problems
Action1: Revision of complex engineering problems, with an emphasis on safety duringdesign. Action2: Students are encouraged and motivated to take up project works that include and pertain to public health and safety, and the cultural, societal, and environmental considerations. Action 3: More design classes to be taught in tutorial classes and Practical approach of teaching to be adapted and Additional classes will be arranged design subjects. Guest Lecture on “Ground Testing of Aircrafts” by Dr. T R Rajanna, General Manager, AERDC, HAL was arranged.			

<table>
<tr><td colspan="4">PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.</td></tr>
<tr><td>PO4</td><td>1.84</td><td>1.71</td><td>95% Target has been achieved.5% gap because of students lack in using research-based knowledge for analyzing and interpreting data</td></tr>
<tr><td colspan="4">Action 1: Direct students toinvestigate complex problems through project work via research methods, data analysis etc. to arrive at solutions based on validation.
Action 2: Additional classes to be conducted with assignments in order to improve the knowledge of the design and analytical courses.</td></tr>
<tr><td colspan="4">PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.</td></tr>
<tr><td>PO5</td><td>2.05</td><td>1.73</td><td>89% Target has been achieved.11% gapbecause of students could not apply and use modern tools in modeling complex activities</td></tr>
<tr><td colspan="4">Action1: Latest resources in terms ofSoftware’s like SOLID EDGE, MATLAB and ANSYS are established in the department as IT tools to analyse solutions complex engineering problems and arrive at the most appropriate solutions which specify requirements in the engineering applications.
Action 2: CATIA V-5 software sought by industries, to be installed in the department to enable student undergo level-1 training course based on MOU signed in collaboration withM/s EDS Technologies.</td></tr>
<tr><td colspan="4">PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.</td></tr>
<tr><td>PO6</td><td>1.42</td><td>1.34</td><td>97% Target has been achieved.3% gap, because of students could not apply contextual knowledge.</td></tr>
<tr><td colspan="4">Action1: Every year students are encouraged to be involved in professional development programme like Manthana (Intellectual development) and cultural programs like Sambrama which has been conducted in the college to infuse responsibilities
Action2: Students are taken to visit industrial visits thereby exposing them to inculcate safety standards adopted by industries
Action 3: The department organizes Intercollege Technical Festival AVION in which is organized by the students.</td></tr>
<tr><td colspan="4">PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable development.</td></tr>
<tr><td>PO7</td><td>1.53</td><td>1.47</td><td>98% Target has been achieved. 2% gap, because students could not understand the impact of professional engineering solutions and demonstrate the knowledge of sustainable development.</td></tr>
<tr><td colspan="4">Action1: Every year students are participating in the world environmental day and plantation programs organized in college.
Action 2: Encouraged students to take part in Swachh Bharat drives, Blood Donation Camps, Village visits, voluntary teaching and mentoring of downtrodden children.</td></tr>
</table>

<table>
<tr><td colspan="4">Action3: Awareness programs on road safety, yoga etc. has been organized in college.
• Free mask distributed for SSLC students at DDPO office, Chickballapur in association with BGS Rotary Club, Chickballapur on 16th July 2021</td></tr>
<tr><td colspan="4">PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.</td></tr>
<tr><td>PO8</td><td>1.78</td><td>1.58</td><td>93% Target has been achieved.7% gap, because of students could not apply ethical principles and demonstrate professional ethics.</td></tr>
<tr><td colspan="4">Action1: Plan to conduct motivational talks and guest lecturer to improve their professional ethics and responsibilities.
Action 2: Case study and mini projects in few courses are assigned to a group of students to inculcate ethics and responsibilities in completed the work.</td></tr>
<tr><td colspan="4">PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.</td></tr>
<tr><td>PO9</td><td>2.49</td><td>2.25</td><td>87% Target has been achieved.13% gap, because of students could not function as an individual, leader in multidisciplinary activities.</td></tr>
<tr><td colspan="4">Action1: Participation in Conferences / Seminars / Workshops.
Action2: Encourage students to participate in Co-curricular (AVION) and Extracurricular activities (NCC/NSS) in order to promote team work
Action 3: Case study and mini projects in few courses are assigned to a group of students to function effectively in completion of the assigned work.</td></tr>
<tr><td colspan="4">PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.</td></tr>
<tr><td>PO10</td><td>2.23</td><td>2.09</td><td>95% Target has been achieved.5% gap, because of students could not communicate, present and write reports effectively.</td></tr>
<tr><td colspan="4">Action1: Communication and presentation training imparted during HR classes as per department academic time table.
Action2: Seminars and report submission on case study/mini projects make the students communicate effectively.
Action 3: Institute has initiated Program which provides a platform to work in individual as well as a group in the fields of Engineering. It helps the students to groom the skills like leadership or as an effective team member. There are a number of societies and clubs where the students learn to work both as individuals and in a team work environment.</td></tr>
<tr><td colspan="4">PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.</td></tr>
<tr><td>PO11</td><td>1.49</td><td>1.13</td><td>88% Target has been achieved. 12% gap, because of students lack in demonstrating knowledge of management principles while managing projects in multidisciplinary environments.</td></tr>
</table>

<table>
<tr><td colspan="4">Action1: Awareness has been created among students regarding projects, team work, financial expenditure, role of team leader &members involved in the project. Relevance of cooperation and timely compilation of project was emphasized
Action 2: Students will be trained about project management and finance management through software tools and students will be taken to field visit to understand project management tools trained.
Webinars on “Technology Entrepreneur as a Career Option” and “Career Opportunities in Aeronautical and Aerospace Engineering” were organized by the department.</td></tr>
<tr><td colspan="4">PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life- long learning in the broadest context of technological change.</td></tr>
<tr><td>PO12</td><td>1.65</td><td>1.59</td><td>98% Target has been achieved.2% gap, because of students could not able to engage in life-long learning.</td></tr>
<tr><td colspan="4">Action1: The proctors guide the students to set their goals and task-related strategies.
Action 2: Students are guided for higher studies on research field, which enhance lifelong learning knowledge of the students.
Action 3: Existence of chapters of professional bodies/ societies like Aeronautical Society of India and events under the banner of these societies gives students opportunity to have a lifelong learning. The students are encouraged to take membership of these societies.</td></tr>
<tr><td colspan="4">PSO1: Apply the fundamental knowledge of Aerodynamics, Propulsion, Structures and Flight controls to solve core contemporary problems</td></tr>
<tr><td>PSO1</td><td>1.75</td><td>1.67</td><td>97% Target has been achieved.
3% gap because of students lack in applying fundamental knowledge of Aero Thermodynamics, Mechanics of Materials, Turbomachines, Aircraft Structure-I, Avionics and Flight Vehicle Design</td></tr>
<tr><td colspan="4">Action 1: Extra Problems related to core contemporary issues in the field of Aeronautical will be given as assignments.
Action 2: Exposure through industrial visit to Aeronautical based establishments, Guest lectures and Seminars from academic and industrial experts currently involved in Aeronautical/ Aerospace fields are conducted.</td></tr>
<tr><td colspan="4">PSO2: Demonstrate and solve multidisciplinary problems to build risk taking abilities & decision-making capabilities in Aeronautical field</td></tr>
<tr><td>PSO2</td><td>1.24</td><td>1.19</td><td>98% Target has been achieved.
2% gap because of studentscould not able to demonstrate and solve multidisciplinary problems</td></tr>
<tr><td colspan="4">Action1: Encourage students to take up projects involving multidisciplinary problems which can help them to take decision during the execution of the projects
Action 2: Club Activities in multidisciplinary areas to be conducted to enable the students to make decisions while organizing and participating in such events</td></tr>
</table>

POs & PSOs Attainment Levels and Actions for Improvement – CAY [2016-2020]

Table B.7.1.2 Actions taken based on evaluation of Pos& PSOs CAYm1- (2016-20)

CAY m1[2016-2020]			
POs	Target Level	Attainment Level	Observations
PO1: Engineering knowledge: To Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	**2.69**	**2.33**	88% Target has been achieved. 12% gap because of students lack in applying knowledge in subjects such as Mechanics of Materials, Aerothermodynamics, Mechanics of Fluids and Turbomachines.
Action 1: Solve a greater number of problems and assign & discuss extra numerical during Tutorials in fundamental subjects such as Mechanics of Materials, Aerothermodynamics, Mechanics of Fluids and Turbomachines. Action 2: Conductmore number of class room and lab sessions to cover the basic fundamental concepts. Action 3: Remedial classes to be conducted beyond regular planned classes for slow learners.			
PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
PO2	**2.3**	**2.0**	90% Target has been achieved. 10% gap because of students could not identify, formulate and analyze complex problems
Action 1: Incorporate additional numerical problems in assignments and tutorials Action 2: Organize Guest lecture from Industry Experts and arrange Industrial visits to core industries. Webinars on “CFD Analysis of Fluid Flow and Heat transfer characteristics in Gas Turbine” and “Stealth Technology” was organized. Industrial Visits to Air Force Technical College and Engine Division, HAL was arranged. Action2: Remedial Classes be conducted for slow learners beyond regular classes.			
PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate considerations for the public health and safety, and the cultural, societal, and environmental considerations.			
PO3	**2.03**	**1.87**	95% Target has been achieved .5% gap because of students lack in designing solutions for complex problems
Action1: Revision of complex engineering problems, with an emphasis on safety duringdesign. Action2: Students are encouraged and motivated to take up project works that include and pertain to public health and safety, and the cultural, societal, and environmental considerations. Action 3: More design classes to be taught in tutorial classes and Practical approach of teaching to be adapted and Additional classes will be arranged design subjects.			

Guest Lecture on "Ground Testing of Aircrafts" by Dr. Rajanna, General Manager, AERDC, HAL was arranged.			
PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.			
PO4	**1.88**	**1.65**	92% Target has been achieved. 8% gap because of students lack in using research-based knowledge for analyzing and interpreting data
Action 1: Direct students toinvestigate complex problems through project work via research methods, data analysis etc. to arrive at solutions based on validation. Action 2: Additional classes to be conducted with assignments in order to improve the knowledge of the design and analytical courses.			
PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.			
PO5	**1.79**	**1.68**	96% Target has been achieved. 4% gapbecause of students could not apply and use modern tools in modeling complex activities
Action1: Latest resources in terms ofSoftware's like SOLID EDGE, MATLAB and ANSYS are established in the department as IT tools to analyse solutions complex engineering problems and arrive at the most appropriate solutions which specify requirements in the engineering applications. Action 2: CATIA V-5 software sought by industries, to be installed in the department to enable student undergo level-1 training course based on MOU signed in collaboration withM/s EDS Technologies.			
PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.			
PO6	**1.34**	**1.28**	98% Target has been achieved. 2% gap, because of students could not apply contextual knowledge.
Action1: Every year students are encouraged to be involved in professional development programme like Manthana (Intellectual development) and cultural programs like Sambrama which has been conducted in the college to infuse responsibilities Action2: Students are taken to visit industrial visits thereby exposing them to inculcate safety standards adopted by industries Action 3: The department organizes Intercollege Technical Festival AVION in which is organized by the students.			
PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable development.			
PO7	**1.43**	**1.54**	Target is attained
Action1: Every year students are participating in the world environmental day and plantation programs organized in college.			

Action 2: Encouraged students to take part in Swachh Bharat drives, Blood Donation Camps, Village visits, voluntary teaching and mentoring of downtrodden children. Action3: Awareness programs on road safety, yoga etc. has been organized in college. • Free mask distributed for SSLC students at DDPO office, Chickballapur in association with BGS Rotary Club, Chickballapur on 16th July 2021			
PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	**1.74**	**1.82**	Target is attained
Action1: Plan to conduct motivational talks and guest lecturer to improve their professional ethics and responsibilities. Action 2: Case study and mini projects in few courses are assigned to a group of students to inculcate ethics and responsibilities in completed the work.			
PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO9	**2.51**	**2.25**	92% Target has been achieved.8% gap, because of students could not function as an individual, leader inmultidisciplinary activities.
Action1: Participation in Conferences / Seminars / Workshops. Action2: Encourage students to participate in Co-curricular (AVION) and Extracurricular activities (NCC/NSS) in order to promote team work Action 3: Case study and mini projects in few courses are assigned to a group of students to function effectively in completion of the assigned work.			
PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.			
PO10	**2.29**	**2.09**	93% Target has been achieved. 7% gap, because of students could not communicate, present and write reports effectively.
Action1: Communication and presentation training imparted during HR classes as per department academic time table. Action2: Seminars and report submission on case study/mini projects make the students communicate effectively. Action 3: Institute has initiated Program which provides a platform to work in individual as well as a group in the fields of Engineering. It helps the students to groom the skills like leadership or as an effective team member. There are a number of societies and clubs where the students learn to work both as individuals and in a team work environment.			
PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.			
PO11	**1.24**	**1.53**	Target is attained
Action1: Awareness has been created among students regarding projects, team work, financial expenditure, role of team leader &members involved in the project. Relevance of cooperation and timely compilation of project was emphasized			

<table>
<tr><td colspan="4">Action 2: Students will be trained about project management and finance management through software tools and students will be taken to field visit to understand project management tools trained. Webinars on “Technology Entrepreneur as a Career Option” and “Career Opportunities in Aeronautical and Aerospace Engineering” were organized by the department.</td></tr>
<tr><td colspan="4">PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life- long learning in the broadest context of technological change.</td></tr>
<tr><td>PO12</td><td>1.57</td><td>1.55</td><td>99% Target has been achieved.
1% gap, because of students could not able to engage in life-long learning.</td></tr>
<tr><td colspan="4">Action1: The proctors guide the students to set their goals and task-related strategies.
Action 2: Students are guided for higher studies on research field, which enhance lifelong learning knowledge of the students.
Action 3: Existence of chapters of professional bodies/ societies like Aeronautical Society of India and events under the banner of these societies gives students opportunity to have a lifelong learning. The students are encouraged to take membership of these societies.</td></tr>
<tr><td colspan="4">PSO1: Apply the fundamental knowledge of Aerodynamics, Propulsion, Structures and Flight controls to solve core contemporary problems</td></tr>
<tr><td>PSO1</td><td>1.57</td><td>1.41</td><td>95% Target has been achieved.
5% gap because of students lack in applying fundamental knowledge of Aero Thermodynamics, Aerodynamics -I, Control Engineering, Guidance, Navigation & Control, Avionics to solve core contemporary problems</td></tr>
<tr><td colspan="4">Action 1: Extra Problems related to core contemporary issues in the field of Aeronautical will be given as assignments.
Action 2: Exposure through industrial visit to Aeronautical based establishments, Guest lectures and Seminars from academic and industrial experts currently involved in Aeronautical/ Aerospace fields are conducted.</td></tr>
<tr><td colspan="4">PSO2: Demonstrate and solve multidisciplinary problems to build risk taking abilities & decision-making capabilities in Aeronautical field</td></tr>
<tr><td>PSO2</td><td>1.54</td><td>1.47</td><td>98% Target has been achieved.
2% gap because students could not able to solve multidisciplinary problems to build risk taking abilities & decision-making capabilities in Aeronautical field.</td></tr>
<tr><td colspan="4">Action1: Encourage students to take up projects involving multidisciplinary problems which can help them to take decision during the execution of the projects
Action 2: Club Activities in multidisciplinary areas to be conducted to enable the students to make decisions while organizing and participating in such events</td></tr>
</table>

POs & PSOs Attainment Levels and Actions for Improvement – CAYm2 [2015-2019]

Table B.7.1.3 Actions taken based on evaluation of POs & PSOs CAYm2- (2015-19)

CAYm2 [2015-2019]			
POs	Target Level	Attainment Level	Observations
PO1: Engineering knowledge: To Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.			
PO1	**2.68**	**2.42**	91% Target has been achieved. 9% gap because of students lack in applying knowledge in subjects such as Mechanics of Materials, Mechanics of Fluids and Helicopter Dynamics,
Action 1: Solve a greater number of problems and assign & discuss extra numerical during Tutorials in fundamental subjects such as Mechanics of Materials, Aerothermodynamics, Mechanics of Fluids and Turbomachines. Action 2: Conductmore number of class room and lab sessions to cover the basic fundamental concepts. Action 3: Remedial classes to be conducted beyond regular planned classes for slow learners.			
PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.			
PO2	**2.27**	**2.08**	94% Target has been achieved. 6% gap because of students could not identify, formulate and analyze complex problems
Action 1: Incorporate additional numerical problems in assignments and tutorials Action 2: Organize Guest lecture from Industry Experts and arrange Industrial visits to core industries. Webinars on “CFD Analysis of Fluid Flow and Heat transfer characteristics in Gas Turbine” and “Stealth Technology” was organized. Industrial Visits to Air Force Technical College and Engine Division, HAL was arranged. Action2: Remedial Classes be conducted for slow learners beyond regular classes.			
PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate considerations for the public health and safety, and the cultural, societal, and environmental considerations.			
PO3	**1.99**	**1.88**	96% Target has been achieved .4% gap because of students lack in designing solutions for complex problems
Action1: Revision of complex engineering problems, with an emphasis on safety during design and Action2: Students are encouraged and motivated to take up project works that include and pertain to public health and safety, and the cultural, societal, and environmental considerations. Action 3: More design classes to be taught in tutorial classes and Practical approach of teaching to be adapted and Additional classes will be arranged design subjects. Guest Lecture on “Ground Testing of Aircrafts” by Dr.Rajanna, General Manager, AERDC, HAL was arranged.			
PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.			

PO4	**1.76**	**1.59**	94% Target has been achieved. 6% gap because of students lack in using research-based knowledge for analyzing and interpreting data
Action 1: Direct students to investigate complex problems through project work via research methods, data analysis etc. to arrive at solutions based on validation. Action 2: Additional classes to be conducted with assignments in order to improve the knowledge of the design and analytical courses.			
PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.			
PO5	**1.89**	**1.69**	93% Target has been achieved. 7% gap because of students could not apply and use modern tools in modeling complex activities
Action1: Latest resources in terms of Software's like SOLID EDGE, MATLAB and ANSYS are established in the department as IT tools to analyse solutions complex engineering problems and arrive at the most appropriate solutions which specify requirements in the engineering applications. Action 2: CATIA V-5 software sought by industries, to be installed in the department to enable student undergo level-1 training course based on MOU signed in collaboration with M/s EDS Technologies.			
PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.			
PO6	**1.25**	**1.20**	98% Target has been achieved. 2% gap, because of students could not apply contextual knowledge.
Action1: Every year students are encouraged to be involved in professional development programme like Manthana (Intellectual development) and cultural programs like Sambrama which has been conducted in the college to infuse responsibilities Action2: Students are taken to visit industrial visits thereby exposing them to inculcate safety standards adopted by industries Action 3: The department organizes Intercollege Technical Festival AVION in which is organized by the students.			
PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable development.			
PO7	**1.48**	**1.50**	Target is attained
Action1: Every year students are participating in the world environmental day and plantation programs organized in college. Action 2: Encouraged students to take part in Swachh Bharat drives, Blood Donation Camps, Village visits, voluntary teaching and mentoring of downtrodden children. Action3: Awareness programs on road safety, yoga etc. has been organized in college. • Free mask distributed for SSLC students at DDPO office, Chickballapur in association with BGS Rotary Club, Chickballapur on 16th July 2021			

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO8	**1.90**	**1.82**	97% Target has been achieved. 3% gap, because of students could not apply ethical principles and demonstrate professional ethics.
Action1: Plan to conduct motivational talks and guest lecturer to improve their professional ethics and responsibilities. Action 2: Case study and mini projects in few courses are assigned to a group of students to inculcate ethics and responsibilities in completed the work.			
PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO9	**2.58**	**2.44**	95% Target has been achieved. 5% gap, because of students could not function as an individual, leader in multidisciplinary activities.
Action1: Participation in Conferences / Seminars / Workshops. Action2: Encourage students to participate in Co-curricular (AVION) and Extracurricular activities (NCC/NSS) in order to promote team work Action 3: Case study and mini projects in few courses are assigned to a group of students to function effectively in completion of the assigned work.			
PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.			
PO10	**2.36**	**2.27**	97% Target has been achieved. 3% gap, because of students could not communicate, present and write reports effectively.
Action1: Communication and presentation training imparted during HR classes as per department academic time table. Action2: Seminars and report submission on case study/mini projects make the students communicate effectively. Action 3: Institute has initiated Program which provides a platform to work in individual as well as a group in the fields of Engineering. It helps the students to groom the skills like leadership or as an effective team member. There are a number of societies and clubs where the students learn to work both as individuals and in a team work environment.			
PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.			
PO11	**1.45**	**1.52**	Target is attained
Action1: Awareness has been created among students regarding projects, team work, financial expenditure, role of team leader & members involved in the project. Relevance of cooperation and timely compilation of project was emphasized Action 2: Students will be trained about project management and finance management through software tools and students will be taken to field visit to understand project management tools trained. Webinars on "Technology Entrepreneur as a Career Option" and "Career Opportunities in Aeronautical and Aerospace Engineering" were organized by the department.			

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life- long learning in the broadest context of technological change.			
PO12	**1.57**	**1.62**	Target is attained
Action1: The proctors guide the students to set their goals and task-related strategies. Action 2: Students are guided for higher studies on research field, which enhance lifelong learning knowledge of the students. Action 3: Existence of chapters of professional bodies/ societies like Aeronautical Society of India and events under the banner of these societies gives students opportunity to have a lifelong learning. The students are encouraged to take membership of these societies.			
PSO1: Apply the fundamental knowledge of Aerodynamics, Propulsion, Structures and Flight controls to solve core contemporary problems			
PSO1	**1.41**	**2.28**	Target is attained
Action 1: Extra Problems related to core contemporary issues in the field of Aeronautical will be given as assignments. Action 2: Exposure through industrial visit to Aeronautical based establishments, Guest lectures and Seminars from academic and industrial experts currently involved in Aeronautical/ Aerospace fields are conducted.			
PSO2: Demonstrate and solve multidisciplinary problems to build risk taking abilities & decision-making capabilities in Aeronautical field			
PSO2	**1.46**	**1.93**	Target is attained
Action1: Encourage students to take up projects involving multidisciplinary problems which can help them to take decision during the execution of the projects Action 2: Club Activities in multidisciplinary areas to be conducted to enable the students to make decisions while organizing and participating in such events			

7.2 Academic Audit and actions taken thereof during the period of Assessment (10)

The Departments of SJCIT are the backbone where trifocal activities such as teaching, research and consultancy services. An academic audit reviews the processes and procedures used by departments to enhance the quality of their Programs in terms of Program Educational Objectives and ensure Program Outcomes (Graduate Attributes) as defined by NBA are achieved against the stipulated targets for which standard practices and processes need to be put in place.

Objective: The primary unit of academic audit is the Department/Program. The main objective of an academic audit is to ascertain departments that have put in place adequate and effective quality assurance mechanisms in terms of strategies, procedures, that ensures quality inputs and consequently quality outputs, their agility in ensuring continuous improvements along with

review of available resources, their optimal utilization, additional resource requirements for providing quality education.

SJCIT- IQAC

The institution has established Internal Quality Assurance Cell (SJCIT-IQAC) during 2017-18 in order to conduct academic audit. The SJCIT-IQAC has put in place an institutewide academic quality management framework to gather evidence-based information on the quality of its programmes and graduates and to encourage a culture of continuous self-improvement through self-reflection of processes and best practices of Programme through Academic Audits. The CO, PO and PSO attainments computed are the quality indicators used in the academic audit of the institution. The Management through IQAC coordinator will decide the main guidelines of academic audit indicating special reference to investigation to be made about the various practices being followed by the departments. The emphasis would remain on teaching, research and services. All attempts will be made to ensure that continuous growth of all major parameters related to quality of education is achieved. The achievement with specific reference to the plan of action related to PEOs and POs/PSOs will be monitored. The IQAC coordinator has authorized SJCIT-IQAC to conduct the audit and collect information through various records that may include the following:

- Department action plan and targets
- Minutes of Departmental meetings of various committees
- Record of content delivery through lectures, practical etc. and
- Result analysis semester (three years) of courses in relation to set targets.
- Results and interpretation of indirect assessment
- Corrective action envisaged
- Recommendations of department Advisory Committee
- Any other evidential material

Roles of SJCIT- IQAC

1. To develop strategies to improve quality.
2. To set quality performance indicators in Teaching, Research and Administration pertaining to departments/programs and other units of the Institution.
3. To develop strategies to evaluate quality performance indicators
    - To evolve and implement self-evaluation proforma for faculty members

- To evolve and implement stakeholders‟ feedback assessment
- To facilitate periodic academic and administrative audit

Requirements

- Involvement of all the stakeholders to evaluate the set quality performance indicators.
- Feedback collection, analysis and dissemination of relevant information citing concerns where improvement measures should be taken.
- Facilitate accreditation and review processes involving external agencies-NBA/NAAC

Entities Involved in Continuous Improvement:

Faculty, Course Coordinators, Program Coordinators, HOD, Department Advisory Board, College Advisory Board.

Documents to be submitted for Audit:

The following records of the faculty members are verified during the internal academic audit.

1) Calendar of Events
2) Appointment order
3) Copy of marks cards and degree
4) Time Table
5) Syllabus
6) Lesson Plan
7) Lecture notes
8) Attendance Register
9) Teachers Work Diary
10) Assignment Questions
11) Question Bank
12) Internal Question Paper and Scheme of Evaluation
13) Internal Test Marks
14) Previous Year Question Papers
15) Special Class Records (if conducted)
16) Teacher- Appraisal Feedback

17) Exam Related Work
18) UG/PG Projects guided
19) Project Proposals submitted
20) Contents beyond Syllabus
21) FDPs/STTPs attended or organized
22) CO-PO Matrix and COs attainment Levels

In addition, the following parameters are audited with respect to each department.

- Teaching, Learning Process:
    a) Lesson Plan, Lecture notes Result Analysis & Evaluation
    b) Counselling& Mentoring
    c) Co-curricular activities: Seminar/Conference/workshop/Guest Lecture conducted and attended
    d) Research Activities: Publications
    e) Value Added Programs
- Results, Placements, Internships, R&D Projects and Higher Studies Statistics

Process:

- Defining intended Course and Program Outcomes
- Identifying Curricular Gaps and strategy (actions) to bridge the gaps
- Designing effective teaching-learning processes
- Developing evaluation schemes for assessment of COs and POs
- Analysing the attainment levels of COs and POs
- Reviewing of the COs, POs and PEOs
- Assuring implementation of quality education along with other activities such as research and services, co-curricular and extracurricular to support attainment of POs

Approach

Institution has formed various committees for conduct and review of activities related to academic audit at the institution and department levels. The composition and functions of these committees are as follows:

1. Institution level Academic Audit / Advisory Board (Internal):

Chairman:

Management Representative/Director

Convener: Principal

Dean - Academic

Dean – Research and Development

Dean - Quality Assurance

External Expert – Academia / Industry

Functions

- Contribute to preparation of SAR especially information related to institutional and finance.
- Seek timeline and action plan from each department for Direct and Indirect assessment of COs and POs and ensure their compliance.
- Interact with employers/industries/alumni for requirements analysis
- Conduct analysis of results and attainment of COs, POs and PSOs for all Departments
- Taking corrective actions and additional inputs for meeting COs/POs/PSOs
- Assessment and revision of COs/PEOs ⎫ Review of Departmental Vision and Mission statements
- Present the analysis of all departments to the BOM/Management
- Develop faculty appraisal system and assess faculty performance annually, report to BOM (Board of Management).

Frequency of Meetings

The committee shall meet once a month, with agenda and action taken record

2. Institution level Academic Audit / Advisory Board (External):

Chairman:

Management Representative/Director

Convener: Principal

Members:

Two External Experts – Academia / Industry preferably retired professors from IISc, IIT, IIIT-B or NIT with sufficient academic and administrative back ground.

VTU Nominee

Functions

- Assessment on institutional achievements and giving corrective actions for meeting POs, PEOs and Mission
- Review of Institutional Vision and Mission statements

Frequency of Meetings

The committee shall meet once a year, with agenda and action taken record

3. Department Level Committees

a. Department Advisory Board:(DAB)

Composition:

Chairman: Principal

Convener: HOD

Members:

Faculty

Current Students

Alumni, Parents

Employers

External Expert – Academia/Industry/Professional Society.

Functions

- Review on assessment of Course Outcomes and their relationship with POs/PSOs
- Validating the actions for continuous improvements of COs, POs and PEOs
- Review on COs, PEOs and Mission statements

- Presenting report to IQAC with resource and academic requirements

Frequency of Meetings

The committee shall meet once a year, with agenda and action taken record

b. Program Assessment Committee (PAC):

Composition:

Chairman: HOD

Convener: Internal Test coordinators

Members: Course Coordinators 2 or 3 Senior and Junior Faculty member

(Professors, Associate Professors, Assistant Professors)

Faculty from Other Department

External Expert – Academia/Industry/Professional Society

Functions

- Prepare and finalize the COs, PSOs, and PEOs in line with the Mission and record the process of development of COs, PSOs and PEOs
- Assessment of COs, POs and PSOs
- Recommendations and suggestions to come out with implementable actions for continuous improvements of COs, POs, PSOs and PEOs
- Conduct assessment of curriculum and resources available to meet the developed COs, PEOs and PSOs, decide additional course contents, electives to bridge the gaps and inform the shortfalls in resources to the Institutional Committee which will evaluate the needs and present the additional requirement to the management
- Conduct assessment of placement record for ensuring PEOs attainments or revision if required
- Supervises the COs and their alignment to POs, assignments, tests, quiz, activities, Bloom's Taxonomy and ensures targets set by faculty are realistic.
- Develop common Performance Indicators for respective Courses aligned to the PO and ensures the faculty develop activities, tests, quiz, assignments related to the common performance indicators as well as for their course specific indicators
- Monitors progress periodically

- Develop a description of the process with questionnaires and tools required for continuous assessment
- Develop faculty self-appraisal questionnaire and student feedback questionnaire
- Decide frequency of assessment of POs – internal and external
- Obtain COs from respective faculty for concerned PO along with their alignment with PO, Bloom's Taxonomy and target of expected achievements
- For direct assessment collects the student results for respective courses aligned to the PO and analyse the average achievement of performance
- Hold discussions with concerned faculty on shortfalls for the achievement of pre-set targets.
- Collects recommendations for improvements
- Prepare and conduct indirect assessment and prepare report
- Record the results and presents to the IQAC on direct and indirect assessment.
- Maintain statistics and update on website

Frequency of Meetings

The committee shall meet once a month/semester/year, with agenda and action take record

Reporting:

The purpose of academic audit is not judgmental but to cause development to happen. The SJCIT-IQAC prepares a report that describes the strengths and weaknesses of each department's efforts to improve academic quality of their programs and identify plans for improvements. The main components of the report would be:

- Recognition of Good practices
- Recognition of well performing departments
- Recommendations for improvements

The audit report is presented to the BoM and made available to the departments to respond to the issues raised in the report. The responses of the departments are going to be part of the final audit report.

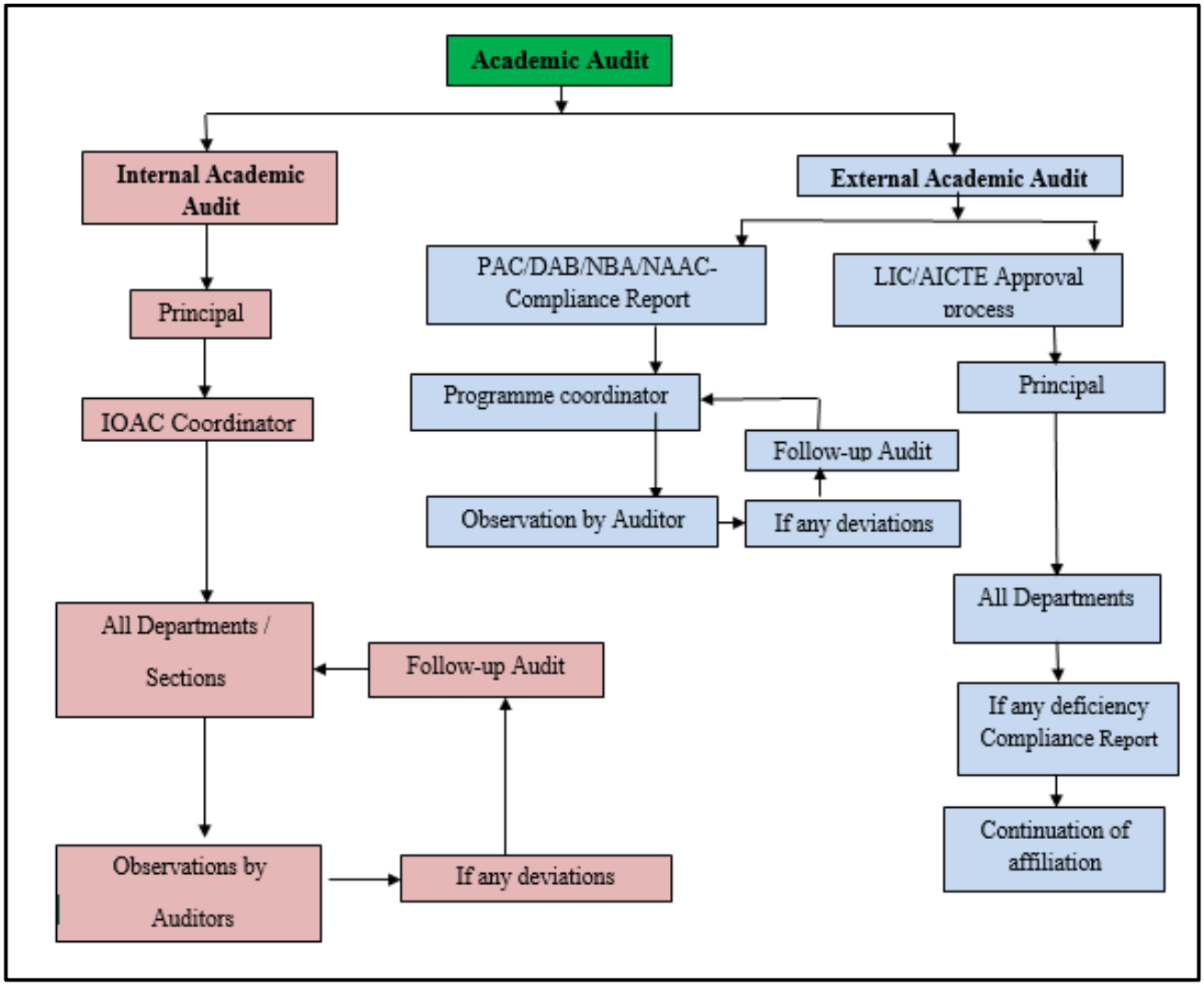


Figure 7.2.1 Academic Audit Process

Actions taken in order to complete the loop:

Based on the feedback/suggestions given by the PAC and the Course Coordinators and Subject Lead, the faculty of the concerned subject may execute some of the following steps that are appropriate for the subject in order to reduce the gap.

1. Additional learning materials prepared and distributed to students
2. Assignments may be given to slow learners to improve their understanding.
3. Solving all the examination and exercise problems in the class itself
4. Encouraging students to take up mini-projects wherever possible enabling them to work in team.
5. Arranging Technical talks / Seminars on the specialized topics by experts from academia/industry

6. Participating in FDPs for better understanding and update of subject knowledge.
7. Taking special/extra classes for weaker students.
8. Conducting presentations/exhibitions to motivate students
9. Conducting workshops for students to improve their skills.
10. Encouraging students to prepare reports on the practicing projects and mini-projects in order to improve their communication and presentation skills

Example: For PO1 of [2020-2021] Batch:

Target: 2.69

Average Attainment Level (AAL): 2.33

Average Attainment = 2.39/2.64 * 100 = 86.65%

For the SubjectC212-Mechanisms and Machine Theory: Attainment Percentage = (1.52/ 3) * 100 = 50.66%

Now the difference (Average Attainment –Attainment of Subject) is calculated.

i.e., (86.65 – 50.66) = 35.98 difference and hence C212-Mechanisms and Machine Theory has not attained PO1.

Average of difference of all subjects for each PO and PSO is calculated. Each subject difference percentage is compared with this average difference and finally if each subject difference percentage is greater than average difference then finally that subject has not attained the target. Similarly, for all the POs and subjects we calculate the AAL and find out the subjects that are really contributing for non-attainment of POs.

Table 7.2.1 Gap analysis of PO1 CAYm1-(2019-2020)

SUBJECT	ATTAINED PO1	TARGET PO1	ATTAINED (ATTAINED/TARGET) *100	Contributing to PO attainment (Y/N)	DIFFERENCE	Contributing to PO attainment (Y/N)
C101-Engineering Mathematics-I	1.87	2.25	83.11	N	3.54	Y
C102-Engineering Physics	2.00	3.00	66.67	N	19.98	Y
C103-Elements of Civil Engineering and Mechanics	1.67	2.00	83.50	N	3.15	Y
C104-Elements of Mechanical Engineering	3.00	3.00	100.00	Above AAL		

C105-Basic Electrical Engineering	2.00	3.00	66.67	N	19.98	Y
C106-Workshop Practice	3.00	3.00	100.00	Above AAL		
C107-Physics Lab	2.00	3.00	66.67	N	19.98	Y
C108-Constitution of India and Professional Ethics	2.00	2.00	100.00	Above AAL		
C109-Engineering Mathematics-II	1.60	2.40	66.67	N	19.98	Y
C110-Engineering Chemistry	3.00	3.00	100.00	Above AAL		
C111-Computer Concepts and C Programming	2.17	2.60	83.46	N	3.19	Y
C112-Computer Aided Engineering Drawing	2.80	2.80	100.00	Above AAL		
C113-Basic Electronics	2.00	2.00	100.00	Above AAL		
C114-CCP Lab	2.40	2.40	100.00	Above AAL		
C115-Engineering Chemistry Lab	3.00	3.00	100.00	Above AAL		
C116-Environmental Studies	1.33	1.33	100.00	Above AAL		
C201-Engineering Mathematics-III	0.73	3.00	24.33	N	62.32	
C202-Elements of Aeronautics	3.00	3.00	100.00	Above AAL		
C203-Aero Thermodynamics	2.16	3.00	72.00	N	14.65	Y
C204-Mechanics of Materials	2.50	2.50	100.00	Above AAL		
C205-Mechanics of Fluids	2.67	3.00	89.00	Above AAL		
C206-Measurements and Metrology	1.97	2.00	98.50	Above AAL		
C207-Material testing lab	0.60	3.00	20.00	N	66.65	
C208-Machine shop lab	3.00	3.00	100.00	Above AAL		
C209-Engineering Mathematics-IV	1.47	2.20	66.64	N	20.01	Y
C210-Aerodynmaics -I	2.20	3.00	73.33	N	13.32	Y
C211-Aircraft Propulsion	2.17	2.80	77.50	N	9.15	Y
C212-Mechanisms and Machine Theory	1.52	3.00	50.67	N	35.98	

Average Percentage of Gap for PO1 is :23.04 %

For the subject C212, difference is 50.67 > 23.04%. Hence C212 is contributing a lot for

non-attainment of PO1.

Finally, a list of all subjects which are not attained PO1 are listed.

Table 7.2.2 List of all subjects which are not attained PO1 CAYm1-(2019-2020)

Subjects whose Average GAP is >57.71 for PO1
C201
C207
C212
C405

Similarly, for all POs and PSOs for all the 3 batches is maintained.

Snapshot of PO1:

Table 7.2.3 Sample gap analysis of PO1 CAYm1-(2016-2020)

SUBJECT	ATTAINED PO1	TARGET PO1	ATTAINED (ATTAINED/TARGET)	PO1 Y/N	DIFFERENCE	PO1 Y/N
C101-Engineering Mathematics-I	1.87	2.25	83.11	N	3.54	Y
C102-Engineering Physics	2.00	3.00	66.67	N	19.98	Y
C103-Elements of Civil Engineering and Mechanics	1.67	2.00	83.50	N	3.15	Y
C104-Elements of Mechanical Engineering	3.00	3.00	100.00			
C105-Basic Electrical Engineering	2.00	3.00	66.67	N	19.98	Y
C106-Workshop Practice	3.00	3.00	100.00			
C107-Physics Lab	2.00	3.00	66.67	N	19.98	Y
C108-Constitution of India and Professional Ethics	2.00	2.00	100.00			
C109-Engineering Mathematics-II	1.60	2.40	66.67	N	19.98	Y
C110-Engineering Chemistry	3.00	3.00	100.00			
C111-Computer Concepts and C Programming	2.17	2.60	83.46	N	3.19	Y
C112-Computer Aided Engineering Drawing	2.80	2.80	100.00			
C113-Basic Electronics	2.00	2.00	100.00			
C114-CCP Lab	2.40	2.40	100.00			

C115-Engineering Chemistry Lab	3.00	3.00	100.00			
C116-Environmental Studies	1.33	1.33	100.00			
C201-Engineering Mathematics-III	0.73	3.00	24.33	N	62.32	N
C202-Elements of Aeronautics	3.00	3.00	100.00			
C203-Aero Thermodynamics	2.16	3.00	72.00	N	14.65	Y
C204-Mechanics of Materials	2.50	2.50	100.00			
C205-Mechanics of Fluids	2.67	3.00	89.00			
C206-Measurements and Metrology	1.97	2.00	98.50			
C207-Material testing lab	0.60	3.00	20.00	N	66.65	N
C208-Machine shop lab	3.00	3.00	100.00			
C209-Engineering Mathematics-IV	1.47	2.20	66.64	N	20.01	Y
C210-Aerodynmaics -I	2.20	3.00	73.33	N	13.32	Y
C211-Aircraft Propulsion	2.17	2.80	77.50	N	9.15	Y
C212-Mechanisms and Machine Theory	1.52	3.00	50.67	N	35.98	N
C213-Aircraft Material Science	2.80	3.00	93.33			
C214-Turbomachines	1.83	3.00	61.00	N	25.65	N
C215-Measurement & Metrology Lab	2.60	3.00	86.67			
C216-Computer Aided Aircraft Drawing	3.00	3.00	100.00			
C301-Management & Entrepreneurship	0.89	1.00	89.00			
C302-Introduction to Composite Materials	2.97	3.00	99.00			
C303-Heat and Mass Transfer	2.88	3.00	96.00			
C304-Aircraft Structure-I	2.92	3.00	97.33			
C305-Theory of Vibrations	2.92	3.00	97.33			
C306-Basics of Rockets & Missiles	1.79	1.80	99.44			
C307-Aerodynamics lab	3.00	3.00	100.00			
C308-Energy Conversion & Fluid Mechanics lab	3.00	3.00	100.00			

C309-Aerodynamics-II	3.00	3.00	100.00			
C310-Gas Turbine Technology	2.76	3.00	92.00			
C311-Aircraft Performance	2.68	3.00	89.33			
C312-Aircraft Structures-II	2.96	3.00	98.67			
C313-Unmanned Aerial Vehicles Basics & Applications	2.92	3.00	97.33			
C314-Maintenance, overhaul & repair of aircraft systems	1.00	1.00	100.00			
C315-Space Mechanics.	2.40	2.50	96.00			
C316-Aircraft Propulsion Lab	3.00	3.00	100.00			
C317-Aircraft Structures Lab	2.00	2.00	100.00			
C401-Control Engineering	1.80	2.60	69.23	N	17.42	Y
C402-Computational Fluid Dynamics	2.88	3.00	96.00			
C403-Aircraft Stability and Control	2.88	3.00	96.00			
C404-Helicopter Dynamics	3.00	3.00	100.00			
C405-Guidance, Navigation & Control	0.80	1.75	45.71	N	40.94	N
C406-Flight Simulation Lab	2.80	3.00	93.33			
C407-Modeling and Analysis Lab	3.00	3.00	100.00			
C408-Project Phase I	3.00	3.00	100.00			
C409-Avionics	0.58	1.25	46.40	N	40.25	N
C410-Flight Vehicle Design	3.00	3.00	100.00			
C411-Flight Testing	3.00	3.00	100.00			
C412-Professional Practice/Internship	3.00	3.00	100.00			
C414-Project Work	3.00	3.00	100.00			
C415-Seminar	3.00	3.00	100.00			

List of Subjects subjects not attained POs and PSOs for CAY [2017-2021] Batch

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C104	C103	C110	C204	C204	C115			C206	C206	C410	C203	C109	C214
C110	C108	C203	C214					C214	C409		C315	C201	C407
C203	C110	C204	C405					C405			C405	C203	
C204	C201	C214	C409					C411			C407	C204	
C214	C203	C405	C411								C409	C214	
C405	C204	C409										C304	
C409	C205											C407	
	C214											C409	
	C405											C410	
	C409												
7	10	6	5	1	1	0	0	4	2	1	5	9	2

Figure 7.2.4: List of Subjects subjects not attained POs and PSOs for CAY-[2017-2021] Batch

List of Subjects subjects not attained POs and PSOs for CAYm1[2016-2020] Batch

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C201	C201	C102	C109	C109	C201	C211	C211	C207	C301	C211	C207	C203	C207
C207	C207	C105	C201	C201				C405	C405		C210	C210	C212
C212	C212	C107	C209	C209				C409	C409		C214	C212	C214
C405	C214	C109	C212								C315	C214	C405
	C405	C201	C214								C405	C401	C409
	C409	C209	C401								C409	C405	C411
		C212										C409	
		C214											
		C405											
		C411											
4	6	10	6	3	1	1	1	3	3	1	6	7	6

Figure 7.2.5: List of Subjects subjects not attained POs and PSOs for CAYm1- [2016-2020] Batch

List of Subjects subjects not attained POs and PSOs for CAYm2[2015-2019] Batch

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C110	C113	C113	C204	C209	C207	C211	C211	C203	C207		C103		C204
C113	C115	C115	C209		C211	C215		C207	C211		C204		C404
C115	C204	C204	C306		C215	C310		C211			C205		C406
C204	C205	C205				C310		C215			C206		C409
C205	C209	C209						C402			C211		
C209		C305									C402		
C315													
C404													
8	5	6	3	1	3	4	1	5	2	0	6	0	4

Fig7.2.6:List of Subjects subjects not attained POs and PSOs for CAYm2- [2015-2019] Batch

7.3 Improvement in Placement, Higher Studies and Entrepreneurship (10)

Item	CAY (2020-21)	CAYm1 (2019-20)	CAYm2 (2018-19)	CAYm3 (2017-18)
Total No. of Final Year Students(N)	39	38	41	38
No. of Students Placed in private Companies and Government Sector (X)	15	14	20	20
No. of Students admitted to higher studies with valid qualifying scores (GATE or Equivalent State or National Level Tests, GRE, GMAT, etc.)(Y)	01	04	04	06
No. of students turned entrepreneur in engineering / technology(Z)	-	01	01	01
Placement Index: (X+Y+Z)	16	19	25	27
Placement Index: (X+Y+Z)/N	0.41	0.5	0.609	0.71
Average placement	0.606			

Table B.7.3: Improvement in Placement, Higher Studies and Entrepreneurship

Students Placements:

Table B.7.3.1: Placement Data 2020-21

CAY-(2020-21)					
Sl. No.	**Name of the student placed**	**Enrolment No.**	**Name of the Employer**	**Appointment Letter**	**CTC**
1.	ABHIJEET	1SJ17AE002	ACCENTURE	11/3/2021	4,50,000
2.	AKASH HA	1SJ17AE004	QUESS CORP. LTD	11/25/2021	2,00,000
3.	AMRUTHA R	1SJ17AE006	MAHINDRA AEROSPACE	04/10/2021.	2,50,000
4.	AVESODDIN SIDDIQUI	1SJ17AE009	SAFRAN ENGINEERING	1/01/2022	3,20,000
5.	C H LOKESH	1SJ17AE012	DASSAULT SYSTEMES	11/10/2021	7,52,068
6.	CHANDANA N	1SJ17AE013	HAL, Internship	12/27/2021	1,10,000
7.	ERAGOWDA H G	1SJ17AE014	TLE Technology	14/10/2021	2,10,000
8.	JASON JEEVAN C J	1SJ17AE017	TE Connectivity	14/10/2021	3,36,000
9.	LOCHANA BM	1SJ17AE020	Innomech Aerospace Toolings Pvt Ltd	02/09/2021	2,37,042
10	MEGHA MANNIKERI	1SJ17AE025	Infosys	21/10/2021	3,36,000
11	NETHRA J	1SJ17AE028	TCS	19/08/2021	3,36,877
12	PAVAN KALYAN B V	1SJ17AE032	TLE Technology	14/10/2021	2,10,000
13	PRUTHVIJA P	1SJ17AE033	Innomech Aerospace Toolings Pvt Ltd	02/09/2021	1,80,000
14	SACHINREDDY	1SJ17AE035	State Govt Job	29/01/2021	3,50,000
15	SRIDEVI M HERLE	1SJ17AE041	CYIENT	4/3/2022	1,44,000
16	MAGDUM ARIHANT RAJGONDA	1SJ17AE021	E-Dall System & Service PVT Ltd	12/2/2021	1,20,000
17	SANDEEP D	1SJ17AE036	CGI Info Systems	1/31/2022	3,60,000
18	SATISH KUMAR H	1SJ17AE039	HP		
19	SIDDHARTH CHANDRA	1SJ17AE040	Cognizant		

20	SUHAS C	1SJ17AE044	ProSIM R&D Pvt. Ltd.	12/27/2021	1,44,000
21	BHARATH B	1SJ17AE011	Axis Cades	02/24/2022	3,36,000
22	NIHAL N	1SJ17AE029	TCS	12/10/2021	4,04,000
23	NISHAT MOMIN	1SJ17AE031	Agdhi	12/29/2021	3,20,000
24	SANDEEP N	1SJ17AE037	MBA, Reva University	11/15/2021	-
25	NANDAN KUMAR	1SJ17AE049	Multiplex Drone Pvt Ltd	21/2/2022	2,16,000

Table B.7.3.2: Placement Data 2019-20

CAYm1-(2019-20)					
Sl. No.	**Name of the student placed**	**Enrolment No.**	**Name of the Employer**	**Appointment Letter reference No. With date**	**CTC**
1.	ASHPAK	1SJ16AE007	Allegis Ltd	1/10/2021	3,66,582
2.	DARSHAN N	1SJ16AE012	Gas Turbine Research Establishment	23/04/2021	3,00,000
3.	HIDAYATHULLA	1SJ16AE015	Sun Rise Biz tech Systems	5/07/2021	3,25,001
4.	GAWAI TUSHAR VILAS	1SJ16AE014	Allegis	31/07/2021	3,70,287
5.	KOMALESH B E	1SJ16AE019	Exigent Group Ltd	26/05/2021	3,42,000
6.	KOTRESH V G	1SJ16AE020	NOVOLYTICS	18/01/2022	5,00,000
7.	LAKSHMI NARASIMHA R	1SJ16AE021	Q SPIDER	10/12/2021	3,00,000
8.	MANUGOWDA	1SJ16AE025	Sericulture Dept, GOK		
9.	NAVEEN M SAJJAN	1SJ16AE029	Verzeo	11/08/2021	2,40,000
10	SAI TULASI NEHASHREE V M	1SJ16AE036	Cap Gemini	23/11/2021	3,00,000

11	SAKSHAM MUTREJA	1SJ16AE037	Amtex Software Solution Pvt Ltd	26/04/2021	3,40,008
12	SANGITA MULLICK	1SJ16AE038	Altran Technologies	11/02/2021	2,16,000
13	SATA JAHNAVI TARUNKUMAR	1SJ16AE041	Akka Technologies	1/02/2022	3,40,000
14	GANNE SHILPA GOVIND	1SJ16AE044	Cap Gemini	23/11/2021	3,00,000
15	SUJEETH P	1SJ16AE045	IBM	20/08/2021	3,00,000
16	VANDANA K N	1SJ16AE047	ADE	07/11/2021	3,00,000
17	YASHWANT S	1SJ16AE049	S&I Engineering Solution Pvt Ltd	19/10/2020	3,11,592
18	ASHUTOSH KUMAR SAHU	1SJ16AE050	XTENTICS	02/09/2021	3,20,056

Table B.7.3.3: Placement Data 2018-19

CAYm2-(2018-19)					
SL NO	**Name of the student placed**	**Enrolment No.**	**Name of the Employer**	**Appointment Letter reference No. With date**	**CTC**
1.	CHAITRA. B. R	1SJ15AE005	TCS	20/09/2018	3,36,875
2.	CHANDANA	1SJ15AE006	UMAC	28/06/2019	2,40,000
3.	CHATURVED S	1SJ15AE007	Gopalan Tech Fabs Pvt	01/02/2020	2,16,000
4.	DHANUSH. G J	1SJ15AE011	TCS	20/09/2018	3,36,875
5.	G. VISHNU	1SJ15AE013	INFOSYS	05/11/2019	3,60,000
6.	KARTHIK G R	1SJ15AE016	Fortune Plastech	01/07/2021	3,00,000
7.	MANJUNATH PATIL	1SJ15AE018	TCS	20/09/2018	3,36,875

8.	MANOJ KUMAR R S	1SJ15AE019	UMLAUT	04/10/2019	2,20,000
9.	NIHARIKA. B	1SJ15AE023	TCS	10/06/2019	3,36,875
10.	NITHIN S M	1SJ15AE025	ADE	13/02/2020	3,00,000
11.	PATIL JAYANT VIJAYKUMAR	1SJ15AE027	Inspira Enterprige LTD	27/12/21	3,60,000
12.	POORNANANDA T	1SJ15AE029	Continental	01/10/2021	2,30,000
13.	PRIYANKA SINGH	1SJ15AE030	CAPGEMINI	24/09/2021	3,00,000
14.	RAGHAVENDRA	1SJ15AE031	M- DRONE	02/04/2019	1,92,000
15.	RAMYA R	1SJ15AE032	JKM HR	23/09/2019	2,40,948
16.	SUSHANTH GOWDA B C	1SJ15AE043	Cap Gemini	08/06/2019	3,00,000
17.	SWATHI S ACHARYA	1SJ15AE044	Quest	23/12/2019	3,00,000
18.	TANUJA. M. S	1SJ15AE045	TCS	20/09/2018	3,36,875
19.	VINUTH N	1SJ15AE051	Cap Gemini	23/09/2019	3,00,000

Table B.7.3.4: Placement Data 2017-18

CAYm3-(2017-18)					
SL NO	**Name of the student placed**	**Enrolment No.**	**Name of the Employer**	**Appointment Letter reference**	**CTC**
1.	AFREEN ANJUM	1SJ14AE002	Sonovision	06/06/2019	2,70,091
2.	AKSHAY KUMAR C	1SJ14AE003	Cades Studec Technologies	24/09/2018	2,40,000
3.	ARAVIND REDDY	1SJ14AE006	TCS	16/10/2018	3,36,875
4.	BINDHU L	1SJ14AE011	BELCAN	31/10/2018	3,00,000
5.	CHETHAN	1SJ14AE012	DIBS	27/02/2020	3,00,000

6.	C SHIVA PRASAD	1SJ14AE013	PCS Global	31/01/2019	3,00,000
7.	DHARANESH VN	1SJ14AE015	Cades Studec Technologies	24/09/2018	3,00,000
8.	GURUSHANTANA GOWDA	1SJ14AE018	Axis cades	31/08/2018	2,40,000
9.	KIRAN I DEVAPUR	1SJ14AE019	TCS	14/01/2019	3,36,875
10.	MANOJ J	1SJ14AE025	Cades Studec Technologies	26/11/2018	3,00,000
11.	NANDHA KUMAR KN	1SJ14AE029	Alten	06/12/2018	2,75,000
12.	PAVAN REDDY A	1SJ14AE033	P3 Consulting Engg Pvt Ltd	13/12/2018	3,00,000
13.	PAVAN T	1SJ14AE035	Cap Gemini	25/03/2019	3,00,000
14.	POOJA	1SJ14AE036	ACCENTURE	29/11/2019	3,60,000
15.	PRASHANTH R	1SJ14AE038	Sonovision	12/07/2019	2,70,091
16.	RAKESH K	1SJ14AE041	Alten India Pvt Ltd	09/05/2019	2,75,000
17.	SHAHID AMEEN KHAN	1SJ14AE044	Newspace Technologies	19/09/2019	6,00,584
18.	SHUBADA	1SJ14AE047	Cap Gemini	08/07/2019	3,00,000
19.	VENKATSH HR	1SJ14AE053	Home Credit Finance Pvt Ltd	01/10/2019	2,08,752
20.	VINAY MR	1SJ14AE054	Collins India Enterprises Pvt Ltd	18/06/2019	3,85,891

Higher Studies:

Table B.7.3.5: Higher Studies 2020-21

CAY-(2020-21)				
SL NO	**Name of the student**	**Enrolment No.**	**Name of the University/Institution**	**Year of Admission**
1	JAHNAVI R	1SJ17AE016	M Tech, RVCE	2022
2	SANDEEP N	1SJ17AE037	MBA, REVA University	2022

Table B.7.3.6: Higher Studies 2019-20

CAYm1-(2019-20)				
SL NO	**Name of the student**	**Enrolment No.**	**Name of the University/Institution**	**Year of Admission**
1	A N R GOWDA	1SJ16AE001	RUAS, Bengaluru	31/07/2021
2	BHUVAN K	1SJ16AE009	Coventry University.UK	19/03/2021
3	NARENDRA R	1SJ16AE027	University Of Dayton, USA	17/12/2020

Table B.7.3.7: Higher Studies 2018-19

CAYm2-(2018-19)				
SL NO	**Name of the student**	**Enrolment No.**	**Name of the University/Institution**	**Year of Admission**
1	AJITH PATIL	1SJ15AE001	MBA, RUAS	14/1/2022
2	GOWTHAM R NAZRE	1SJ15AE015	Kingston University, UK	15/12/2020
3	LAKSHITHA P	1SJ15AE017	Srinivas University, Mangalore	22/01/2021
4	SANTHOSH GAUTHAM	1SJ15AE037	Lewis University, USA	10/11/2021
5	VAISHNAVI P	1SJ15AE048	Anglia Ruskin University, UK	17/07/2020
6	VIVEK K S	1SJ15AE052	International University of Applied Science,	01/09/2021

Table B.7.3.8: Higher Studies 2017-18

CAYm3-(2017-18)				
SL NO	**Name of the student**	**Enrolment No.**	**Name of the University/Institution**	**Year of Admission**
1	AKSHAYRAJ .N	1SJ14AE004	RUAS, Bengaluru	28/09/2018
2	ARUN SUNNY.A.R	1SJ14AE007	Arden University	31/05/2019
3	PAVAN.B.V	1SJ14AE034	IUBH University of Applied Science,	01/09/2019
4	SHREYAS.G.R	1SJ14AE046	VTU VIAT, Bengaluru	11/10/2018
5	SUHAS.B.L	1SJ14AE050	RMIT University, Australia	01/03/2021
6	MUBEENAHMAD M MUDDEBIHAL	1SJ14AE028	ENAC, France	29/03/2019

7.4. Improvement in the quality of students admitted to the program (10)

Table B.7.4: Improvement in the quality of students admitted to the program

Item		CAY (2020-21)	CAYm1 (2019-2020)	CAYm2 (2018-2019)	CAYm2 (2017-2018)
National Level Entrance Examination, COMED-K	No. of Students admitted	-	-	01	05
	Opening Score/Rank	-	-	41752	25054
	Closing Score/Rank	-	-	41752	47226
State/University/ Level Entrance Examination/ Others (Name of the Entrance Examination) KCET	No. of Students admitted	30	14	19	17
	Opening Score/Rank	23229	12533	10833	12093
	Closing Score/Rank	115370	65613	24616	19746
Name of the Entrance Examination for Lateral Entry or Lateral entry details KCET (DIPLOMA)	No. of Students admitted	1	-	-	-
	Opening Score/Rank	15680	-	-	-
	Closing Score/Rank	15680	-	-	-
Average CBSE/Any other Board Result of admitted students (Physics, Chemistry & Mathematics)		75.07	74.06	77.44	73.63

PART B

Institute Level Criteria

CRITERIA 8

First Year Academics

CRITERION 8	FIRST YEAR ACADEMICS	50

8. FIRST YEAR ACADEMICS (50)

8.1 First year Student-Faculty Ratio (FYSFR) (5)

The data related to first year courses namely number of students, number of faculty and the first-year student's faculty ratio given in table 8.1.

Table. 8.1: First Year Student's Faculty Ratio

Year	Number of Students (Approved Intake Strength)	Number of Faculty Members (Considering fractional load)	FYSFR	Assessment= (5 x20)/ FYSFR (Limited to Max. 5)
CAY (2020-21)	840	42	20	5
CAYm1(2019-20)	840	42	20	5
CAYm2(2018-19)	720	38	19.0	5
Average	800	40	19.0	5
Average assessment				**5.0**

8.2. Qualification of Faculty Teaching First Year Common Courses (5)

Assessment of qualification = (5x +3y)/RF, x= Number of Regular Faculty with Ph. D, y = Number of Regular Faculty with Post-graduate qualification RF= Number of faculty members required as per SFR of 20:1.

The qualification details of faculties who are involved in handling first year common courses are given in table 8.2.

Table 8.2: Qualification of Faculty Teaching First Year

Year	X	Y	RF	Assessment of faculty qualification (5x + 3y)/RF
2020-21 (CAY)	6	32	42	3.0
2019-20 (CAYm1)	5	33	42	2.0
2018-19 (CAYm2)	6	29	36	3.0
Average Assessment			**2.67**	

8.3. First year Academic Performance (10)

Academic Performance = ((Mean of 1st Year Grade Point Average of all successful Students on a 10-point scale) or (Mean of the percentage of marks in First Year of all successful students/10)) x (number of successful students/number of students appeared in the examination)

Successful students are those who are permitted to proceed to the second year.

Formula used for evaluating academic performance is shown in the below example.

Academic Performance = (Mean of the percentage of marks in First Year of all successful students/10)) x (number of successful students/number of students appeared in the examination)

First year academic performance for the three assessment years are presented in the below table.B.8.3.

Table .8.3 First Year Students Academic Performance for the year 2019-20,2018-19,2017-18

Academic Year	Branch	Appeared for Examination	No. Successful Students	Mean of the percentage of marks in First Year of all successful students	API	Average API
2019-20	**Aeronautical Engineering**	47	39	7.1	5.89	6.80
2018-19		65	56	6.84	5.89	
2017-18		48	40	7.56	6.30	

8.4. Attainment of Course Outcomes of first year courses (10)

8.4.1. Describe the assessment processes used to gather the data upon which the eva1uation of Course Outcome of first year is done. (5)

The various assessment methods used to gather the data, upon which the evaluation of Course Outcomes of first year is done are as follows. The course outcomes are defined by faculty. The course contents are delivered both at theory and lab classes. Course Outcome (CO) & Semester End Examination (SEE) targets are fixed for various courses at the department level, based on the earlier performance of the students in the semester end examination. The Evaluation of the students' performance is done through Internal Assessment. In case of theory courses, three Internal Assessment tests are conducted, namely Internal Assessment – 1, Internal Assessment - 2, Internal Assessment - 3 and then the average of three Internal Assessment with Assignment marks are considered for course attainment evaluation. However, in case of lab courses, assessment is done based upon continuous evaluation, which include conduction of experiments, lab record, viva – voce and lab Internal Assessment.

If Attainment % is >= CO Target in Internal Assessment test &Attainment % is >= CO Target in Semester End Examination target is met, then the final course attainment level is calculated giving 40% weightage to marks in Internal Assessment test (theory or lab) and 60% weightage to marks in Semester End Examination.

. If the set target is not attained, action plan will be prepared for the next academic period. Under the action plan various academic activities will be proposed and implemented to achieve set targets.

Assessment tools are categorized into two methods to assess the course outcomes as:

1. **Direct method**
2. **indirect method**

1. **Direct methods:** The student's knowledge and skills from their performance in the continuous internal assessment tests, semester examinations, seminars, class room and laboratory assignments etc. These methods provide a sampling of what students know and/or can do and provide strong evidence of student learning.
2. **Indirect methods:** surveys on students learning. They assess opinions or thoughts about the course knowledge or skills and their valued by different stakeholders.

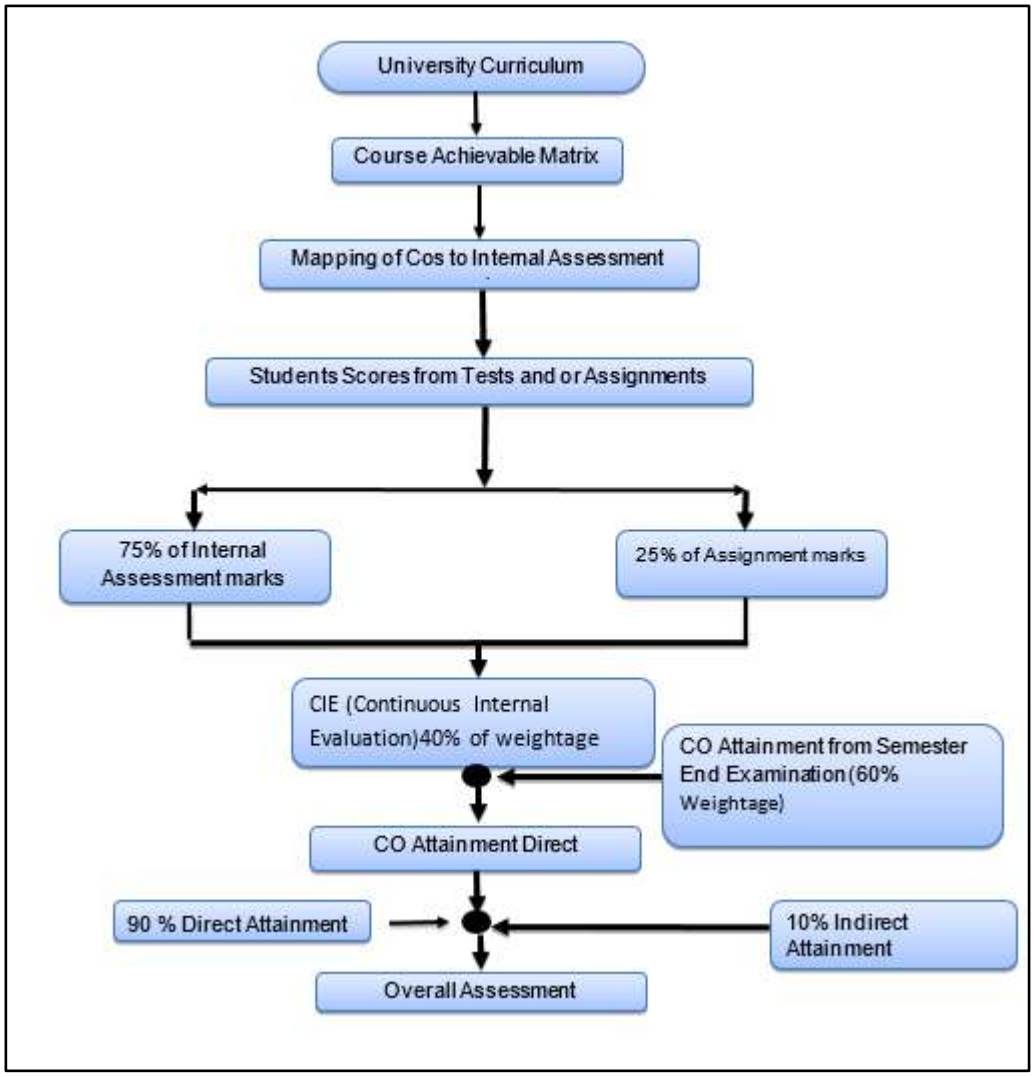
The following table 8.4.1 shows the Direct and Indirect Assessment methods for CO attainment.

Table.8.4.1 Direct and Indirect Assessment methods

Direct Assessment Methods			
Sl. No	**Assessment Method**	**Description**	**Frequency**
1	Internal Assessment Test (IA)	Internal tests are conducted for 30 marks for 2017 scheme & 40 marks for 2018 scheme by covering the course syllabus.	Three times in a semester as per the schedule
2	Semester End Examinations (SEE)	University will be conducting semester end exam as follows • 60 Marks for 2017 scheme • 100 Marks for 2018 scheme	End of the Semester
3	Lab Assessment (Internal)	Lab internals are conducted for 10 marks for 2017 scheme and 25 marks for 2018 scheme by covering the course experiments. Evaluation of lab record is as follows • 30 marks for 2017 scheme • 40 marks for 2018 scheme	• Lab Record Evaluation- Weekly • Lab Internal - once per Semester (End of each semester)
4	Practical examinations	As per the university guidelines Lab externals are conducted for 60 marks for 2017 scheme & 100 marks for 2018 scheme by covering the course experiments.	End of the Semester
5	Assignment (Applicable only for CBCS scheme)	Students are assigned with questions relevant to courses and will be evaluated for 10 marks for the 2017&	As per the subject requirement

		2018 scheme.	
Indirect Assessment Method			
6	Course Exit Survey	Collecting variety of information about course content delivery from the student end.	End of the semester

The following Flow chart 8.4.1 depicts the process followed for CO attainment using both the assessment methods.



Direct method

The components used for direct assessment method areInternal Assessment (IA) and Semester End Examination (SEE) with a weightage of 40% and 60% respectively. IA assessment for theory courses is based on marks scored by a student in Tests, Assignment.

CO Attainment through IA

Course Outcome (CO) attainment illustrates the performance of a student in a particular course. CO attainment is calculated based on students score in each assessment tools.

Course Achievable Matrix

The course outcomes for every course are defined based on the Bloom's taxonomy learning levels. The course achievable matrix is derived from the course content. The course coordinator ensures the distribution of COs in each question paper which will be further verified by Program Coordinator.

Test (IA)

CO attainment is calculated by considering the marks of each question in the question paper for all the three tests. Each question in test question papers is mapped with COs. Through this mapping we get the student score for each CO.

Laboratory

Laboratory associated courses contributes to CO attainment through the marks scored in conduction of experiments and laboratory test by the end of each semester.

CO Attainment through SEE

CO attainment through SEE will be derived from the Marks scored by the students in the university examination in that particular course.

Indirect method

Indirect method includes course end survey for particular course in a semester. Feedback will be collected at the end of every course are mapped to COs. All these components contribute to 10% of CO attainment.

8.4.2. Record the attainment of Course Outcomes of all first year courses.(5)

Program shall have set the target levels for all first year courses

Process for the CO attainment: Course Outcome for a course identifies the knowledge and skills gained by the students upon completion of the course. Course attainment is a measure of the course outcomes acquired by the students. The COs is discreetly defined based on the Syllabus of each course.

Expected Attainment: The expected attainment level is the threshold of attainment, which the student has to gain after completion of each course. The expected attainment levels for each course are set based on the previous attainment level for that course or based on class average marks. The students are required to achieve the expected CO attainment level which facilitates the CO attainment of that particular course. If the attainment of the course is not meeting the target level, course coordinators retrospect the reason and recommend for modification of course curriculum or the delivery/assessment method, to improve the CO levels. If the course is introduced for the first time the target level is set based on the inputs from faculty expertise in that course.

Course Outcome Attainment: The process of CO attainment, based on direct and indirect methods is as depicted in Figure below. The CO of every course is mapped with PO as defined by NBA. Question papers of CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) are mapped with CO to arrive at individual CO weightage. CO attainment of each student is calculated based on CIE, SEE, laboratory, assignment and self-study performance. The CO attainment of students is averaged to obtain target attainment level

Course Outcome attainment Target levels for all first year courses 2019-20

Course outcome Attainment				
Sl.No	Assessment Method	Maximum Marks	Course outcome Target	
			Percentage	Marks
1	Internal Assessment Test (IA)	40	40%	24
2	Semester End Examinations (SEE)	60	60%	30
3	Lab Assessment (Internal)	40	40%	24
4	Practical Examinations	60	60%	30

Table 8.4.2: Assessment target for Course Outcomes Evaluation (2019-20)

Set attainment level for above course outcomes targets are:

Attainment Level 1: 50% of students scored more than set target level in the final examination.
Attainment Level 2: 55% of students scored more than set target level in the final examination.
Attainment Level 3: 60%of students scored more than set target level in the final examination

Attainment of Course Outcomes (2019-20) Batch			
Sl No.	Course Code	Title of the Course	CO Attainment of 1st year course
1.	C101	Calculus And Linear Algebra	2.05
2.	C102	Engineering Chemistry	3
3.	C103	C Programming for Problem Solving	1
4.	C104	Basic Electronics	3

5.	C105	Elements Of Mechanical Engg.	3
6.	C106	Engg. Chemistry Lab	3
7.	C107	Computer Programming Lab	3
8.	C108	Technical English I	3
9.	C109	Advanced Calculus and Numerical Methods	2.46
10.	C110	Engg. Physics	3
11.	C111	Elements Of Civil Engg. & Mechanics	2
12.	C112	Engg. Graphics & Design	3
13.	C113	Basic Electrical Engg.	2.5
14.	C114	Basic Electrical Lab	1.8
15.	C115	Engg. Physics Lab	3
16.	C116	Technical English-2	3

Table 8.4.2: Attainment of Course Outcomes of all first-year courses for the academic year CAY 2019-20

8.5. Attainment of Program Outcomes from first year courses (20)

8.5.1 Indicate results of evaluation of each relevant PO and/or PSO, if applicable (15)

Program Outcome attainment levels shall be set for all relevant POs and/or PSOs through first year courses.

The assessment tools used for CO attainment levels are internal assessment, semester End Examination, continuous evaluation of lab course, assignment indirect assessment.

PO is estimated using the formula (PO average value from CO PO matrix **x** Final CO attainment level)/3.

The following flow chart indicates the results of evaluation of each relevant PO

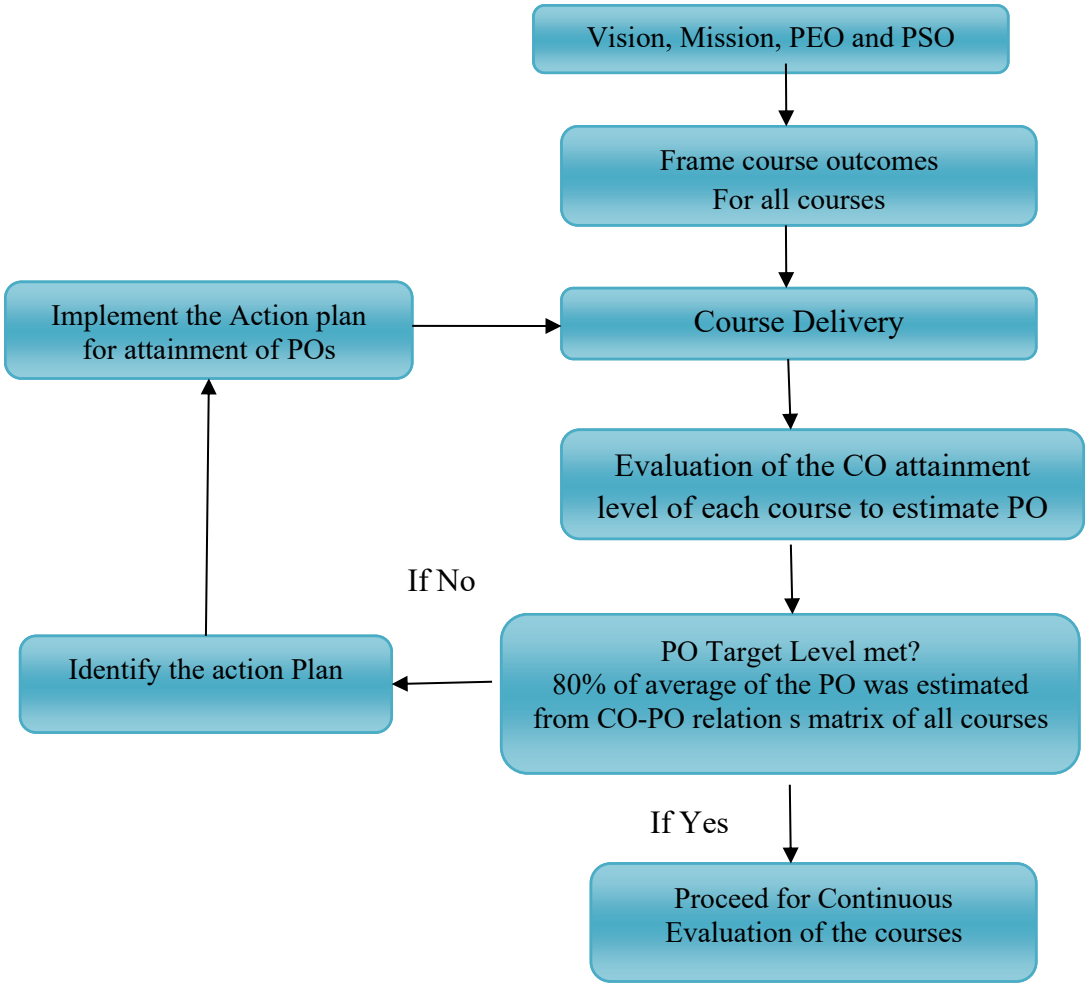


Figure 8.5.1: Results of evaluation of each relevant PO

Table B.8.5.1a: Overall PO Attainment for the year 2019-2020 (CAY)

Courses	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
I SEMESTER												
C101Calculus and linear Algebra	1.64	1.37	1.20	1.37	0.68							0.68
C102Engg. Chemistry	3.00	2.00	-	-	-	-	2.00	-	-	-	-	-
C103 C Programming for Problem Solving	0.75	0.58	0.58	0.33	0.58						0.58	0.50
C104Basic Electronics	2.50	3.00	3.00	-	-	-	-	-		-	-	-
C105Elements of mechanical engineering	3.00	1.0			1.0		1.0			-	-	-
C106Engg. Chemistry lab	3.00	1.00	-	-	-	-	-	-	1.00	-	-	-
C107 Comp. Programming lab	2.40	2.40	2.00	2.00	2.00	-	-	-	-	-	-	2.00
C108Technical English 1	2.00	2.40	1.80	2.00	1.00	2.0	2.0	1.80	2.70	3.00	2.40	3.00
II SEMESTER												
C109Advanced Calculus and Numerical Methods	1.35	1.12	0.98	1.12	0.56	-	-	-	-	-	-	0.56
C110Engg. Physics	2.05	1.36		-	-	-	-	-	-	-	-	-
C111Basic Electrical Engg.	2.50	1.94	1.25	-	-	-	-	-	-	-	-	-
C112Elements of Civil Engg.	2.60	2.25	3.00		2.00					1.00		
C113Engg. Graphics	3.00	2.00	2.00	1.00				2.00	2.00			
C114Engg. Physics lab	2.50	1.83	1.66	-	-	-	-	-	-	-	-	-
C115Basic Electrical lab	2.20	1.47	1.17	-	-	-	-	-	-	-	-	-
C116Technical English-2	1.0	2.00	1.50	1.60	0.60	1.7	1.80	1.40	2.0	2.50	1.80	2.50
Average PO Attainment	**2.22**	**1.73**	**1.68**	**1.55**	**1.05**	**1.85**	**1.70**	**1.73**	**1.88**	**2.17**	**1.59**	**1.46**

POattainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Target	2.58	2.01	1.73	1.56	1.19	2.10	1.85	1.80	2.00	2.33	1.98	1.62
Avg attainment	2.22	1.73	1.68	1.55	1.05	1.85	1.70	1.73	1.88	2.17	1.59	1.46

Table B.8.5.1b: Overall PSO Attainment for the year 2019-2020 (CAY)

Course	PSO1	PSO2
I SEMESTER		
C101 Calculus and Linear Algebra	1.2	0.81
C102 Engg. Chemistry	0.86	0.61
C103 Programming for Problem Solving	1	1
C104 Basic Electronics	2.2	1
C105 Elements of Mechanical Engg.	1.	1
C106 Engg. Chemistry Lab	2	1
C107 Computer Programming Lab	2	1
C108 Technical English I	1.5	1
II SEMESTER		
C109 Advanced Calculus and Numerical Methods	1.28	0.85
C110 Engg. Physics	1.2	0.60
C 111 Elements of Civil Engg. & Mechanics	1.33	0.33
C112 Engg. Graphics & Design	2	1
C113 Basic Electrical Engg	1.33	1.4
C114 Basic Electrical Lab	1.02	0.73
C115 Engg. Physics Lab	1.5	1
C116 Technical English-2	2	1

PS Attainment	PSO1	PSO2
Target	1.92	1.0
Avg attainment	1.46	0.9

8.5.2 Actions taken based on the results of evaluation of relevant POs (5)

PO Attainment Levels and Actions for improvement for CAY (2019-20) Mention for relevant POs.

<table>
<tr><th colspan="4">CAY (2019-20)</th></tr>
<tr><th>POS</th><th>Expected PO Target Level (Avg)</th><th>Attained PO Target Level (Avg)</th><th>Observations</th></tr>
<tr><td colspan="4">PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.</td></tr>
<tr><td>PO1</td><td>2.64</td><td>2.22</td><td>PO1 is not achieved. 15% gap is identified.
Students lack in applying knowledge of Mathematics, C programming, Basic Electronics, Basic Electrical Engineering & Physics in solving complex engineering problems</td></tr>
<tr><td colspan="4">Action 1: Planned to conduct tutorial, remedial classes.
Action 2. Planned to conduct Bridge courses, more complex problems are distributed to the students.</td></tr>
<tr><td colspan="4">PO2: Problem analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.</td></tr>
<tr><td>PO2</td><td>2.04</td><td>1.73</td><td>PO2 is not achieved.15% Gap. Students could not have identified, formulate and analyse complex problems in mathematics, chemistry, C programming, Basic electronics, Basic electrical engineering.</td></tr>
<tr><td colspan="4">Action1.: Planned to conduct additional classes in order to complex problems coated by the students.
Action 2. Planned to give Higher learning level questions CIE assessment level is increased in all these subjects.</td></tr>
<tr><td colspan="4">PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.</td></tr>
<tr><td>PO3</td><td>1.81</td><td>1.68</td><td>PO3 is not achieved. 7% Gap. Students are lack in designing solutions for complex problems in the subjects</td></tr>
<tr><td colspan="4">Action 1.: planned to conduct one extra hour which is more than the university prescribed number of hours.
Action2: planned to conduct Special classes.</td></tr>
</table>

<table>
<tr><td colspan="4">PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.</td></tr>
<tr><td>PO4</td><td>1.62</td><td>1.55</td><td>PO4 is not achieved. 4% Gap. Students lack in using ideology-based knowledge for analysing Mathematical problems, Basic Electronics, Basic Electrical Engineering, Elements of Civil Engineering.</td></tr>
<tr><td colspan="4">Action 1: Planned to counsel the students and advised to attend extra coaching classes beyond the regular planned classes Action2: Coaching classes were conducted for Programming beyond the regular planned classes.</td></tr>
<tr><td colspan="4">PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.</td></tr>
<tr><td>PO5</td><td>1.29</td><td>1.05</td><td>PO5 is not achieved, 18% Gap. students could not apply and use modern tools in modelling complex activities in the subjects like Mathematics, Elements of Civil Engineering, Basic Electrical Engineering.</td></tr>
<tr><td colspan="4">Action 1: planned to conduct Extra classes, assignments and handouts.</td></tr>
<tr><td colspan="4">PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.</td></tr>
<tr><td>PO6</td><td>2.10</td><td>1.85</td><td>PO6 is not achieved. 12. % Gap. Students are not applied contextual knowledge in assessing societal safety and legal issues in the subjects.</td></tr>
<tr><td colspan="4">Action 1: Planned to organize professional society related activities in higher semester. Action2: Planned to arrange Special lectures.</td></tr>
<tr><td colspan="4">PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.</td></tr>
<tr><td>PO7</td><td>1.85</td><td>1.70</td><td>PO7 is not achieved. 8% Gap. Student could not understand impact of professional engineering solutions & demonstrate the knowledge of sustainable development in the subjects</td></tr>
<tr><td colspan="4">Action 1: planned to conduct additional classes &experiments.</td></tr>
</table>

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice			
PO8	1.80	1.73	PO8 is not achieved. 3% gap. Students could not able to follow the ethics and fundamentals of the subjects.
Action 1: planned to conduct special lecture on Universal human values.			
PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO9	2.0	1.88	PO9 is not achieved. 6% Gap. students lack of interest in and involvement in the team work
Action 1; Planned to form a separate group and conducting the seminars.			
PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.			
PO10	2.33	2.17	PO10 is not achieved,9% Gap. Students could not communicate, present and write reports effectively.
Action 1. Planned to organize seminars, presentations & report writing skills in a group wise.			
PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.			
PO11	1.98	1.59	PO11 is not achieved. 19% Gap. In the first level all the courses are not mapped with PO properly.
Action1: planned to conduct workshops on project management to demonstrate knowledge and understanding of the engineering and management principles			
PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.			
PO12	1.67	1.46	PO12 is not achieved, Students could not able to engage in lifelong learning.
Action1: planned to Encourage students to conduct seminars, literature survey on current trends.			

PSOs Attainment Levels and Actions for Improvement- (2019-20)

PSO	Target Level	Attainment Level	Observations
PSO1	1.92	1.46	PSO1 is not Achieved .24% Gap. Students lack in applying knowledge of Mathematics, Chemistry, C programming for problem, Basic Electronic Engineering, Basic electrical Engineering & Physics in solving complex engineering problems.
Action1: Planned to conduct Extra Classes and assignments are given in the respective subjects. Action2: Planned to conduct additional problems are solved in the class hours			
PSO2	1	0.90	PSO2 is Not Achieved .10% Gap. Students could not have identified, formulate & analyse complex problems in Mathematics, Chemistry, C Programming, Basic Electronics, Basic Electrical Engineering
Action1: Planned to conduct extra hours to solve complex problems coated by the students. Action2: Planned to give question bank of higher order problems in the respective subjects.			

CRITERIA 9

Student Support Systems

CRITERION 9	STUDENT SUPPORT SYSTEMS	50

9. STUDENT SUPPORT SYSTEMS (50)

9.1. Mentoring System to help at Individual level (5)

The Institution has well defined mentoring process for all the programs. The mentoring system is established with the following objectives.

1. Interact with the students and help them to face challenges.
2. Monitor academic progress
3. Enhance interpersonal skills
4. Understand the student potential and enabling carrier planning.
5. Motivate students to take part in co-curricular and extra-curricular activities.

Through the mentoring system a complete track of the student activities like academic, co-curricular, extracurricular achievements, social activities and the details of parent-teacher meeting are registered.

A standard mentoring register (Proctorial Performa) has been developed and the staff members record the data in the register. Each staff is allocated with 20 students under the mentoring system. The faculties will have a meeting with the students periodically and the frequency of meeting is three times in a semester. The academic progress and all his activities are discussed and recorded. Any discrepancies would be addressed by the mentor. On case-to-case basis student would be taken up for high level counseling.

The institution has four level mentoring systems. The nature of mentoring at different levels is represented in the Table B.9.1.

Table B.9.1 Different levels of mentoring systems

Sl. No.	Proctor level	Particulars	
1	Level -1 Proctor System	Mentors	Teaching faculty act as Mentor
		No. of students per mentor	20
		Frequency of meeting	Meeting is conducted every month after internal assessment Test (three time in a semester)
		Parents Teachers Interaction	The Parents feedback is collected after every meet by respective mentors
2	Level-2 Proctor System	Proctor Coordinator/HOD counseling	The feedback analysis will be referred by the Proctor Coordinator/HOD for corrective measures based on the need.
3	Level-3 Proctor System	Counseling by the Principal	After the second level of counseling the students would be counseled by the Principal based on the need.
4	Level-4 Proctor System	Professional counseling	After the third level of counseling the students would be counseled by the Professional Counselor based on the need.

The mentoring process has improved the academic performance of the students which intern has reduced the student dropouts.

9.2. Feedback analysis and reward / corrective measures taken, if any (10)

The institution has established feedback process for all the courses. The students give the feedback on the performance of the faculty through teacher appraisal form.

Teacher appraisal feedback form is designed at the institution level by considering different dimensions of the teaching learning process. The objective of this appraisal is to evaluate the performance of the faculty members. This is collected from the students once in a semester. The mode of collecting the feedback is online.

The performance of faculty member is assessed by taking feedback from students on the

following ten points.

1. Preparation of the class
2. Stressing on Important ideas and points
3. Communication of the lecturer
4. Response to the Questions and doubts.
5. Coverage of syllabus
6. Availability of Teacher outside the class hours.
7. Usefulness of notes given
8. Knowledge gained by attending the class.
9. Maintenance of discipline in the class
10. Overall ranking of performance of teacher

Rating Scale

Excellent-A Good-B Satisfactory- C Poor-D

Requirement: A+B ≥ 85%

The feedback data is analyzed and the consolidated report is submitted to the respective HOD‟s for further corrective measures. If a faculty gets below 85% of feedback, detailed analysis would be made by the faculty and analyze the route cause for the low performance. Such faculty would submit explanation report to the HOD. The HOD makes necessary recommendations. Performance rating of faculty through student feedback system is one of the factors in evaluating the annual performance and to release the annual increments. HOD of concern program creates awareness about the feedback systems and its importance among the students and in general about 80% of students participate in the feedback process.

9.3. Feedback on facilities (5)

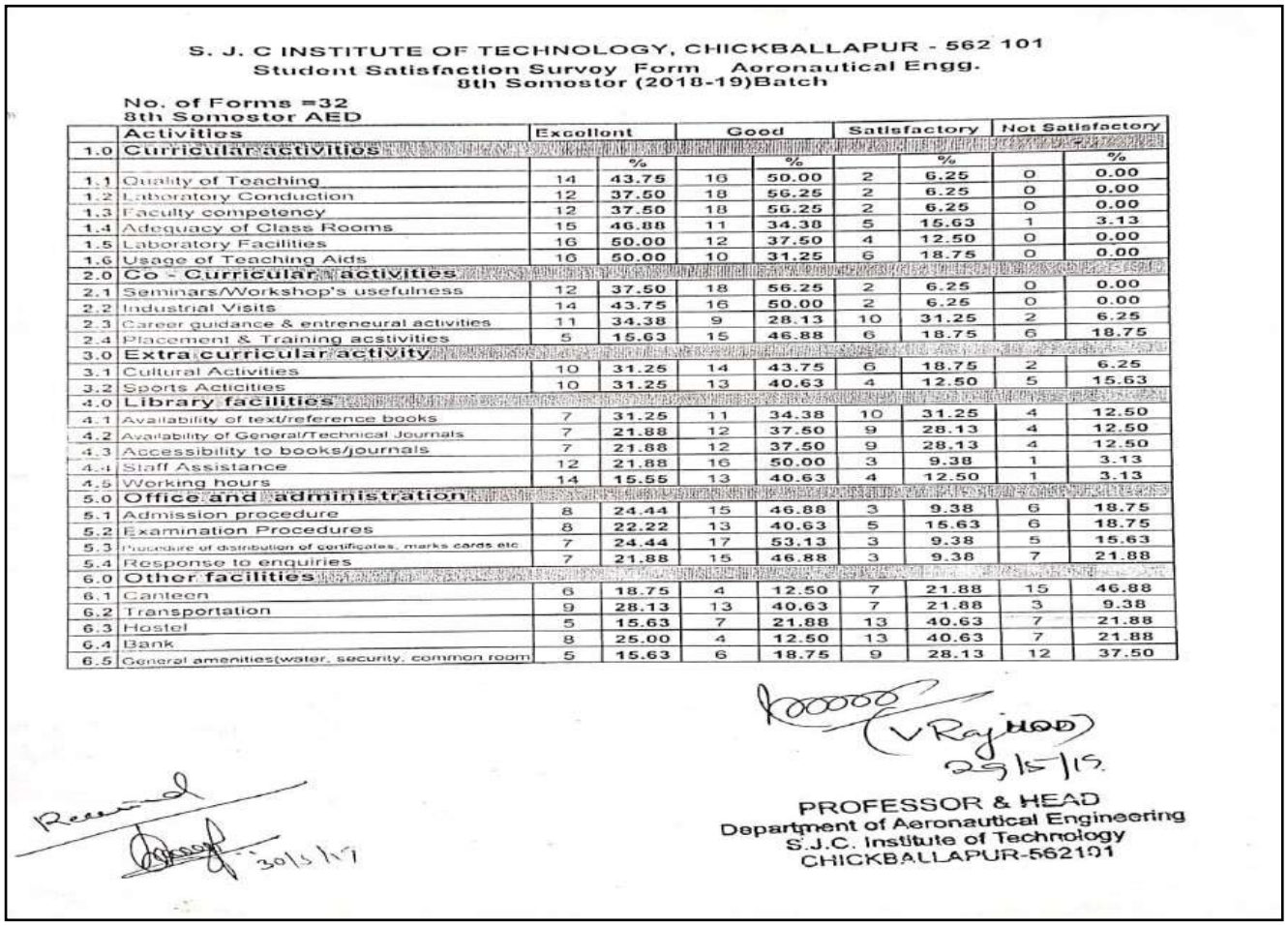
The objective of institution is to provide best facilities to the students. The Institute has a mechanism for collection of feedback from outgoing students on facilities, curricular activities, co-curricular activities, extra-curricular activities, library facilities, administration and others. The frequency of collecting data is once in a year from outgoing students. Every department analyses the feedback and report is forwarded to the Principal for initiate appropriate actions. The standard format for collecting feedback on facilities is presented in

Table B.9.3 Format for collecting feedback on facilities

Sl.No.	Activities	Excellent	Good	Satisfactory	Not Satisfactory
1.0	**Curricular activities**				
1.1	Quality of Teaching				
1.2	Laboratory Conduction				
1.3	Faculty competency				
1.4	Adequacy of Class Rooms				
1.5	Laboratory Facilities				
1.6	Usage of Teaching Aids				
2.0	**Co - Curricular activities**				
2.1	Seminars/Workshop's usefulness				
2.2	Industrial Visits				
2.3	Career guidance &entrepreneur activities				
2.4	Placement & Training activities				
3.0	**Extra-curricular activity**				
3.1	Cultural Activities				
3.2	Sports Activities				
4.0	**Library facilities**				
4.1	Availability of text/reference books				
4.2	Availability of General/Technical Journals				
4.3	Accessibility to books/journals				
4.4	Staff Assistance				
4.5	Working hours				
5.0	**Office and administration**				
5.1	Admission procedure				
5.2	Examination Procedures				
5.3	Procedure of distribution of certificates, marks cards etc.				
5.4	Response to enquiries				
6.0	**Other facilities**				
6.1	Canteen				

6.2	Transportation				
6.3	Hostel				
6.4	Bank				
6.5	General amenities (water, security, common room)				

Figure 9.3.1a: A sample copy of Aeronautical Engineering Department feedback on facilities



S. J. C INSTITUTE OF TECHNOLOGY, CHICKBALLAPUR - 562 101
Student Satisfaction Survey Form Aeronautical Engg.
8th Semester (2018-19)Batch

No. of Forms =32
8th Semester AED

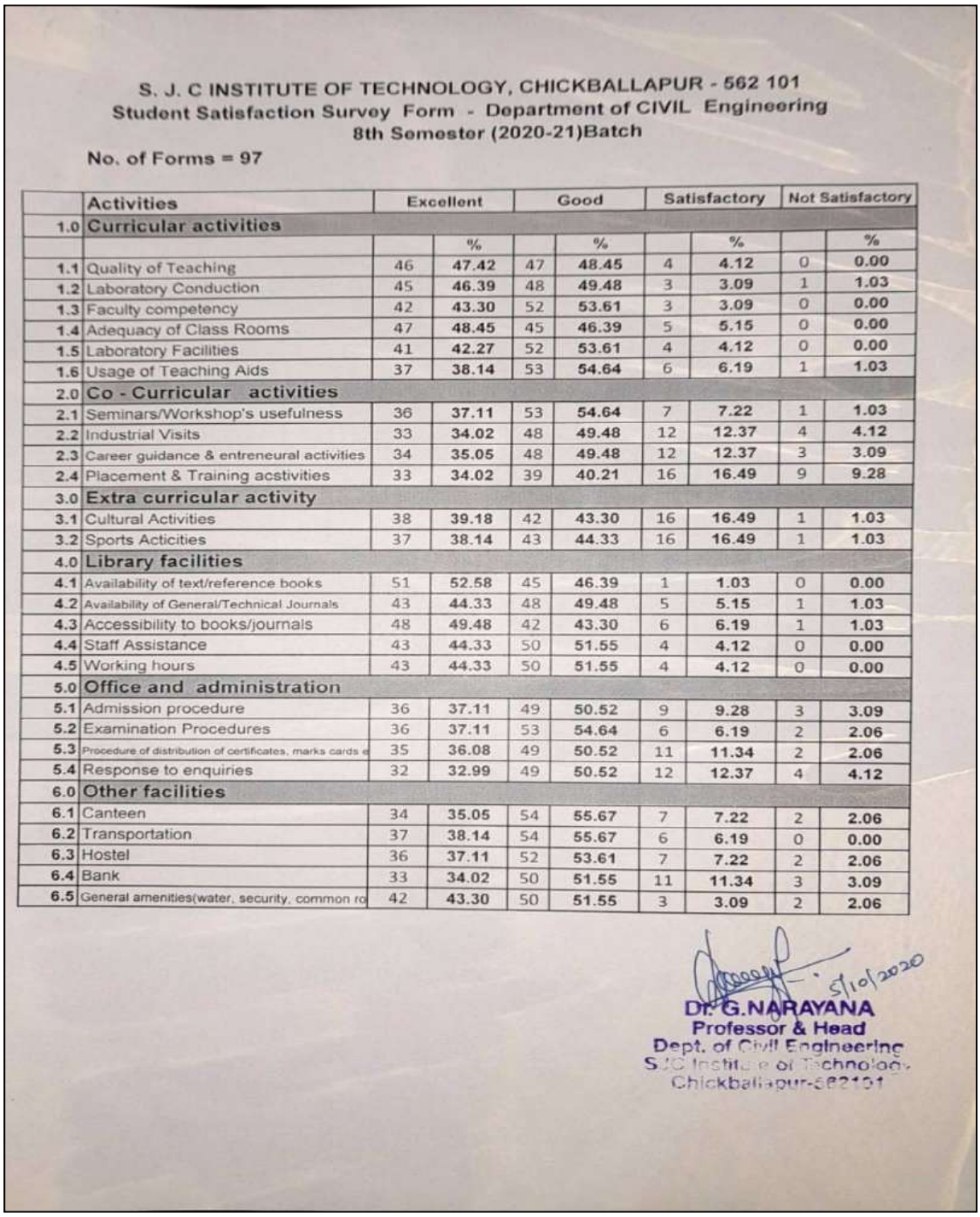
	Activities	Excellent		Good		Satisfactory		Not Satisfactory	
1.0	**Curricular activities**		%		%		%		%
1.1	Quality of Teaching	14	43.75	16	50.00	2	6.25	0	0.00
1.2	Laboratory Conduction	12	37.50	18	56.25	2	6.25	0	0.00
1.3	Faculty competency	12	37.50	18	56.25	2	6.25	0	0.00
1.4	Adequacy of Class Rooms	15	46.88	11	34.38	5	15.63	1	3.13
1.5	Laboratory Facilities	16	50.00	12	37.50	4	12.50	0	0.00
1.6	Usage of Teaching Aids	16	50.00	10	31.25	6	18.75	0	0.00
2.0	**Co - Curricular activities**								
2.1	Seminars/Workshop's usefulness	12	37.50	18	56.25	2	6.25	0	0.00
2.2	Industrial Visits	14	43.75	16	50.00	2	6.25	0	0.00
2.3	Career guidance & entreneural activities	11	34.38	9	28.13	10	31.25	2	6.25
2.4	Placement & Training acstivities	5	15.63	15	46.88	6	18.75	6	18.75
3.0	**Extra curricular activity**								
3.1	Cultural Activities	10	31.25	14	43.75	6	18.75	2	6.25
3.2	Sports Acticities	10	31.25	13	40.63	4	12.50	5	15.63
4.0	**Library facilities**								
4.1	Availability of text/reference books	7	31.25	11	34.38	10	31.25	4	12.50
4.2	Availability of General/Technical Journals	7	21.88	12	37.50	9	28.13	4	12.50
4.3	Accessibility to books/journals	7	21.88	12	37.50	9	28.13	4	12.50
4.4	Staff Assistance	12	21.88	16	50.00	3	9.38	1	3.13
4.5	Working hours	14	15.55	13	40.63	4	12.50	1	3.13
5.0	**Office and administration**								
5.1	Admission procedure	8	24.44	15	46.88	3	9.38	6	18.75
5.2	Examination Procedures	8	22.22	13	40.63	5	15.63	6	18.75
5.3	Procedure of distribution of certificates, marks cards etc	7	24.44	17	53.13	3	9.38	5	15.63
5.4	Response to enquiries	7	21.88	15	46.88	3	9.38	7	21.88
6.0	**Other facilities**								
6.1	Canteen	6	18.75	4	12.50	7	21.88	15	46.88
6.2	Transportation	9	28.13	13	40.63	7	21.88	3	9.38
6.3	Hostel	5	15.63	7	21.88	13	40.63	7	21.88
6.4	Bank	8	25.00	4	12.50	13	40.63	7	21.88
6.5	General amenities(water, security, common room	5	15.63	6	18.75	9	28.13	12	37.50

(V Raj HOD)
25/5/17.

Received
30/5/17

PROFESSOR & HEAD
Department of Aeronautical Engineering
S.J.C. Institute of Technology
CHICKBALLAPUR-562101

Figure 9.3.1b: A sample of copy Civil Engineering Department feedback on facilities



S. J. C INSTITUTE OF TECHNOLOGY, CHICKBALLAPUR - 562 101
Student Satisfaction Survey Form - Department of CIVIL Engineering
8th Semester (2020-21)Batch

No. of Forms = 97

	Activities	Excellent		Good		Satisfactory		Not Satisfactory	
1.0	**Curricular activities**								
			%		%		%		%
1.1	Quality of Teaching	46	47.42	47	48.45	4	4.12	0	0.00
1.2	Laboratory Conduction	45	46.39	48	49.48	3	3.09	1	1.03
1.3	Faculty competency	42	43.30	52	53.61	3	3.09	0	0.00
1.4	Adequacy of Class Rooms	47	48.45	45	46.39	5	5.15	0	0.00
1.5	Laboratory Facilities	41	42.27	52	53.61	4	4.12	0	0.00
1.6	Usage of Teaching Aids	37	38.14	53	54.64	6	6.19	1	1.03
2.0	**Co - Curricular activities**								
2.1	Seminars/Workshop's usefulness	36	37.11	53	54.64	7	7.22	1	1.03
2.2	Industrial Visits	33	34.02	48	49.48	12	12.37	4	4.12
2.3	Career guidance & entreneural activities	34	35.05	48	49.48	12	12.37	3	3.09
2.4	Placement & Training acstivities	33	34.02	39	40.21	16	16.49	9	9.28
3.0	**Extra curricular activity**								
3.1	Cultural Activities	38	39.18	42	43.30	16	16.49	1	1.03
3.2	Sports Acticities	37	38.14	43	44.33	16	16.49	1	1.03
4.0	**Library facilities**								
4.1	Availability of text/reference books	51	52.58	45	46.39	1	1.03	0	0.00
4.2	Availability of General/Technical Journals	43	44.33	48	49.48	5	5.15	1	1.03
4.3	Accessibility to books/journals	48	49.48	42	43.30	6	6.19	1	1.03
4.4	Staff Assistance	43	44.33	50	51.55	4	4.12	0	0.00
4.5	Working hours	43	44.33	50	51.55	4	4.12	0	0.00
5.0	**Office and administration**								
5.1	Admission procedure	36	37.11	49	50.52	9	9.28	3	3.09
5.2	Examination Procedures	36	37.11	53	54.64	6	6.19	2	2.06
5.3	Procedure of distribution of certificates, marks cards e	35	36.08	49	50.52	11	11.34	2	2.06
5.4	Response to enquiries	32	32.99	49	50.52	12	12.37	4	4.12
6.0	**Other facilities**								
6.1	Canteen	34	35.05	54	55.67	7	7.22	2	2.06
6.2	Transportation	37	38.14	54	55.67	6	6.19	0	0.00
6.3	Hostel	36	37.11	52	53.61	7	7.22	2	2.06
6.4	Bank	33	34.02	50	51.55	11	11.34	3	3.09
6.5	General amenities(water, security, common ro	42	43.30	50	51.55	3	3.09	2	2.06

5/10/2020
Dr. G.NARAYANA
Professor & Head
Dept. of Civil Engineering
SJC Institute of Technology
Chickballapur-562101

Figure 9.3.1c: A sample copy of Information Science and Engineering Department feedback on facilities

S.J.C INSTITUTE OF TECHNOLOGY, CHICKBALLAPUR
STUDENT STATISFACTION SURVEY FORM

Course/Branch:Information Science & Engg. Year:2019
Number of forms received: 82

Sl	Activities	Excellent		Good		Satisfactory		Not Satisfactory	
1	Curricular Activities:		%		%		%		%
1.1	Quality of Teaching	45	54.88	30	36.59	7	8.54	0	0.00
1.2	Laboratory Conduction	40	48.78	40	48.78	2	2.44	0	0.00
1.3	Faculty competency	40	48.78	30	36.59	12	14.63	0	0.00
1.4	Adequacy of Class rooms	46	56.10	30	36.59	6	7.32	0	0.00
1.5	Laboratory Facilities	50	60.98	32	39.02	0	0.00	0	0.00
1.6	Usage of Teaching Aids	35	42.68	47	57.32	0	0.00	0	0.00
2	Co-Curricular Activities								
2.1	Seminars/Workshop's usefulness	45	54.88	23	28.05	14	17.07	0	0.00
2.2	Industrial Visits	40	48.78	25	30.49	15	18.29	2	2.44
2.3	Career guidance & entrepreneurial	45	54.88	25	30.49	9	10.98	3	3.66
2.4	Placement & Training activities	40	48.78	28	34.15	9	10.98	5	6.10
3	Extra – curricular Activities								
3.1	Cultural Activities	35	42.68	35	42.68	8	9.76	4	4.88
3.2	Sports Activities	40	48.78	25	30.49	13	15.85	4	4.88
4	Library Facilities								
4.1	Availability of text/reference books	30	36.59	28	34.15	21	25.61	3	3.66
4.2	Availability of General/Technical	35	42.68	25	30.49	18	21.95	4	4.88
4.3	Accessibility to Books/Journals	35	42.68	25	30.49	16	19.51	6	7.32
4.4	Staff assistance	35	42.68	25	30.49	18	21.95	4	4.88
4.5	Working hours	35	42.68	30	36.59	17	20.73	0	0.00
5	Office and Administration								
5.1	Admission procedure	30	36.59	25	30.49	16	19.51	11	13.41
5.2	Examination procedures	30	36.59	32	39.02	20	24.39	0	0.00
5.3	Procedure of distribution of certificates,	35	42.68	35	42.68	12	14.63	0	0.00
5.4	Response to enquiries	35	42.68	31	37.80	16	19.51	0	0.00
6	Other facilities								
6.1	Canteen	14	17.07	12	14.63	28	34.15	28	34.15
6.2	Transportation	30	36.59	30	36.59	12	14.63	10	12.20
6.3	Hostel	20	24.39	31	37.80	30	36.59	1	1.22
6.4	Bank	38	46.34	28	34.15	16	19.51	0	0.00
6.5	General amenities (Water, security,	25	30.49	25	30.49	15	18.29	17	20.73

10/6/2019
HOD
Prof & Head
Department of Information Science & En
SJC Institute of Technolo
Chickballapur-562101.

9.4. Self-Learning (5)

The academic performance of the student enhances through self-learning. It helps the students in gaining knowledge and learning beyond the syllabus. The institute takes maximum care to provide the necessary facilities to ensure self-learning. These facilities include library (at college level, as well as at department level), internet facility, online journal subscription, open access system, Resource for taking competitive exams, repository of university question papers (e-copy), university consortium e-resources, VTU Edusat and others.

Library facility

The institution has well-furnished, spacious central library with reference section, Periodical section, stock area, Internet & Digital library. Presently the center has 86137 volumes of books and subscription of VTU Consortium e-Resources. Apart from this each engineering program has established department library. The department library has Reference Books,

Journals and project reports pertaining to the respective domain. Adequate computers with internet facility are available for accessing e-resources.

Library also has collection of newspapers, journals back volumes, competitive exam books, VTU UG/PG previous years e-question papers and syllabus of all the branches. There is a vast array of materials that provides insights and information to enhance overall personality development.

Internet facility

The details of the Internet facility are provided in the following Table B.9.4.2.

- Name of the internet provider: AIRTEL/TATA
- E-learning facility : Yes
- Wi-Fi availability : Yes

  Wi-Fi zone enables the students to use the facility any time (even beyond college hours)

Table B.9.4.2 Details of Internet facilities established at the central library

Sl. No.	Details	Remarks
1	Type of Internet connection	Leased LAN1:1
2	Bandwidth of the Institute/Library Network	500 Mbps AIRTEL/TATA
3	IP Address (Static IP Ranges of your College)	103.105.226.242

Digital Library

The Institution has set up Digital Library with 30 computers having adequate internet connectivity. It is collaborated with national information network agencies (VTU Consortium e- resources & DELNET) and also provided with Wi-Fi facility to access required information. It provides access to different kinds of e-Books/e-journals.

NPTEL Online Course

The Institute has established facility to enable the students take up professional courses through NPTEL. The departments educate students about the importance of NPTEL online courses. Details of Staff and Students have registered for the NPTEL online courses are provided in the following Table. B.9.4.3.

Table. B.9.4.3. Details of No. of candidates registered NPTEL Courses

Sl. No.	Year	No. of candidates registered for NPTEL Courses
1	2020-21	677
2	2019-20	467
3	2018-19	308

VTU Edusat Program

EDUSAT is satellite-based distance education facility to provide interaction/guidance/feedback tools to learners and act as a facilitator between the experts and the students. This is supported by Visvesvaraya Technological University, Belagavi. An exclusive infrastructure, to take care of Edusat program is available in the Institution. The students are benefitted from live lectures delivered by subject experts as part of EDUSAT program.

VTU Consortium e-Resources -2019-2020

The students can access e-Books/e-journals through Wi-Fi at defined zones in college campus, hostels and digital library. The Library contains the reference section with variety of resources, study area, office with a photocopier. The collection comprises textbooks, general reference material, question bank and career-oriented resources. The details of e-resources under VTU Consortium are given in the Table B.9.4.6.

Table B. 9.4.6 Details of Online Journal Subscriptions

Sl. No.	Name of the E-Resources	Web Address
1	Elsevier Science Direct E-Journals	www.sciencedirect.com
2	*IEEE* Proceedings Order Plan (*POP*)	www.ieeexplore.ieee.org
3	Springer Nature E-Journals	https://link.springer.com/
4	Taylor & Francis E-Journals	https://www.tandfonline.com/
5	Emerald E-Journals	https://www.emeraldinsight.com/
6	ProQuest- Architecture &Allied branches of Engineering	www.proquest.com/165290
7	Knimbus Platform and Remote Access	https://new.knimbus.com
8	Net Analytiks Sententia Grammar Writing Tool	Https://sententia.online/
9	Turnitin Similarity Check *	www.turnitin.com/

Contents beyond syllabus

The Institution encourages and facilitates students to acquire knowledge beyond the university syllabus. The department addresses the content beyond syllabus in the following forms

- Case Studies
- Mini Projects
- Assignments
- Technical Paper Presentation
- Workshops

9.5. Career Guidance, Training, Placement (10)

Career Guidance Cell

The institution has set up Career Guidance Cell (CGC) with an objective of providing information on pursuing higher studies at national and international institutions and information related to competitive examinations. The Placement and Training department initiates and conducts career guidance programs in coordination with the different engineering departments. The details of career guidance program conducted in the previous assessment ears are presented in the following Table B.9.5.1.

Table B.9.5.1 Details of Career Guidance related activities

Sl. no	Academic year	Resource details	Branch	Date	Venue	No of students participated	Program details
1	2020-21	Mr. Joel Noronho	All branches Final year students	13.5.2021	Online	200	Career Pathway and Study Abroad Opportunities
2	2019-20	Mr. Supreeth YS (Tequed Labs)	All Pre-Final Years students	14.01.2020	CSE Seminar Hall	178	Career Guidance
		Dell company ltd.	Pre-Final year CSE/ISE	19.02.2020	CSE Seminar Hall	127	Career Guidance, Technical Profile Building & C 2 C - industry readiness

3	2018-19	Mr. Shubham Agarwal & Deepanshu Singh (NEXT IAS)	1st Year students	10.12.2018	Auditorium	664	Career in Services
		TCS (Recruitment team) C	Pre-Final Year students	21.03.2019	Auditorium	325	Pre-Placement talk
		Videsh Consultancy	6thSem ECE	10.05.2019	Class Room	49	Career Guidance
		Prasad Chitta (TCS)	Final Year students of CSE/ISE	22.02.2019	CSE Seminar Hall	75	Machine Learning

Training and Placement

Training Activities: The training and placement cell of the institute organize training activities for the students on soft skills, aptitude, technical and placement. The structure of training and placement and its content as follows.

- HR Training (1stto 6thSem): The department of training and placement imparts training programs, which are integrated in the time table and is mandatory for all the students.
- Technical Trainings: These trainings are imparted during the vacations between 3rdand 6th Sem. and culminates with a project.
- Placement Training: Placement focused training is imparted during the vacation period between 6th and 7th Sem. Regular mock tests are conducted to evaluate the students.

The structure and content of training program conducted for semester levels are provided in the following Table B.9.5.2a

Table B.9.5.2a Structure and contents of training program for different semester levels

<table>
<tr><th>Sl.No.</th><th>Year</th><th>Training Program</th><th colspan="2">Contents</th></tr>
<tr><td rowspan="2">1</td><td rowspan="2">1st year (I & II Semester)</td><td rowspan="2">Soft skills Verbal</td><td>Soft skills</td><td>Verbal</td></tr>
<tr><td>Resume Building
Extempore Speaking
Power Presentations
Picture Perfect
Group Discussions
Personal Grooming
Personal Interviews
Self Inventory
Mgmt.</td><td>Parts of Speech, Tenses
Subject Verb Agreement
Error Spotting Reading
Comprehension
Essay/Paragraph writing
E-mail writing &Etiquettes
Logical Reasoning and verbal
Ability, Vocabulary Analogies</td></tr>
<tr><td>2</td><td>2nd year (III & IV Semester)</td><td>Soft skills Verbal Basics of Aptitude/ Case studies</td><td colspan="2">Basics of Aptitude/ Case studies
Number Theory Percentage, Profit & Loss
Ratio's, Proportions & Partnership Allegations& Mixtures
Time & Work
Time, Speed & Distances Syllogism and set theory Permutation & Combination Probability Geometry, Logical Reasoning</td></tr>
<tr><td>3</td><td>3rd year (V& VI Semester)</td><td>Aptitude Soft skills</td><td colspan="2">Basics of Aptitude/ Case studies Number Theory
Percentage, Profit & Loss
Ratio's, Proportions & Partnership Allegations & Mixtures
Time & Work
Time, Speed & Distances Syllogism and
set theory Permutation & Combination
Probability
Geometry
Logical Reasoning</td></tr>
</table>

4	4th year (VII &VIII Semester)	JANUS training	C & C++ Data Structures Networking Java Microcontroller Microprocessor, Solid Edge, Catia, Auto CAD STAAD, Quality Control

The summary of various training activities conducted by the training and placement department is provided in the following Table B.9.5.2b

Table B.9.5.2b Details of placement related training programs conducted

SL. No	Academic year	Name of the Program	Number of students Trained	Name of Training Institute	Program Details
1	2020-21	JANUS-2020-21	198	ZESTECH Global Pvt. Ltd, Bengaluru	JANUS is a short-term vocational training program, conducted mainly to make the students industry ready. This program focused on the final year students of SJCIT, Chickballapur to enhance their Quantitative Aptitude, Verbal Aptitude and Soft Skills along with Technical Skills.
2		PSET/CLC - Code Like Corporates-2020-21	NIL	NIL	NIL
3		Pragnyan-2020-21 ODD & EVEN Semesters Except 1st year	1212	ZESTECH Global Pvt. Ltd, Bengaluru	Pragnyan' 18 ODD Semester is a long-term training program to develop the students' skills set in Quantitative Aptitude, Verbal Aptitude and Soft Skills. This is mainly focused on 1st, 3rd and 5th

					Semester B.E. students of SJCIT, Chickballapur.
4	2019-20	JANUS-2019-20	403	ZESTECH Global Pvt. Ltd, Bengaluru	JANUS is a short-term vocational training program, conducted mainly to make the students industry ready. This program focused on the final year students of SJCIT, Chickballapur to enhance their Quantitative Aptitude, Verbal Aptitude and Soft Skills along with Technical Skills.
5		PSET/CLC - Code Like Corporates-2019-20	141	ZESTECH Global Pvt. Ltd, Bengaluru	CLC is a Technical Training Program conducted for the pre final year students of SJCIT, Chickballapur. The program mainly focused on improving the students' skills in Coding in languages like C, JAVA.
6		Pragnyan-2019-20 ODD & EVEN Semesters	1951	ZESTECH Global Pvt. Ltd, Bengaluru	Pragnyan an '18 ODD Semester is a long-term training program to develop the students' skill sets in Quantitative Aptitude, Verbal Aptitude and Soft Skills. This is mainly focused on 1st, 3rd and 5th Semester B.E. students as well as 1st and 3rd MBA students of SJCIT, Chickballapur.
7	2018-19	JANUS	403	ZESTECH Global Pvt. Ltd, Bengaluru	JANUS is a short-term vocational training program, conducted mainly to make the students industry ready. This program focused on the final

					year students of SJCIT, Chickballapur to enhance their Quantitative Aptitude, Verbal Aptitude and Soft Skills along with Technical Skills.
8		CLC - Code Like Corporates	141	ZESTECH Global Pvt. Ltd, Bengaluru	CLC is a Technical Training Programme conducted for the pre final year students of SJCIT, Chickballapur. The programme mainly focused on improving the students' skills in Coding in languages like C, JAVA.
9		Pragnyan	1951	ZESTECH Global Pvt. Ltd, Bengaluru	Pragnyan"18 ODD Semester is a long-term training program to develop the students skillsset in Quantitative Aptitude, Verbal Aptitude and Soft Skills. This is mainly focussedon1st, 3rd and5thSemester B.E. students SJCIT, Chickballapur. JANUS is a short term vocational

Placement activities: The training and placement cell plans campus recruitment drives for all the programs. The placement cell conducts the student registration process through which the entire student data is collected. The department communicates the campus visits schedule with students and conducts the campus drive. The list of companies visiting the Institute for campus recruitment annually is shown in the following TableB.9.5.2c.

Table B.9.5.2c Partial list of Companies visiting the Institute for Campus Drive

Sl. No.	Name of the Company
1	Tata Consultancy Services Limited, Bengaluru
2	Wipro Limited
3	Capgemini Technology Services India Limited
4	Mindtree Limited
5	NTT Data Global Services Private Limited
6	L & T Infotech Limited
7	Tech Mahindra Limited
8	AMAZON, COM
9	Aricent Global Design and Engineering Company
10	Assystem's Engineering Services Company
11	Bharath Electronics Limited
12	Brigade Group
13	First American Financial Corporation Company
14	HP India Private Limited
15	Trident Groups
16	Innovative Tools Private Limited
17	Titan Eyewear Private Limited
18	Triveni Turbines
19	TVS Motors Company Limited
20	Mphasis Limited
21	Prime Focus Technologies Private Limited
22	Wissen InfoTech
23	EnvestnetYodlee India Private Limited
24	Accord Software & Systems Private Limited
25	Shobha Limited

The number of students placed, companies visited for conducting campus recruitment drive and the percentage placement during last three assessment years is shown in the following Table B.9.5.2d.

Table B. 9.5.2d Summary of Placement details during previous assessment years

Sl.No.	Academic Year	No. of Companies Visited	No. of Students Placed	Percentage of placement
1	2020-21	58	254	75.15
2	2019-20	32	190	68.0
3	2018-19	42	227	80.10

The training and placement department has got recognitions for the performances.

Achievements:

- Received Excellence in Recruiter's Perception (South) from Dataquest T-School Survey in the year-2015
- Received Exemplary Placement Services" award from the Higher Education Review-2016

9.6. Entrepreneurship Cell (5)

The Institution has established formerly called as BGS Research & Incubation Centre for Entrepreneurship (BGS-RICE) now a company formed called as BGS SJCIT INCUBATION FOUNDATION (BGS SIF) to take care of incubation activities.

The objectives of the center are to

- To inculcate innovation culture within the teaching faculty and students of all educational streams.
- Establish collaboration with government and non-government funding agencies to enhance research, innovation and entrepreneurial related activities.
- To motivate and support academic faculty and student community, in converting their ideas and innovative processes into working prototype through mentoring and funding support.
- To enable commercialization of innovative solutions and IP developed within the academic setup by supporting in taking the products to the market.
- To generate employment and create a robust entrepreneurial ecosystem.

- To build a vibrant student entrepreneurial community and provide the required resources for start-ups to contribute in the societal development through innovation activities
- To conduct workshops, programs, events activities for developing business skills, to make networking events accessible, to impart information related to market opportunities and to create a platform to showcase technological solutions

BGS SIF Coordinates with the different departments in the college to initiate related activities. The team member details of this center are presented below.

Sl. No.	Name of the Member	Designation	Cell
1	Dr. T. Munikenche Gowda	Director	Team Lead - BGS Research &Innovation centre for Entrepreneurship
2	Mr. C. Narendra Babu	Asst. Professor CSE	Coordinator
3	Mrs. Safira Begaum	District Innovation Assistant	Innovation Assistant
4	Mr Suresh Kumar	Programmer	Assistant Coordinator

The Entrepreneurship related activities are conducted during the assessment years by BGS SIF are presented in the following Table B.9.6.1

Table B.9.6.1Entrepreneurship activities conducted during the previous years

Sl. No.	Assessment Year	Program title	Resource Person	Date of Conduction & Venue	Number Students participated
1	2020-21	E-Step Bootcamp	Mr.Vishnu Nagaraj Founder CEO, Carve Startup Labs	24-05-2021 Online	162

		Workshop on Entrepreneurship Awareness	Mr.Nikshep Ramesh Director Ellipses Innovation	10-03-2021 CS seminar hall	140+
		Webinar on "Innovation Ideation and Entrepreneurship"	S. Mukul Manohar Vemana Business Incubation Center Vemana Institute of Technology Bengaluru	24-12-2020 Online	160+
		Webinar on "Innovation and Entrepreneurship in India: An overview"	Mr. A N Manjunath Research Scholar IIM, Bangalore	10-12-2020 Online	565
2	2019-20	Effectual Thinking in Entrepreneurship	Mr. Mr. A N Manjunath, IRS, Deputy Commissioner, Bengaluru South GST Commissionerate, Bengaluru.	12.03.2020 CS seminar hall	203
3	2018-19	Inauguration - Camp Objective, Why Entrepreneurship (general concepts)	Dr. Raman Gujral Regional Head, Entrepreneurship Development Institute of India (EDII), Bengaluru.	23.10.2019 – 25.10. 2019 CS Seminar Hall	93
		Technology -assistance from R&D labs and other institutions on choice of Technology etc	Prof. Srinivas M. Jamkhandi Project Scientist, Dept. of ESE,IISc., Bengaluru.		

		Historical background-Indian values vis - a-vis Entrepreneurship and the present scenario &Creativity and business - the man behind the venture - the behaviorial scientist's approach	Prof. Ananda Murthy H V Deputy Director, IISc. -MSME Centre of Excellence, IISc., Bengaluru.		
		How to start a SSI unit (General concept about the Govt. formalities, rules &regulation, location, and different aspect of an industrial venture)	Mr. Rajendran B Asst. Director, MSME Development Institute, Bengaluru.		
		Technical & commercial aspects of SSI unit	Mr. Mohamed Ateequlla Shariff Joint Director, DIC,Chickballapur.		
		Schemes of assistance and Support available from Govt. agencies, banks, financial institutions, SFCs etc	Dr. Vijayalakshmi S. Warad Branch Manager, KSFC, Chickballapur.		
		Identification of Business opportunities and Mechanisms of product selection	Mr. Ranga Prasad S N, Consultant and Former Director, MSME Development Institute, Rajajinagar, Bengaluru.		
		Communication skills for better results in business	Mrs. Rekha Gopal, Managing Director Padmajyothi Industries, Leading Women Entrepreneur.		

		Financial aspects of SSI unit including salient features of a project report	Mr. Basavaraja O Lead District Divisional Manager, Lead Bank Office, Chickballapur.		
		BOOTCAMP Karnataka Innovation and Technology Society Department of IT, BT and S&T	Mr.B.Kamal Babu ,Mikrotek Machines Ltd. Mr, Vishnu Nagaraj, Start-up Evangelist	13.08. 2019	127
		Innovation taking place in the field of IOT (Internet of Things), Cutting edge.	Dr. T. V Prabhakar Principal Research Scientist, DESE, IISc, Bengaluru	11.10.2018- 12.10.2018	57
		Innovation to prototype	Mr. Srinivas M. Jamkhandi Project Scientist, DESE, IISc, Bengaluru		
		MSME schemes supporting MSME's	Mr. Ananda Murthy H. V Deputy Director (Rtd.,)		
		Pre – Hackathon	Mr. SanjeevKoushik General Management Program, IIMB Mr. Nayaz Ahmed COOJU incubator	05.10.2018	65

Incubation Activities at Centre

❖ **Proposals Approved by Karnataka innovation and Technology Society (KITS), Department of Electronics, IT, BT and S&T Government of Karnataka.**

Sl. No.	IDEAS	Branch	Amount in Lakhs
1.	Coconut and Areca Nut Harvesting Drone	AE	2,50,000
2.	Sustainable Power Project to Remote Areas	ECE	2,50,000
3.	Automation in Cars to Alert Drivers	CSE	2,31,000
4.	Controlled Use of Waterfor Irrigation and Fertilisers in Farming	CSE	2,41,000
5.	Air Conditioning by Geothermal Heat Pump	CE	1,88,000
6.	Brain Computer Interface for Patients with Disorder of Consciousness and Stroke	ECE	2,40,000
7.	Smart Traffic Handling System	ISE	2,50,000
8.	A-Drishti-A Step Towards Alternate Vision	ECE	2,22,000
9.	Smart Helmets for Bikes	TCE	2,30,000
10.	Design and Fabrication of Road Cleaning Machine	ME	2,10,237
11.	Poorni-The Public Assistant	CSE	2,17,513
12.	Virtual SIM	ISE	2,37,250
13.	An application to Pay Fine for Traffic Rules Violation	CSE	2,33,000
		Total	**30,00,000**

Ideas approved during academic year 2020-21 are provided in the Table B.9.6.3.

Table B.9.6.2. Sanctioned entrepreneurship ideas in the academic year 2018-19

Sl. No.	IDEAS	Department	Amount in INR
1.	Academeasy- Your Academic Friend	CSE	1,46,000
2.	Exo-Skeleton	ME	2,30,000
3.	Andriod Based Intelligent Smart Vehicle for Disables Using Brain Computer Interface and Voice Assistant	CSE	2,45,000
4.	Book Market Inside the Campus	CSE	1,67,890
5.	Design and Development of Semi-Automatic Manhole Cleaning Machine	ME	2,73,900
6.	Tissue culture - A Helping Hand in Agriculture	ME	2,65,730
7.	Automated Overhead Tank Cleaning System	ME	2,56,650
8.	Innovative And Effective Use of Resources Along with Advanced Home Automation System	CSE	2,27,000
9.	Notatia - The Solution of The People	CSE	2,78,000
10.	Low Cost Manually Operated Seed Sowing Machine	ME	2,65,000
		Total	**23,55,170**

- **Technology Business Incubator (TBI) – A Scheme for Promotion of Innovation, Rural Industries and Entrepreneurship (ASPIRE), Sanctioned by Ministry of Micro, Small and Medium Enterprises, Government of India.**
- **DAE - Technologies Display and Dissemination Facility DDF)**
  Sanctioned by:
  Baba Atomic Research Center (BARC), Mumbai
  Government of India

Technologies sanctioned are

1.Tissue Culture

2.Nisargruna Bio-Gas Plant

3.Fluoride Detection Kit for Ground Water (FDK)

4.Soil Organic Carbon Detection Kit (SOCDK)

5. On-line Domestic Water Purifier Based on Ultrafiltration Polysulfone Membrane

6. Foldable Solar Dryer (FSD)

9.7. Co-Curricular and Extra-Curricular Activities (10)

Students are engaged in co-curricular and extracurricular activities through student coordinators and forums, which provide opportunities for students to explore new fields of interest, cultivate leadership skills, and learn teamwork. In this regard institution has framed various committees for participating and organizing the cultural and sports activities. The following are the co-curricular and extracurricular activities that are conducted on regular basis in the college.

Co-Curricular Activities	Extra-Curricular Activities
Industry interaction	NCC
Industrial Project tour	NSS
Guest lecture	Cultural fest
Paper presentation	Sports
Project exhibition	Societal activities

Co-Curricular Activities (Technical talks/paper presentations/project exhibition/ visits to various public and private sector/ Industrial Project tour)

Industry interaction

Academic year	Programs			TOTAL
	AE	Civil	ISE	
2020-21	0	8	0	8
2019-20	5	5	0	10
2018-19	1	7	01	9

Experts invited to college /Guest lecture

Academic year	Programs			TOTAL
	AE	Civil	ISE	
2020-21	4	2	06	12
2019-20	2	7	1	10
2018-19	3	12	5	20

Industrial Project tour

Academic year	Programs			TOTAL
	AE	Civil	ISE	
2020-21	0	0	00	0
2019-20	0	0	00	0
2018-19	0	11	00	11

Paper presentations

Academic year	Programs			TOTAL
	AE	Civil	ISE	
2020-21	1	24	07	32
2019-20	2	0	02	4
2018-19	5	04	03	12

Student Papers awarded as Best Papers (Civil Engineering)

Sl. No.	Student Name	Guide Name	Presented at	Year
1	Shravani K	Ravindra M V	Dr. TTIT Virtual Expo-2021	2020-21
2	Krithi C N	Mr. Kiran KM	MANTHANA-2021	2020-21
3	Mallika B S	Mr. Manjunath K A	MANTHANA-2021	2020-21
4	Chethan Kumar K J	Mr. Rajeev S J	MANTHANA-2021	2020-21
5	Bhoomika K R	Ms. Sushma M	MANTHANA-2021	2020-21
6	Shwetha M	Ravindra M V	MANTHANA-2018	2017-18

Project exhibition

Academic year	Programs			TOTAL
	AE	Civil	ISE	
2020-21	6	1	3	10
2019-20	5	4	2	7
2018-19	4	4	4	12

All the engineering departments regularly conduct the co-curricular activities. The college encourages the students to take part in these activities. The number of co-curricular activities conducted by the engineering departments is shown in the following TableB.9.7.1a

Table B.9. 7.1a Summary of number of co-curricular activities conducted by the departments

Academic year	Summary of number of co-curricular activities conducted by the departments			TOTAL
	AE	Civil	ISE	
2020-21	11	35	16	62
2019-20	14	16	5	35
2018-19	13	38	13	64

Extra-Curricular Activities

The Institution organizes various extracurricular activities. Apart from the regular activities, the college has units like National Cadet Cops & National Service Scheme initiates various activities. The cultural events and sports events are organized on annual basis.

National Cadet Cops (NCC): The institute has established National Cadet Corps (NCC) unit in the academic year 2016-17. Mr. Umesh Chougla, Assistant Professor, Mechanical Engineering department is the NCC Coordinator. The NCC unit has number: COY 135/A, 8 KAR BN NCC BGLR. The NCC provides exposure to the cadets in a wide range of activities, with a distinct emphasis on Social Services, Discipline and Adventure Training. The statistics of student enrolment for the NCC unit and the activities conducted by the NCC unit is presented in the following Table B. 9.7.2a and 9.7.2b.

Table B.9. 7.2a Statistics of student Enrolment for NCC unit

Sl. No.	Particular	Target Regiment Group (TRG)														
		Academic Year 2018-19					Academic Year 2019-20					Academic Year 2020-21				
		1st year	2nd year	3rd year	4th year	Total	1st year	2nd year	3rd year	4th year	Total	1st year	2nd year	3rd year	4th year	Total
1	SD (Senior Division)	12	10	8	--	30	10	10	10	--	30	12	10	10	--	32
2	SW (Senior Wing)	08	6	7	--	21	8	8	4	--	20	7	6	6	--	19
Total		**51**					**50**					**51**				

Table B.9. 7.2b Details of activities conduct by the NCC unit

Sl.No.	Events organized	Attended	Venue	Date
1	Combined Annual Training Camp (CATC)	21	Delhi Public School Bangalore	Apr 2018
2	International Yoga Day	40	SJCIT	21st June 2018
3	Independence Day	30	SJCIT	15th August
4	National Unity Day	35	SJCIT	31st Oct 2018
5	Kannada Rajyotsava	35	SJCIT	1st Nov 2018
6	Republic Day	40	SJCIT	26th Jan 2019
7	Awareness to reduce blindness camp	150	SJCIT	Mar 2019
8	B and C certificate exams at SJCIT	120,96	SJCIT	Apr 2019
9	Talk on CDS and SSB exam procedure	60	SJCIT	Apr 2019
10	International Yoga Day	250	SJCIT	21st June 2019 (5KAR Bn NCC)
11	School Bell Event	25	Marenahalli	21st & 22nd Sept 2019
12	Sri M V Birth Anniversary	35	SJCIT	15th September 2019
13	Independence Day	30	SJCIT	15th August 2019
14	Kannada Rajyotsava	30	SJCIT	15th August 2018
15	Thala Sainik Camp (TSC) Total 50 days	1	Delhi Public School Bangalore	July to September 2019
16	CATC Pre RDC Camp	1	Delhi Public School Bangalore	5th SEPT 14th SEPT 2019

17	Combined Annual Training Camp (CATC)	11	Delhi Public School Bangalore	09th October to 18th October 2019
18	Combined Annual Training Camp (CATC)	05	Delhi Public School Bangalore	22nd October to 31st October2019
19	B certificate exams	283	SJCIT	16th Feb 2020
20	C certificate exams	84	SJCIT	23rd Feb 2020
21	COVID-19 Duties	20	SJCIT	26th April 2020
22	World Environment Day	10	SJCIT	5th June 2020
23	NCC Enrolment Process	150	SJCIT	22nd Jan 2021
24	Republic Day	25	SJCIT	26th Jan 2021
25	Cadre Camp	150	SJCIT	1st Feb to 5th Feb 2021
26	B Certificate Exams	330	SJCIT	21st Feb 2021
27	C Certificate Exams	160	SJCIT	28th Feb 2021

NATIONAL UNITY DAY:

Rashtriya Ekta Divas (National Unity Day) was introduced by the Government of India. The intent is to pay tribute to SARDAR VALLABHBHAI PATEL Who was instrumental in keeping India is united. it is to be celebrated on 31 October every year as an annual commemoration of birthday of the iron man of India Sardar Vallabhbhai Patel, One of the founding leaders of Republic of India.

The National Unity Day celebrates the birthday of Patel because, during his term as Home Minister of India, he is credited for the integration of over 550 independent princely states into India from 1947-49. He is known as the "BISMARCK of India.

Figure 9.7.1 Rashtriya Ekta Divas (National Unity Day) celebrated on 31 October 2019

KANNADA RAJYOTSAVA:

Kannada Rajyotsava is also known as Karnataka Formation Day, is celebrated on 1st November of every year. This was the day in 1956 when all the Kannada language-speaking regions of South India were merged to form the state of Karnataka.

Figure 9.7.2 Kannada Rajyotsava celebrations on 1st November 2019

REPUBLIC DAY:

Republic day honors the date on which the Constitute of India came into effect on 26 January 1950 Replacing the Government of India Act (1935) as the governing document of India.

The Constitute was Adopted by the Indian Constituent Assembly on 26 November 1949, and came into effect of 26 January 1950 with a Democratic Government system, Completing the country' transition towards becoming An Independent Republic.

Figure 9.7.3 Republic day celebrations on 26th January 2019

The 'B' CERTIFICATE EXAMINATION:

B Certificate examination is a culmination of NCC training for NCC cadets who are in the second year of NCC. The certificate has been recognized and those who successfully obtained it can get some benefits if they try to find jobs in the security forces.

Figure 9.7.4 B Certificate examination for the second year NCC cadets

THE 'C' CERT EXAMINATION:

C Certificate examination is a culmination of NCC training for NCC cadets who are in the Third year of NCC. The certificate has been recognized and those who successfully obtained it can get some benefits if they try to find jobs in the security forces.

Figure 9.7.5 C Certificate examination for the third year NCC cadets

AVOIDABLE BLINDNESS CAMP:

Avoidable blindness is defined as blindness which could be either treated or prevented by known, cost-effective means. In Today's generation one of the major diseases is blindness so it is very important for each and everyone to know about the causes of the blindness and how to avoid the blindness. So for the awareness of blindness, we have conducted one day camp about "AVOIDABLE BLINDNESS" in SJCIT College on March 2019. Some of the eye diseases are Ageing and the eye, cataract, childhood blindness, diabetic retinopathy, glaucoma, low vision etc. Some of the Protective measures for eye disease are as follows.

- Avoid smoking
- Eat healthy foods
- Stay active
- Control your blood pressure
- Protect your eyes from the sun

SAKSHAM is a National Organization catering to the needs of all section of disabled persons. SAKSHAM has taken up a project CAMBA (Cornea Andhatv Mukt Bharat Abhiyan) in Bengaluru Rural District consisting of four Taluks viz., Hoskote, Devanahalli, Doddaballapur and Nelamangala, wherein we will make a survey of about 100 villages reaching every home and recording the number of persons suffering from any avoidable blindness [cornea, cataract, pterygium, glaucoma, squint, uncorrected refractive errors etc.].

INTERNATIONAL YOGA DAY

International Yoga Day is celebrated on 21st June throughout the world. For the first time it was celebrated on 21 June, 2015. As, we all know environment is changing and the world is becoming more competent yoga help us to deal with this type of environment and also makes us healthy. This article deals with the theme, objectives of International Yoga Day, why it is celebrated on 21st June etc.

Figure 9.7.6 International Yoga Day is celebrations on 21st June 2019

SCHOOL BELL EVENT

Most of the social activities outside the school are free of charge. These events are a great way to practice your English outside of your lessons. It is also an opportunity to make friends and chat to teachers away from the classroom. Your teacher will let you know about the next social activity in your lessons, or you can look on our social activity calendar on the first floor or check social media.

Figure 9.7.7 Renovation work and painting in Govt. Schools under the school bell event.

Thala Sainik Camp (TSC)

Thala Sainik Camp is a camp which gives a Army NCC cadet no. of opportunities. Its main purpose is to produce more and more cadets who'd be able to represent their group, contingent, and directorates in inter NCC competitions. there are several competitions.

For Thala Sainik Camp for 50 days, a cadet is trained in eight subjects.

- Obstacle race-individual and group
- shooting-snap and advanced
- Judging distance

- Health and hygiene
- Field signals
- Map reading
- Tent pitching
- Line area

CATC COMBINED ANNUAL TRAINING CAMP(CATC)

Combined annual training camp (CATC)/Annual training camp (ATC) are held within the state. Basically, these camps help us to build stamina that to within 10days of training. These camps are meant to introduce the cadets into the regimental environment. These camps are meant to introduce the cadets into the regimental environment.

Figure 9.7.8 Photographs of CATC combined annual training camp (CATC) and Thalasainik camp (TSC)

Now coming to the activities which are held at the CATC.

- Daily morning and evening PT.
- Marching and drill competition.
- Firing competition
- Football...

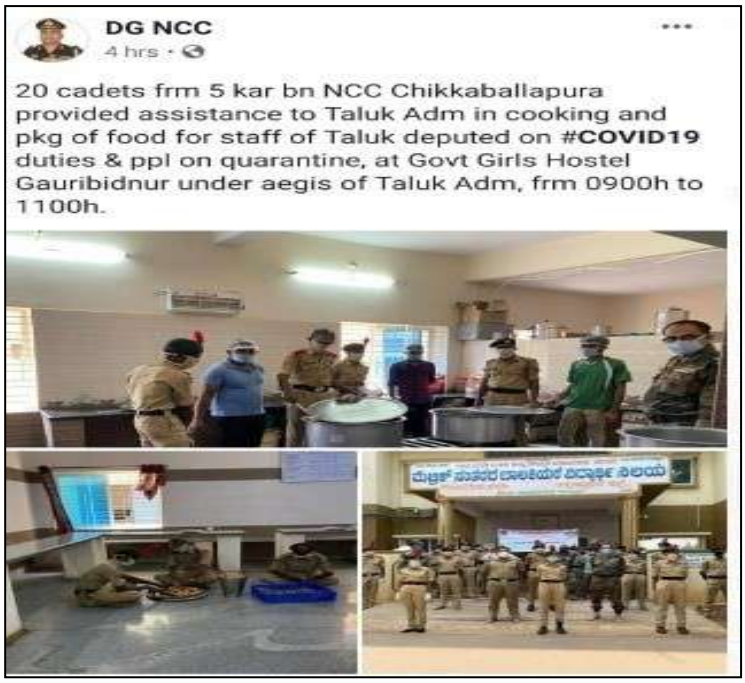


Figure 9.7.9 COVID-19 Duties (26-04-2020)

Figure 9.7.10 Cadre Camp (1st Feb to 5th Feb 2021)

Figure 9.7.11 Photographs of B and C Certificate Exam-Feb 2021

National Service Scheme (NSS)

The Institution has established National Service Scheme Cell. Mr. Shashi Kumar, Assistant Professor, Civil Engineering department is the NSS Program Officer. The Cell conducts regular NSS activities and special camping programs. The Institution has been conducting various Community service programs like Blood Donation Camps/Awareness programs and activities from time to time. In a concrete attempt to make the campus relevant to the needs of the community and with a view to developing healthy contacts between the students and teachers [on a voluntary basis] on one hand and establishing a constructive linkage between the campus and the community on the other hand, the institution has established a NSS [National Service Scheme] unit. The unit conducts regular NSS activities and special camping programs. The institution has been conducting various community service programs like blood donation camps/awareness programs and activities from time to time thereby discharging its societal commitment.

The list of the programs conducted by the NSS unit in the Table B.9.7.2c.

Table B. 9.7.2c Details of Programs conducted by NSS unit

Sl. No	Event Description
1.	Independence Day celebration
2.	NSS orientation Programme
3.	NSS Day celebration
4.	Awareness rally on say no to crackers and yes to life
5.	Blood Donation Camp
6.	vigilance awareness week
7.	International women's week
8.	Blood Donation Camp
9.	Free health checkup camp
10.	Tree plantation program
11.	Government school renovation done at chickballapur and kolar districts

12.	19 days Technology barrier reduction program conducted at SJCIT campus for Government school students.
13.	Five thousand seed balls prepared and distributed to various GPs at Bagepalli Taluk
14.	580 samplings distributed to students under one student one tree campaign
15.	Free health camps for adopted villages
16.	Conducted household and village survey for adopted villages and submitted to local governance
17.	Organized two residential camps and one special camp at adopted villages.

As a participating institution the college has adopted five villages under NSS & Unnat Bharath bhiyan 2.0 and completed village and house hold survey in Kanivenarayanapura of Muddenahalli GP,Chickballapur, Taluk and other adopted villages with the help of all the Gram Panchayath &Village members and identified Some of the common problems which are observed in village and house hold survey in all the villages as follows

- Scarcity of water for drinking and irrigation
- Know how on precision forming techniques is lacking

Figure 9.7.12 Photographs of House hold survey in the villages

Village sanitation and health issues

- Knowledge about digital literacy is lacking
- Pollution due to dust and mining activities
- Some percentage of villagers is still following conventional cooking using firewood.
- Very less student's strength found in Govt. Schools.
- Depletion of Plantation area.

After successful completion of Gram Sabha and discussed about the above-mentioned problems the college had taken some of the immediate action plans those are

- Provide door to door awareness about sanitation and its impact on health
- Under NSS & Unnat Bharath Abhiyan 2.0 Gram Sabha meeting were at Kondikonda village of M.Nallaguttalapalli GP,Bagepalli, Taluk and briefed about precision farming techniques and shared some of the photographs and study materials collected from Dr. M.K.Tiwari ,school of water resources, IIT Kharagpur during Two Days Workshop on Water Management held 26th&27th April 2019 at IIT Kharagpur
- As the direction NSS &Unnat Bharath Abhiyan and IIT Delhi student volunteers conducted door to door awareness about plastic free village campaign in adopted villages and collected plastic waste.

  As per the direction of UBA & VTU NSS, about swachhata Hi Sewa Campaign, Our College student volunteers are actively participated in Swach sharath activates in the adopted villages.

Figure 9.7.13 Awareness about plastic free villages Campaign

Under NSS Unit SJCIT & Unnat Bharath Abhiyan 2.0, student's volunteers done renovation work such as cleaning, painting etc of Govt. Schools to attract the student strength in few adopted villages in association with NGO called campus to community, Benguluru.

Figure 9.7.14 Swach Bharath Activities at adopted villages

As per the direction of UBA & NSS VTU about swachhata Hi Sewa Campaign, Our College student volunteers have actively participated in Swach Bharath activities in the adopted villages.

Figure 9.7.15 – NCC activity in adopted village

As the direction Unnat Bharath Abhiyan and IIT Delhi and NSS VTU student volunteers conducted door to door awareness about plastic free village campaign in adopted villages and collected plastic waste.

Under Unnat Bharath Abhiyan 2.0 & National Service Scheme [NSS] student volunteers & villages peoples have planted more than 2300 sampling and sown 5000 seed balls in the surroundings of Kondikonda village M.Nallaguttalapalli GP,Bagepalli, Taluk to improve green and the forest area in association with local forest department and GP offices.

Figure 9.7.16 – Unnat Bharath Abhiyan 2.0

Under Unnat Bharath Abhiyan 2.0, AICTE and NSS VTU conducted awareness camp on one student one tree campaign at our campus.

Figure 9.7.17 -Under Unnat Bharath Abhiyan 2.0 & National Service Scheme [NSS] student volunteers have planted more than 2300 sampling.

As per the direction of UBA about Jal Shakti campus and Jal Shakti village, our student volunteers are done some paintings regarding conservation of water at Govt. Schools' premises.

Figure 9.7.18 – Paintings in Government School premises by NSS Unit

As per the direction of UBA and NSS VTU about Jal Shakti campus and Jal Shakti village, our student volunteers are done some paintings regarding conservation of water at Govt. Schools premises at Kolar and Chickballapur districts.

As per the direction of UBA and NSS VTU about Jal Shakti campus and Jal Shakti village, our student volunteers are done some paintings regarding conservation of water at Govt. Schools premises Malur taluk, Kolar district.

Figure 9.7.19 Paintings of Temple in adopted village

Under VTU NSS and Unnat Bharath Abhiyan 2.0, student's volunteers done renovation work such as cleaning, painting in 12 Govt. Schools to attract the student strength in few adopted villages in association with NGO called campus to community, Benguluru, at Kolar and Chickballapur districts in the year 2019-20.

Figure 9.7.20 Painting of walls of Government School

- Under Unnat Bharath Abhiyan 2.0 and AICTE conducted awareness camp on one student one tree campaign at our collages and brief more about UBA and its activities to involve more students and faculties.

Societal activities:

B G S Rotary club: Rotary International is an international service organization whose stated purpose is to bring together business and professional leaders in order to provide humanitarian services, encourage high ethical standards in all vocations, and to advance goodwill and peace

around the world. The purpose of a Rotary club is to connect people who then work together to serve the community. In view the B G S Rotary club is established in the year 2017 and Rotary Dist 3190.

Mega donation blood camp:

The Rotarians of BGS Club jointly organized with Rotary Vijayapura actively participated in the blood donation camp which was part of Guinness World record and we have collected almost an average of **400** units and we bagged **3rd** Position for the Mega Blood Donation Camp.

TALK ON IMPORTANCE OF BLOOD DONATION

- Dr. Panindra given talk on importance of blood donation
- What are the criteria for blood donation, benefit to donor & beneficiaries
- Following NSS Co-ordinator from various department attended session

Table 9.7.2d – Lis of students Co-ordinators from various departments

SI NO	NAME	USN	BRANCH/SEM
1.	RAKSHITHA M R	1SJ20BA040	MBA 3RD SEM
2.	TEJAS GOWDA C	1SJ20BA051	MBA 3RD SEM
3.	POOJA R	1SJ20BA032	MBA 3RD SEM
4.	ADBULLAH	1SJ20BA022	MBA 3RD SEM
5.	NITISH KUMAR N	1SJ20BA030	MBA 3RD SEM
6.	UDAY KIRAN J	1SJ20EC162	ECE 3RD SEM
7.	TEJAS G S	1SJ20EC152	ECE 3RD SEM
8.	HEMANTH R K	1SJ19EC062	ECE 5TH SEM
9.	DARSHAN S R	1SJ19EC041	ECE 5TH SEM
10.	BHARATH B P	1SJ19EC016	ECE 5TH SEM
11.	MANJUSRI N	1SJ20CS082	CSE 3RD SEM
12.	MEGHANA R	1SJ20CS087	CSE 3RD SEM
13.	KISHAORE G D	1SJ20CS071	CSE 3RD SEM
14.	RADHIKA	1SJ18EC126	ECE 7TH SEM
15.	PRAPULLA M S	1SJ18EC120	ECE 7TH SEM
16.	NIRMALA	1SJ18EC106	ECE 7TH SEM
17.	KIRAN KUMAR B C	1SJ18CV052	CIVIL 7TH SEM
18.	ABHISHEK T S	1SJ18CV004	CIVIL 7TH SEM

Figure 9.7.21 - Digital banking awareness program

Figure 9.7.22- Program for B Com students of BGSIMS was held on 28th Sept.2021 at Civil Seminar Hall More than 100 students attended

National Voters' Day

Report on election commission of Karnataka in view of celebration of national voters day 2022 events was organized at college on 2nd November 2021 at 11.00am in civil seminar hall conducted Essay Writing competition

Table 9.7.23 – Winners of Essay Competition

ESSAY WRITING					
WINNER	**NAME**	**SEM/ SEC**	**PHONE NO:**	**MAIL ID**	**DEPARTMENT**
1	Raksha A (1SJ19EC132)	5th C	8088239963	rakshaamurthy@gmail.com	ECE
2	Navyashree A G (1SJ19IS075)	5th B	8431984279	nsag146@gmail.com	IS

POSTER DESIGN					
1	Nandeesh N(1SJ19EC408)	7th A	9902004479	nandigowda475@gmail.com	ECE
2	Chandan Gowda S (1SJ18EC025)	7th A	9071120115	chandangowda2701@gmail.com	ECE

Figure 9.7.24 – Essay Competition held on National Voters day

1st Vaccination drive was organized by NSS TEAM SJCIT in association with ROTARY BGS CHIKKABALLAPURA at 11:30 AM in Academic Block ground floor all the beneficiaries were requested to reap the Benefit of the program on 8th September 2021.

Figure 9.7.25 – 1st Vaccination Drive held at SJCIT Campus

2ndVaccination drive is organized by NSS Team SJCIT, Chickballapur at 10:30 AM in Admin Block ground floor, program on 29/10/2021 Friday.

Registration link address: https://forms.gle/o24dHFweWe8NwwPb7

Total vaccination: 110

Figure 9.7.26 – 2nd Vaccination Drive held at SJCIT Campus

Swachh Chickballapur Abhiyana:

Swachh Chickballapur Abhiyanainthe mark of our Swachh Bharath. This initiative has been taken from the local Web world Infotech Pvt Ltd along with the Rotary Chickballapur BGS to clean the city and give awareness to all the locality of Chickballapur. Event was held at June 4th2017 and the same event will continue every month of 1st Sunday in Chickballapur from July 2017. Photographs of the event are presented.

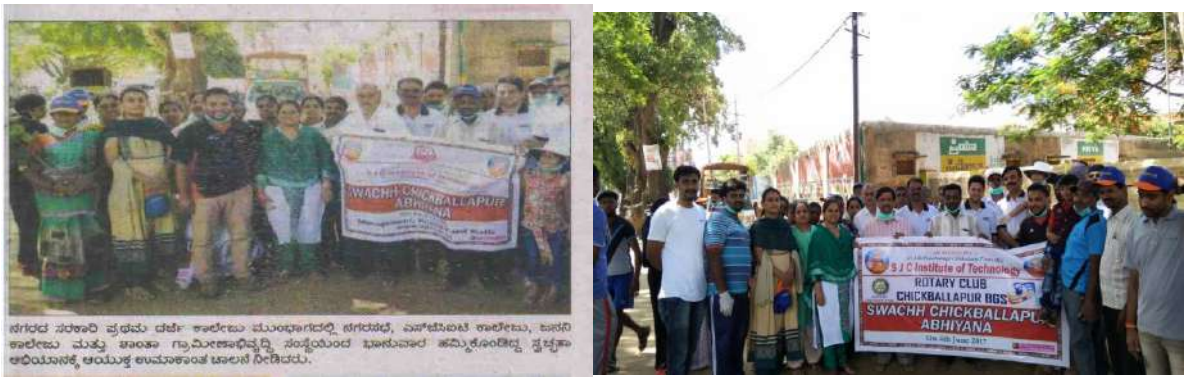


Figure 9.7.26 – Photo graphs of Swachh Chickballapur Abhiyana

Wash In Schools:

- Wash IN Schools (WINS) program was been conduct on 6th June 2017 from Rotary Chickballapur BGS. Wash In Hands program means giving an Awareness Program to the school students to be Hygienic and clean the hands before & after having Food and after using the toilets.
- Rotary Chickballapur BGS Conducted Wash In Hands Program for 3 Schools in Chickballapur and more than 3000 Students along with the Principals & Faculties Members of Schools took part and we also gave a demo for all the students and made them to wash their hands using Hand wash and water
- Rotary Chickballapur voluntarily took initiative in providing the sanitary for Wash In Hands Program and made it to wash all the individual students of all the 3 schools by using the sanitary available on June 6th 2017.

ಕೈ ಶುದ್ಧವಾಗಿದ್ದಲ್ಲಿ ರೋಗ ದೂರ

ಮೂರು ಸಾವಿರಕ್ಕೂ ಹೆಚ್ಚು ಮಕ್ಕಳು ಕೈ ಪರಿಶುಭ್ರತೆ ಪ್ರಾತ್ಯಕ್ಷಿತೆಯಲ್ಲಿ ಭಾಗಿ

Figure 9.7.27 – Pictures and paper cutting of Vijayavaani 6th June 2017

- In association with Shikshana Foundation, Hitachi power grids, Distributed Free laptops for Meritorious SEVEN Girls students and TEN Thousand Scholarship through cash on 16.08.2021

ಉಚಿತ ಲ್ಯಾಪ್‌ಟಾಪ್ ವಿತರಣೆ

ಎಸ್‌ಜೆಸಿ ತಾಂತ್ರಿಕ ಮಹಾವಿದ್ಯಾಲಯದ 7 ಪ್ರತಿಭಾನ್ವಿತ ವಿದ್ಯಾರ್ಥಿಗಳಿಗೆ ಶಿಕ್ಷಣ ಫೌಂಡೇಷನ್, ಹಿಟಾಚಿ ಪವರ್ ಗ್ರಿಡ್ಸ್ ಸಹಯೋಗದಲ್ಲಿ ಲ್ಯಾಪ್ ಟಾಪ್ ವಿತರಿಸಲಾಯಿತು.

ಚಿಕ್ಕಬಳ್ಳಾಪುರ: ಶಿಕ್ಷಣ ಫೌಂಡೇಷನ್, ಹಿಟಾಚಿ ಪವರ್ ಗ್ರಿಡ್ಸ್ ಸಹಯೋಗದಲ್ಲಿ ಎಸ್‌ಜೆಸಿ ತಾಂತ್ರಿಕ ಮಹಾವಿದ್ಯಾಲಯದ ಪ್ರತಿಭಾನ್ವಿತ 7 ವಿದ್ಯಾರ್ಥಿನಿಯರಿಗೆ ಉಚಿತ ಲ್ಯಾಪ್‌ಟಾಪ್ ಹಾಗೂ 10 ಸಾವಿರ ರೂ. ಸಹಾಯಧನ ವಿತರಿಸಲಾಯಿತು.

ಕಾಲೇಜಿನ ಸಭಾಂಗಣದಲ್ಲಿ ನಡೆದ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಶಿಕ್ಷಣ ಫೌಂಡೇಷನ್‌ನ ಆಪರೇಷನ್ ಮ್ಯಾನೇಜರ್ ಚೇತನ್ ಪ್ರಾಸ್ತವಿಕವಾಗಿ ಮಾತನಾಡಿ, ಶಿಕ್ಷಣ ಫೌಂಡೇಷನ್ ಸರಕಾರೇತರ ಸಂಸ್ಥೆಯಾಗಿದೆ. ಸಾರ್ವಜನಿಕ ಶಿಕ್ಷಣ ಇಲಾಖೆಯೊಂದಿಗೆ ಒಡಂಬಡಿಕೆ ಮಾಡಿಕೊಂಡು ಸರಕಾರಿ ಕಿರಿಯ, ಹಿರಿಯ ಪ್ರಾಥಮಿಕ ಶಾಲೆಗಳಲ್ಲಿ ಪ್ರೇರಣಾ ಕಾರ್ಯಕ್ರಮವನ್ನು ಅನುಷ್ಠಾನಗೊಳಿಸಲಾಗಿದೆ ಎಂದರು. ಈ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಎಸ್ ಜೆ ಸಿ ತಾಂತ್ರಿಕ ಮಹಾವಿದ್ಯಾಲಯದ ಪ್ರಾಂಶುಪಾಲ ಡಾ.ಜಿ.ಟಿ.ರಾಜು, ಕುಲಸಚಿವ ಜೆ.ಸುರೇಶ್, ಸಹಾಯಕ ಪ್ರಾಧ್ಯಾಪಕ ಬಿ.ಸಿ.ಮಂಜುನಾಥ್, ಕೆ.ಎನ್.ಚಂದ್ರಶೇಖರ್ ಮತ್ತಿತರರು ಹಾಜರಿದ್ದರು.

Figure 9.7.28 – Pictures and paper cutting on Achieving Meritorious students

ಎಸ್‌ಜೆಸಿಐಟಿ ವಿದ್ಯಾರ್ಥಿನಿಯರಿಗೆ
ಉಚಿತ ಲ್ಯಾಪ್‌ಟಾಪ್ ವಿತರಣೆ

ಚಿಕ್ಕಬಳ್ಳಾಪುರ: ಶಿಕ್ಷಣ ಫೌಂಡೇಷನ್, ಒಟಾಚಿ ಪವರ್ ಗ್ರಿಡ್ ಸಹಯೋಗದಲ್ಲಿ ಎಸ್ ಜೆ ಸಿ ತಾಂತ್ರಿಕ ಮಹಾವಿದ್ಯಾಲಯದ ಪ್ರತಿಭಾನ್ವಿತ ಏಳು ವಿದ್ಯಾರ್ಥಿನಿಯರಿಗೆ ಉಚಿತ ಲ್ಯಾಪ್‌ಟಾಪ್ ಹಾಗೂ 10 ಸಾವಿರ ರೂ. ಸಹಾಯಧನ ವಿತರಿಸಲಾಯಿತು.

ಕಾಲೇಜಿನ ಸಭಾಂಗಣದಲ್ಲಿ ನಡೆದ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಶಿಕ್ಷಣ ಫೌಂಡೇಷನ್‌ನ ಅಪರೇಷನ್ ಮ್ಯಾನೇಜರ್ ಚೇತನ್ ಅವರು ಪ್ರಾಸ್ತಾವಿಕವಾಗಿ ಮಾತನಾಡಿ ಶಿಕ್ಷಣ ಫೌಂಡೇಷನ್ ಸರ್ಕಾರೇತರ ಸಂಸ್ಥೆಯಾಗಿದ್ದು, ಸಾರ್ವಜನಿಕ ಶಿಕ್ಷಣ ಇಲಾಖೆಯೊಂದಿಗೆ ಒಡಂಬಡಿಕೆ ಮಾಡಿಕೊಂಡು ಸರ್ಕಾರಿ ಕಿರಿಯ, ಹಿರಿಯ ಪ್ರಾಥಮಿಕ ಶಾಲೆಗಳಲ್ಲಿ ಪ್ರೇರಣಾ ಕಾರ್ಯಕ್ರಮವನ್ನು ಅನುಷ್ಠಾನಗೊಳಿಸಲಾಗಿದೆ ಎಂದು ಹೇಳಿದರು.

ಸಂಸ್ಥೆ ಪ್ರೇರಣಾ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಆಯ್ದ ಪಬ್ಲಿಕ್ ಶಾಲೆಗಳಲ್ಲಿ ಉಚಿತವಾಗಿ 314 ಲ್ಯಾಪ್‌ಟಾಪ್ ಮತ್ತು 157 ಪ್ರೊಜೆಕ್ಟರ್‌ಗಳನ್ನು ಮಕ್ಕಳಲ್ಲಿ ಕೌಶಲ್ಯ ವೃದ್ಧಿಸುವ ಕಾರ್ಯವನ್ನು ಈಗಾಗಲೆ ಮಾಡಿದೆ.

ಶಿಕ್ಷಣ ಫೌಂಡೇಷನ್ ಹೆಣ್ಣು ಮಕ್ಕಳ ಸಬಲೀಕರಣ ಕಾರ್ಯಕ್ರಮದಡಿ ಆರ್ಥಿಕವಾಗಿ ಹಿಂದುಳಿದ ಇಂಜಿನೀಯರಿಂಗ್ ವಿದ್ಯಾರ್ಥಿನಿಯರ ಉನ್ನತ ಶಿಕ್ಷಣಕ್ಕೆ ಸಹಕಾರಿಯಾಗಲೆಂದು ಉಚಿತ ಲ್ಯಾಪ್‌ಟಾಪ್ ಹಾಗೂ 10 ಸಾವಿರ ರೂಗಳ ಸಹಾಯಧನ ಮಾಡಲಾಯಿತು.

ಪ್ರಾಂಶುಪಾಲ ಡಾ॥ ಜಿ.ಟಿ.ರಾಜು, ಕುಲಸಚಿವ ಸುರೇಶ್.ಜಿ, ಸಹಾಯಕ ಪ್ರಾಧ್ಯಾಪಕ ಮಂಜುನಾಥ ಬಿ.ಸಿ, ಚಂದ್ರಶೇಖರ ಕೆ.ಎನ್ ಮತ್ತು ನಂದೀಶ್, ಶಿಕ್ಷಣ ಫೌಂಡೇಶನ್‌ನ ವ್ಯವಸ್ಥಾಪಕ ನರ್ದೇಶಕ ಚೇತನ್, ಜಿಲ್ಲಾ ಸಂಯೋಜಕರು ನಂಗಪ್ಪ, ವಿಜಯ್ ಕುಮಾರ್ ಹಾಗೂ ಮಾರ್ಗದರ್ಶಕ ಪಮಿತ್ರವರು ಹಾಜರಿದ್ದು, ಕಾರ್ಯಕ್ರಮದ ಯಶಸ್ಸಿಗೆ ಪಾತ್ರರಾದರು.

Figure 9.7.29 – Pictures and paper cutting Vijayavani on 17.08.2021

COLLEGE FEST:

Sambhrama is a Cultural fest and it is a annual Techno-cultural extravaganza successfully conducting since establishment of this Institution. Sambhrama has been setting the stage for student"s community to showcase their talents, Innovations and creativity with zeal and zest. Ethnic day is celebrating every year.

Events conducted in the SAMBHRAMA

Table 9.7.2f – List of events conducted during Cultural Fest - Sambhrama

Sl. No.	Events
1	Rangoli
2	Sudoku
3	Mehendi
4	Essay Writing (English/Kannada)
5	Debate (English/Kannada)
6	Quiz
7	Pick N Speak (English/Kannada)
8	Pot Painting
9	Sketching
10	Cooking without fire
11	Painting
12	Dumb Charades
13	Anthakshari
14	Solo singing

SPORTS FACILITIES AND ACTIVITIES:

The Institution supports sports activities and has provided the various sports facilities to meet the students need for both indoor and outdoor games. The sports facilities meet the national standard. There is a well-equipped gym encouraging students maintain physical fitness. Students are encouraged to participate in various zonal and inter-zonal tournaments. Students participate in inter collegiate and university tournaments. Sports day is celebrated with various sports events like Athletics, Long Jump, Cricket, Volleyball, Kabbadi, Hockey, Basket Ball, Throw Ball, Football, Kho-Kho, Ball Badminton, Badminton, Table Tennis, Chess, and Carom etc.

Table B.9.7.2g Details of Indoor and Outdoor sports facilities at the Institution

Sl. No.	Sports / Games	Facilities	Facilities
A. Outdoor Games			
1	Athletics	400mts, 8 lane tracks of international standard with facilities for all field & tract events	
2	Cricket	Cricket Field	
3	Foot Ball	Foot Ball Field	
4	Hockey	Hockey Field	
5	Basket Ball	Basket Ball concrete court	01
6	Volley Ball	Volley Ball courts.	03
7	Kho - Kho	Kho – Kho Court	01
8	Kabbadi	Kabbadi Court	01
9	Throw Ball	Throw Ball Court	01
10	Lawn Tennis	Lawn Tennis Court	01
B. Indoor Games			
1	Badminton	Badminton Court	02
2	Table Tennis	Table Tennis Boards	03
3	Chess &Carrom	Chess & Carom	01 room
4	Billiards	Billiards Table	01
		Billiards Sticks	04
		Billiards Q. Ball	02
5	Gymnasium – Multi Gym	Multi Gym	12 stations
		Power Ball	01
		Stepper	02
		Rowing Machine	03
		Cycle	04
		Bench Press	04
		Jogger Manual	04
		Dumbles Stand	01
		Dip Stand	5 pairs
		Dumbles	1000 Kg

		Weights	1000 Kg
		Weight Lifting Bars	15 Nos.

List of important sports events conducted by the college during assessment years are presented in the following Table B.9.7.2e.

Table B.9.7.2g Details of Indoor and Outdoor sports facilities at the Institution

Sl. No.	Academic year	Events organised	Date
1	2020-21	Nil	Nil
2	2019-20	VTU inter collegiate Bangalore north zone and inter zone Cricket tournament men and Cricket selection trails	15th March to 17th April 2019
		VTU inter collegiate Bangalore north zone HOCKEY tournament (Men)	16th May 2019
		VTU Single Zone Judo & Wrestling (Men& Women) Competition 2019	06th to 07th August 2019
3	2018-19	VTU inter collegiate Bangalore zone hand ball women tournament	19th March 2018
		VTU inter collegiate Bangalore north zone and inter zone Kho-Kho and selection trails men tournament	06th to 10th April 2018
		21st VTU inter collegiate ATHLETIC MEET	26th to 29th October 2018

The following section shows photographs of the various sports activities organized by the Institution.

Figure 9.7.30 – Kabaddi team participated and secured 2nd Place in VTU Inter Collegiate Kabaddi tournament (women) which was held at Sai Ram College, Bangalore

Figure 9.7.31 –VTU Inter Collegiate Throw Ball tournament (Women) participated and secured 2nd Place at Sai Vidya Institute of Technology, Bangalore

Figure 9.7.32 –VTU Inter Collegiate Bangalore north zone Cricket (Men) Tournament during 19th to 29th March 2017

ACHIEVEMENTS:

SJCIT has received a meritorious Institution cash prize award of rupees one lakh for the academic year 2016-17 from VTU, Belagavi.

Figure 9.7.33 – Photograph displaying receipt of Institution Cash Award at VTU, Belagavi

- Our college Throw Ball team participated in VTU Inter Collegiate Bangalore north zone and inter zone Throw ball (Women) Tournament during 6th to 10th Oct 2017 at NMIT BengaluruTeam won 2nd Place.
- Our college Kabaddi team participated in Inter Collegiate Kabaddi tournament 2018 (woman) which was held at Sai Ram College, Bangalore. They secured 2nd Place.
- Our college kabaddi team participated in VTU Inter Collegiate Bangalore North Zone and Inter Zone kabaddi Tournament (Men) 2018 which was held at Zone at Dr TTIT KGF Kolar, they secured 1stPlace. Inter Zone at VCET PUTUR, and inter zone they secured 3rd Place.

- Our college Volley Ball team participated in VTU Inter Collegiate Volley Ball tournament (Men) which was held at Acharya IT, Bangalore. They secured 2nd Place.
- Our college staff participated in state level cricket Tournament held at PES Bangalore on 19th to 20th November 2018.
- Our college students participated in VTU state level Wrestling & Judo (men &women) Competition at Sapthagiri College of Engineering On 9th and 10th November 2018 Men-wrestling 2nd place, 3rd place. Judo 1st Place, 2ndplace.Women - wrestling 1st place, 2nd place and 3rd place, Judo 1st Place, 2nd place and was also selected for Nationals.
- Our college Table Tennis team participated in VTU Inter Collegiate Table Tennis tournament (Women) which was held at Vijay Vitala Institute of Technology Bengaluru. On 3rd to 4th September 2018 Secured 2nd Place.
- Our college kabaddi team participated in VTU Inter Collegiate Bangalore Zone and Inter Zone kabaddi Tournament (Women) 2019 which was held on Zone level at SVIT Bengaluru, they secured 1stPlace. And Inter Zone on VSMSRKIT NIPANI. They secured 2nd Place.
- Our college students participated in VTU state level Wrestling & Judo (men &women) Competition at SJC Institute of Technology On 6th to 7th September 2019.
- SJC Institute of Technology Women team have grabbed VTU Wrestling Champion Trophy with 3 Gold Medals and 3 silver Medals with 2 Bronze Medals.
- SJC Institute of Technology Men team have grabbed VTU Wrestling Runner Trophy with 2 Gold Medals and 1 silver Medals with 2 Bronze Medals.
- SJC Institute of Technology Women team have grabbed VTU judo Runner Trophy with 1 Gold Medals and 1 silver Medals with 1 Bronze Medals.

NSS STUDENT COORDINATOR FOR SPORTS DIVISION LEVEL "BGS MEMORIAL SPORTS CHAMPIONSHIP-2021

Table B.9.7.2h – list of student Sports Co-Ordinator

SI NO	NAME	DEPARMENT	SEM/SEC
1	HEMANTH R K	ECE	5th/A
2	GANESH K	ECE	5th/A
3	DARSHAN S R	ECE	5th/A
4	TEJAS	ECE	3rd/C
5	PUNITH	ECE	3rd/B

Figure 9.7.34 – Inter College – Staff sports

CRITERIA 10

Governance, Institutional Support and Financial Resources

CRITERION 10	GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES	120

10. Governance, Institutional support and Financial Resources (120)

10.1 Organization, Governance and Transparency (40)

10.1.1. State the Vision and Mission of the Institute (5)

Vision of the Institute

Preparing competent Engineering and Management Professionals to Serve the Society

Mission of the Institute

- Providing Students with a Sound Knowledge in Fundamentals of their Branch of Study
- Promoting Excellence in Teaching, Training, Research and Consultancy
- Exposing Students to Emerging Frontiers in various domains enabling Continuous Learning
- Developing entrepreneurial acumen to venture into innovative areas
- Imparting value based professional education with a sense of social responsibility

10.1.2. Governing body, Administrative Setup, and Functions of Various Bodies, Service Rules, Procedures, Recruitment, And Promotional Policies (10)

The Governing Body:

The Governing Council of the college is the main administrative body. It is constituted as per the guidelines framed by All India Council for Technical Education, affiliating University and government of Karnataka. The main objective of the governing council is to offer quality education in the best possible means to ensure that the graduates are employable and socially acceptable. The Governing Council is guided by the spiritual and religious leaders of the Sri Adichunchanagiri Mahasamsthana Mutt. The Council is headed by His Holiness Jagadguru Sri Sri Sri Dr. Nirmalanandanatha Mahaswamiji, President, Sri Adichunchanagiri Shikshana Trust® and comprises of eminent personalities in the society, Academicians, and Industry experts. The distinguished members are drawn from different cross-sections of the society as shown in Table B.10.1.2a.

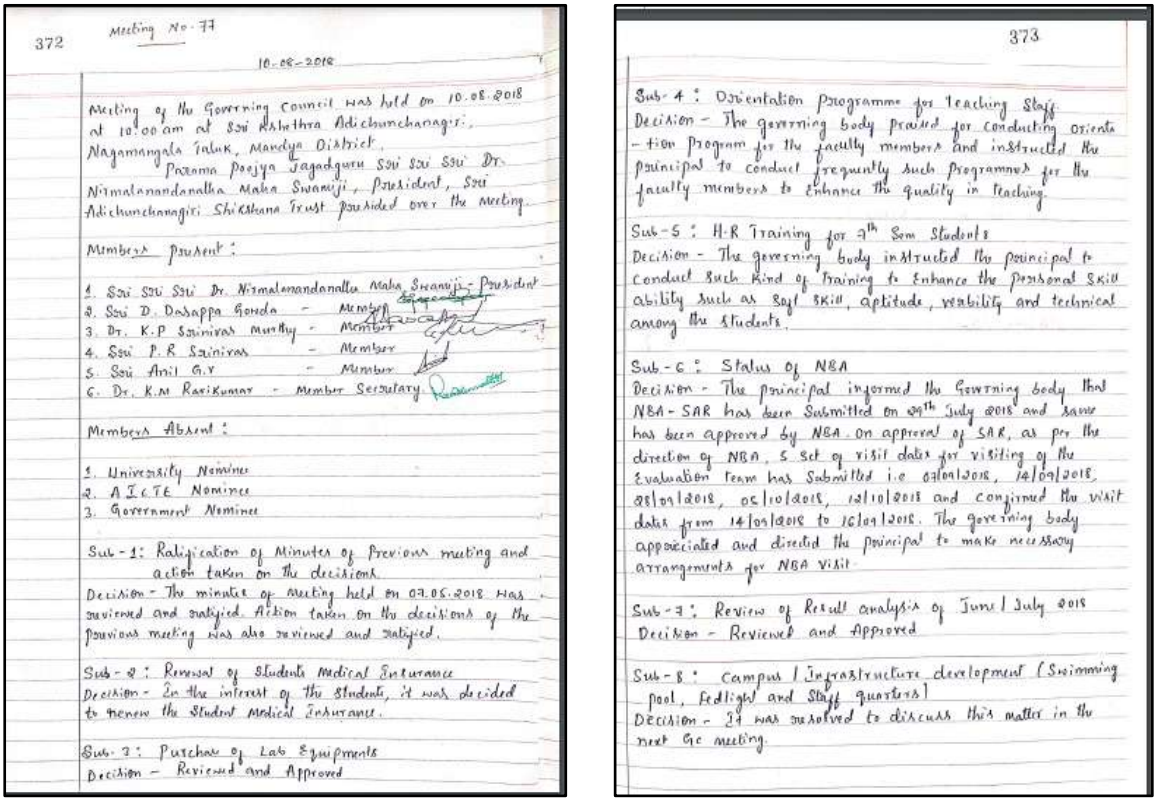
Table B.10.1.2a: Structure of Governing Council of SJCIT

Sl. No	Name of the Member	Profession	Designation
1	Sri Sri Sri Dr. Nirmalanandanatha Mahaswamiji	President, Sri Adichunchanagiri Shikshana Trust ®	Chairman
2	Sri Sri Mangalanatha Swamiji	Sri Adichunchanagiri Shikshana Trust ®, Chickaballapura Shakha Mutt	Secretary
3	Dr. K P Srinivas Murthy	Doctor	Member
4	Sri Anil G V	Industrialist	Member
5	Sri K Govindraj	MLC	Member
6	Sri P R Srinivas	Industrialist	Government Nominee
7	Dr. B S Dhaliwal	Vice Chancellor	University Nominee
8	Sri. R. Manjunatha	Director of Technical Education	Government Nominee
9	Dr. R. Sakthivel	Regional Officer and Assistant Director, South Western Regional Office	AICTE Nominee
10	Prof. P K Maha Pathra	Professor	AICTE Nominee
11	Dr. G T Raju	Principal	Member Secretary

The Governing Council meets regularly twice in a year. All the activities of the Institute, the performance of students, academic matters, research progress and strategic plans for the overall development will be presented by the Principal / Member Secretary. All the matters will be reviewed and suitable suggestions for improvement will be sought from the Honourable members of the Governing Council. Minutes of the Governing Council meeting will be circulated to all the members after taking approval from Chairman of Governing Council. The Governing Council meeting details are presented in the Table B.10.1.2b. A sample of minutes of meeting is shown in figure 10.1

Table B.10.1.2b: Governing Council meeting held during Previous Years

Sl. No.	Year	Number of Meeting	Date of Meeting
1	2020	2	25/06/2020
			06/01/2020
2	2019	2	08/09/2019
			26/05/2019
3	2018	3	04/12/2018
			10/08/2018
			07/05/2018



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Meeting No. 77

10-08-2018

Meeting of the Governing Council was held on 10.08.2018 at 10.00 am at Sri Kshethra Adichunchanagiri, Nagamangala Taluk, Mandya District. Parama Poojya Jagadguru Sri Sri Sri Dr. Nirmalanandanatha Maha Swamiji, President, Sri Adichunchanagiri Shikshana Trust presided over the meeting.

Members present:

1. Sri Sri Sri Dr. Nirmalanandanatha Maha Swamiji - President
2. Sri D. Dasappa Gowda - Member
3. Dr. K.P Srinivas murthy - Member
4. Sri P.R Srinivas - Member
5. Sri Anil G.V - Member
6. Dr. K.M RaviKumar - Member Secretary

Members Absent:

1. University Nominee
2. AICTE Nominee
3. Government Nominee

Sub-1: Ratification of Minutes of Previous meeting and action taken on the decisions.
Decision - The minutes of meeting held on 07.05.2018 has reviewed and ratified. Action taken on the decisions of the previous meeting was also reviewed and ratified.

Sub-2: Renewal of Students Medical Insurance
Decision - In the interest of the students, it was decided to renew the Student Medical Insurance.

Sub-3: Purchase of Lab Equipments
Decision - Reviewed and Approved

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Sub-4: Orientation Programme for Teaching Staff
Decision - The governing body praised for conducting orientation Program for the faculty members and instructed the principal to conduct frequently such Programmes for the faculty members to Enhance the quality in Teaching.

Sub-5: H.R Training for 7th Sem Students
Decision - The governing body instructed the principal to conduct such kind of Training to Enhance the Personal Skill ability such as Soft Skill, aptitude, verbility and technical among the students.

Sub-6: Status of NBA
Decision - The principal informed the Governing body that NBA-SAR has been Submitted on 09th July 2018 and same has been approved by NBA. On approval of SAR, as per the direction of NBA, 5 Set of visit dates for visiting of the Evaluation team has Submitted i.e 07/09/2018, 14/09/2018, 28/09/2018, 05/10/2018, 12/10/2018 and conformed the visit dates from 14/09/2018 to 16/09/2018. The governing body appreciated and directed the principal to make necessary arrangements for NBA visit.

Sub-7: Review of Result analysis of June/July 2018
Decision - Reviewed and Approved

Sub-8: Campus / Infrastructure development (Swimming pool, Fedlight and Staff quarters)
Decision - It was resolved to discuss this matter in the next GC meeting.

Figure 10.1. A snap shot showing contents of Minutes of Meeting held in the year 2018

The Administrative setup:

The Institute believes in a transparent and decentralized work culture. The employees are empowered to initiate development actions for the improvement of quality education. The Organization structure is as shown in Figure 10.2

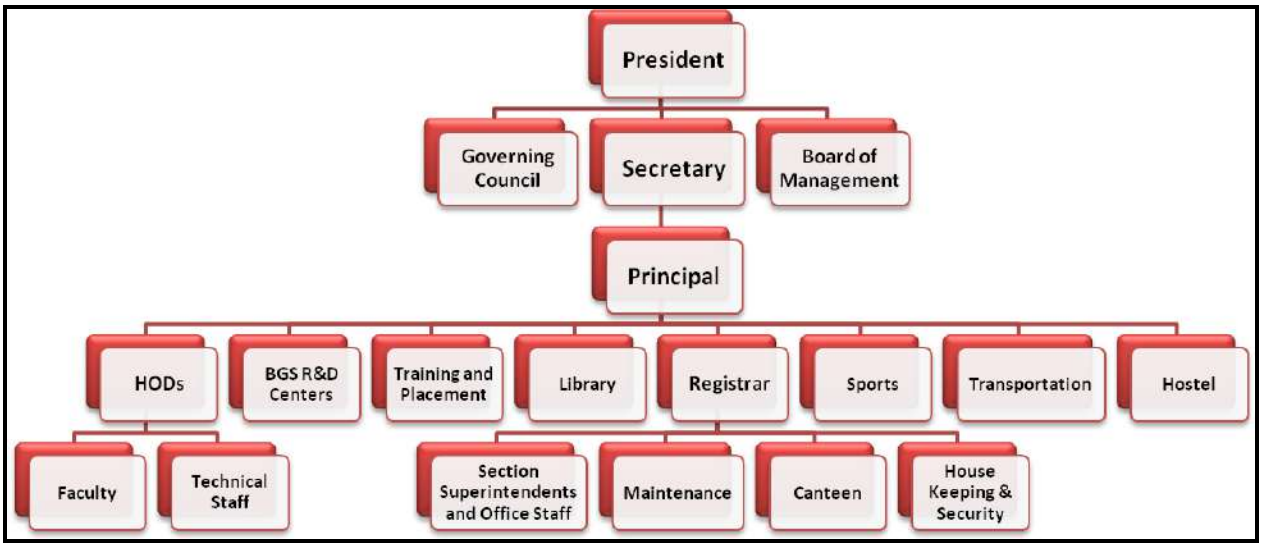

Figure 10.2: Organization Structure of the Institute

The above organization structure indicates the major portfolios and their reporting structure. However, the Institute has identified other key responsible areas and has been assigned to different faculty members. This is the core teams which lead the processes at the Institution Level. The functions and responsibilities of various positions are defined and presented in the following Table B.10.1.2c.

Table B.10.1.2c Functions of various bodies and positions

POSITION	FUNCTIONS
Governing Council	• Frame directive principles and policies. • Amend and approve policies from time to time. • Approve Budgets.
Principal	• Head of the Institution. • Academic and administrative management of the institution. • Policy planning and providing academic and administrative leadership. • Monitoring and Evaluation of academic and research activities. • Promotion of industry-institution interaction. • Providing Consultancy services. • Participation in policy planning at the regional/National level for development of technical education. • Allocation of budget and budget monitoring. • Managing the Quality Management System of the Institution. • Teaching.

	• Student and stakeholders' satisfaction. • Monitoring the Implementation of ISO 9001-2015 systems and standards across the organization. • Approval of Master timetable, Quality Manual and Quality System Procedures and changes to the same, Calendar of Events, Institution related documents.
Director [Research and Incubation Centre for Entrepreneurship]	• Create Awareness about Entrepreneurship and Intellectual Property Rights • Initiate new ideas to solve local problems through IDEATHON & HACKATHON process and convert ideas into proof of concept. Establish collaboration with government and non-government funding agencies to enhance research, innovation and entrepreneurial related activities. • Guide & motivate the students to become entrepreneurs. • Research & Development, Publications and Funding
Registrar	• Preparing regular financial and administrative reports. • Administration of Institution databases. • Managing office supplies stock and placing orders. • Prepare reports and presentations with statistical data, as assigned. • Organize a filing system for important and confidential Institute documents. • Office Administration. • Administration of the Institution as per the directions of Management and Principal. • Co-Ordinate with the MR in the Institution related matters. • Manages the financial matters of the college. • Budget monitoring. • Liaisoning administrative activities with Management, University, Central and State Government and Bodies, Local administration and Authorities, Principal, Staff, Students and Parents. • Managing and Monitoring the Purchase and Stock Verification activities.

	• Co-Ordination with the Supporting Sections Staff in organizing Extra/Co-Curricular activities. • Monitoring the Admission, Examination, Establishment and Recruitment Activities of the Institution. • Monitoring the Security activities & General Amenities across the Institution. • Monitoring the Implementation of ISO 9001-2015 Systems & Standards in the Office and its related area. • Approval of Office related work instruction. • Housekeeping.
Head of Department	• Head of Department/Teaching/Research/Training. • Academic and administrative management of the department. • Teaching and research activities. • Implementation of ISO 9001 -2015 Systems & Standards Review of Lesson Planning, Review of Test Question papers. • Providing leadership in both post-graduate and undergraduate courses in relevant field of specialization. • Consultancy services. • Policy planning, Monitoring and Evaluation and Promotional activities both at departmental and institutional level. • Curriculum development and developing resource materials. • Design and development of new programmes. • Continuing education activities. • Interaction with industry and society. • Students counselling and interaction. • Administration both at Departmental and institutional levels. • Student and stakeholders' satisfaction. • Housekeeping.
Librarian	• Library Head. • General administration of library. • Budgeting, Planning and developing the library. • Books, periodicals, videotapes selection, acquisition & Storage. • Supervising of cataloguing and indexing. Automation aspects. • Maintenance of library books, periodicals, videotapes, catalogues etc. • E learning resources. • Student satisfaction. • Implementation of ISO 9001 -2015 systems and standards. • Approval of Library work instruction. • Housekeeping, Development of Digital Library.

Placement Officer	• Industry Interaction. • Organizing the Campus Recruitment. • Interaction with Industries and arrange Industrial visits, Technical Seminars. • Organizing Career Guidance and Personality Development Programs. • Organizing General Aptitude Tests. • Assisting the academic departments to get projects. • Organizing for Training as per academic department's requirements. • Implementation of ISO 9001-2015 systems and standards. • Approval of Placement work instruction and Letters.
Warden	• Hostel Activities. • Overall Monitoring of Hostel Activities. • Implementation of ISO 9001-2015 systems and standards. • Approval Routine Hostel Documents. • Maintenance of Discipline in the Hostel, Housekeeping.
Professors/ Associate/ Assistant Professors	• Teaching /Laboratory Maintenance. • Conduction of theory and practical classes. • Planning laboratory work & Maintenance of Laboratories. • Support HOD/Professor in Lab / Workshop Maintenance. • Preparation of lesson planning and test question papers. • Student Counselling and Interaction by the Proctors. • Support department in organizing curricular and extracurricular activities. • Implementation of ISO 9001-2015 systems and standards. • Awarding Internal Assessment Marks. • Housekeeping.
Foreman, Lab instructors, System programmers	• Laboratory Maintenance. • General Maintenance of Laboratory and equipment. • Maintenance of Computer Hardware & Software in the lab. • Maintenance of Problem and Maintenance Registers. • Updating of Stock Registers. • Supervising the activities of supporting lab Staff. • Assisting in the conduction of the Laboratory classes. • Student satisfaction. • Implementation of ISO 9001 -2015systems and standards. • Updating Stock Registers and Maintenance Registers. • Housekeeping.

Service Rules:

Service rules are constituted by Sri Adichunchanagiri Shikshana Trust and are documented in Sri Adichunchanagiri Shikshana Trust manual. The Service rules are made available for all the employees of the organization. The Services rules are under the guidelines of AICTE, affiliating University and Government of Karnataka. The establishment section maintains Service Book for every staff member. The Institution has Standard Operating Process is defined for all the activities of the Institution. The Recruitment procedure for the appointment of teaching faculty is presented below.

- Staff requirement details will be collected from the HODs through prescribed format during the academic year and will be placed before the Management for approval to advertise in the newspapers.
- Advertisement will be given in different newspapers by mentioning Qualifications, Experience, Pay Scales, etc.
- After receiving the applications / resumes, it will be scrutinized and shortlisted.
- Shortlisted candidates will be called for interview on the prescribed date.
- The Selection Committee meeting will be called on the prescribed date and the representative from VTU, AICTE, Governing Council Members with respective HOD and Subject Expert will be invited for the Interview.
- The Committee prepares the Merit List (Selection List).
- A letter signed by Principal shall be issued to the selected candidate (In the case of delay in obtaining signature of the President). The President of the Trust shall issue Appointment Order. The candidate will meet the Principal and report to duty within the specified joining date as mentioned in the letter signed by the Principal/President and submit all his / her original documents to the Office. In case, the candidate requests for an extension of joining period, the same shall be examined by the Principal and suitable decision will be conveyed to the candidate. In case, the chosen candidate does not report within the prescribed time, his / her appointment stands cancelled and a fresh Appointment Order is issued to the waitlisted candidate.
- The HOD will be informed about the reporting of duty.
- Name of the staff who has joined will be informed to the Library, Transportation section and hostels.

Promotional Policies:

Policies regarding promotion are as per AICTE norms. Additional increments are given to the faculty who excel in academics and research.

10.1.3. Decentralization in working and grievance redressal mechanism (10)

The Institution has identified various committees and is empowered to take appropriate decisions to ensure over all functioning of the institution are smooth. The committee in general consists of faculty members, key Officers from the Government of Karnataka, Industry Representatives, Alumni's and Student Representatives. The various committees, team members and its responsibilities are presented in the following Table B.10.1.3.

Table B.10.1.3: Committees, members and its responsibilities

Sl. No.	Name of the Committee	Members	Roles and Responsibilities
1.	**Discipline Committee**	**1. Dr. Srinivas Reddy Perla, HOD, Maths** 2. College level committee member 3. Department level committee member	• To oversee and monitor the overall discipline of students in the college, and review it periodically. • To take decisions and actions related to indiscipline activities of the students in the college as and when required
2.	**Anti Ragging Committee**	**1. Dr. G Narayan, CED,Chairman** 2. Dr.M.N.Manjunath, , Chemistry 3. Dr.Nataraj S N, MED 4. Circle Inspector, Chikkaballapur 5. Sub Inspector,Rural Police Station 6. Mr. Chethan, Student Representative 7. Mr. Manoj Kumar, Student Representative	• Anti-Ragging Committee will be the Supervisory and Advisory Committee in preserving a Culture of Ragging Free Environment in the college Campus. • The Anti-Ragging Squad- office bearers will work under the Supervision of Anti Ragging Committee and to engage in the works of checking places like Hostels, Buses, Canteens, Classrooms and other places of student congregation. • Anti-Ragging Committee will be involved in designing strategies and action plan for curbing the Menace of Ragging in the college by adopting array of activities.

3.	**Anti-Ragging Flying Squad**	1. **Prof.Ravindra, CED, Chairman** 2. Prof.Kalaiah J B, ECE 3. Prof. Srinivas Murthy, CSE 4. Prof.Yogaraj, ISE 5. Prof. Harish S, MED 6. Prof.Rohith L G, AE 7. Prof. Mahesh, Maths	• Anti-Ragging Squad will be working under the Monitoring of Anti Ragging Committee and will seek advice from the Anti-Ragging Committee. • The functions of Anti-Ragging Squad will be to keep a vigil and stop the incidences of Ragging, if any, happening / reported in the places of Student aggregation including, Classrooms, Canteens, Buses, Grounds, Hostels etc. • The Squad will also educate the students at large by adopting various means about the menace of Ragging and related Punishments there to. • A gamut of positive reinforcement activities is adopted by Anti-Ragging Squad for orienting students and moulding their personality for a better cause. They shall work in Consonance and Guidance of Anti Ragging Committee.
4.	**Internal Quality Assurance Cell** **(IQAC)**	1. **Dr.B.N Shobha, ECE, Chairman** 2. Management Representatives 3. Dr T Munikenche Gowda, BGS R&D 4. All HODs	• Development of quality benchmarks/parameters for various academic and administrative activities of the institution and carry out the gap analysis for SJCIT • Facilitating the creation of a learner-centric environment conducive to quality education and faculty maturation to adopt the required knowledge and technology for participatory teaching and learning process carrying out periodic check of course outcome attainment and action taken from each faculty and its mapping on to POs, PEOs. • Monitor the action taken by departments on feedback response from students, parents and other stakeholders on quality-related institutional processes; • Dissemination of information on various quality parameters of higher education; • Organization of inter and intra institutional workshops, seminars on quality related themes and promotion of quality circles; • Documentation of the various programmes / activities leading to quality improvement; • Acting as a nodal agency of the Institution for coordinating quality-related activities, including adoption and dissemination of best practices; • Development and maintenance of institutional database through MIS for the purpose of maintaining /enhancing the institutional quality; • Development of Quality Culture in the institution; • Preparation of the Annual Quality Assurance Report (AQAR) and submit to NAAC.

5.	**Students Grievance Redressal Cell:**	1. **Dr.Nagendra Kumar N, ECE, Chairman** 2. Dr.Manjunath Kumar H B, HOD, CSE 3. Prof.Deepa M S, HOD, AE 4. Dr.Bharathi M, CSE 5. Prof.Sharada S A, CED	• To develop an organizational framework to resolve Grievances of Students. • To provide the students access to immediate, hassle-free recourse to have their Grievances redressed. • To enlighten the students on their duties and responsibilities. • To establish structured interactions with Students to elicit information, academic and administrative process on their expectations. • To institute a monitoring mechanism to oversee the functioning of the Grievance Redressal Policy.
6.	**Anti- Sexual Harassment Committee**	1. **Dr.Manjunath Kumar H B, CSE, Chairman** 2. Dr. Suma, MBA 3. Prof. Deepa M S, AE 4. All HODs	• To provide conciliation to settle the matter between her and the respondent. • Conduct inquiry within the time frame (90 days) as prescribed in the Act. • Prepare inquiry and settlement reports & submit the same to the Director. • Ensure confidentially in conciliation proceedings and conducting inquiry as well as in keeping records. • Easy accessibility.
7.	**Alumni Association Committee**	1. **Prof.Satheesh Chandra Reddy, ISE, Chairman** 2. Mr.Sunil Kumar 3. Ms.GeethaVivekanand 4. Mr.VenkateshKempa Reddy 5. Mr.Shaik Mahammad Raffi 6. Mr.Ravi Chandra 7. Mr Naveen 8. Mr.Pramodh Gowda 9. Mr.Anilkumar .P.V. 10. Mr.Venkatesh .Kolaram	• To maintain alumni data base, ensure alumni meetings, establish alumni interaction, to promote alumni awareness engagement and commitment to the Institute, support a strong relationship between the alumni association and current students.
8.	**Committee of Wardens**	1. **Dr Vijay G R, ISE, Warden** 2. Sri J Suresha, Registrar 3. Prof.Chethan H V, ISE 4. Prof.Susheelamma, ISE	• To plan and monitor the maintenance of all the infrastructure facilities concerned with the Hostel • To supervise all facilities/amenities and their up keep, receive complaints from students, redress of grievances etc. • To control, counsel the behavior of students in the hostel, monitor study schedules and patterns, etc. • To plan for all the infrastructure facilities required as per • Responsible for proper maintenance of the lodging and boarding facilities of the hostel and for smooth running of the hostel • Responsible for the receipts and the payments of the hostel.

9.	**Library Committee**	1. **Dr.Nataraj S N, Chairman** 2. Mr. Lohith, Librarian 3. All HODs	• The Library Committee provides a forum for discussion of matters relating to the Library and its services. • To decide and adopt policies to govern the management and programme of the library. • To prepare the annual budget, rules and regulations of the library. • The committee also looks into students complains, if any. • The Library Committee is a standing committee of the Academic Council.
10.	**Canteen Committee**	1. **Dr. G. Narayana, CED, Chairman** 2. Prof. Kiran K M, CED 3. Prof.Vathsala M N, CED 4. Student representative from every dept.	• To supervise, take steps for the maintenance of canteen facilities with hygiene • To maintain and control the quality of food supplied in the canteen • To modernize the canteen equipment and cooking procedures • To control and make suggestions to the canteen management • To plan for all the infrastructure facilities required as per norms
11.	**Career Guidance Cell**	1. **Mr. Sunil Kumar Nayak B, TPO, Chairman** 2. Dr. Ravi Kumar T R, MED 3. Prof. Narendra Babu, CSE 4. Prof.AravindaThejas Chandra, ISE 5. Prof.Ravindra, CED 6. Dr.Sudhir P, ECE 7. Prof.Deepa M S, AE	• Collects and maintains the student's database for the purpose of HR activities • Does the training need analysis for all third year students. Based on the same, plans for imparting the necessary skills such as soft skills, hard skills and technical skills. • Responsible for identifying placement opportunities across reputed organizations. • Arrange for interaction with industry and bridge the gap between Institute and industry. • Arranges for better conduct of industry – specific Training programmes • Assists companies in the recruitment process by conducting interviews, group discussions, written tests etc. in the Campus. • Arranges the special sessions for providing the contemporary trends and development in the technologies and tools to the students • The Training and placement Cell conducts lectures on personality development communication skills and conduct mock sessions for improving presentation skills. • Plan, designs, and imparts soft skills to the students. • Plan, designs and imparts personality development to the students. • Plan, designs and implements finishing schools to the students. • Coordinates with Training Officer for identifying the training requirements related to Soft and communication skills

12.	**Student Welfare Committee**	1. **Prof.Satheesh Chandra Reddy, ISE, Chairman** 2. Dr.Manjunath Kumar H B, CSE 3. Prof. Ravi Kiran, CED 4. Mr. Shivaram, Administrative Office	• Coordinating problems in the distributions of BC, MBC, SC/ST scholarship to the deserving candidates. Monitoring students' facilities, organizing financial support to deserving students.
13.	**Transportation Committee**	1. **Dr. P. Rukmangadha, MED, Chairman** 2. Sri. J. Suresha, Registrar 3. Mr. Byrappa, Transport section	• To organize route schedule, to monitor maintenance of vehicles, liaison with Government, to address issues related to man power
14.	**College Internal Complaints Committee (CICC)**	1. **Dr.B.N Shobha, ECE, Chairman** 2. Dr.Manjunath Kumar H B, CSE 3. Dr. Suma S, MBA 4. Smt. Geethadevi K.L, CED 5. Ms. Hamsa, Student, CSE 6. Ms. Spoorthi, Student,MED 7. Ms. L Harshith, Student,AED 8. Smt. Leela Sriramaiah, NGO Member	• Creates awareness about the internal complaint committee among the Institute academic and administrative units. • Promotes effective communication and collaboration among those responsible for complaints • Ensures that the complainant and witnesses are not victimized or discriminated because of their complaint. • Encourages an open-dialogue with the complainant from the committee members. • Monitors emerging complaint trends and circulate the information as needed. • Serves as a resource in developing or improving complaint related processes. • Works with the University Policy Review Committee to ensure proper reporting of the complaints and their follow-up procedures. • Makes recommendations to senior management as to any resources or actions required for Institute compliance.
15.	**Central Mentoring-Cum-Counselling Committee at College/Departments under VTU**	**1. Dr.Ranganath R, MED, Chairman** 2. Dr. B. N Shobha, ECE, 3. Prof.Satheesh Chandra Reddy, ISE 4. Prof.Deeepa M S, AED 5. Mr. Chandan T, PED 6. Mr. Lohith G.N, Librarian **7.** Prof.Sridha J, MED	• To support the students in moulding their character with self-confidence. • To de-stress the students by listening their problems and suggest solutions. • To conduct periodical meetings to address issues related to student academics. • To counsel and mentor, the specific case of students for academic improvement, career advancement and overall development. • To review the counselling process conducted by faculty.

16.	**Internal Committee for the Students with disabilities in Universities/College**	1. **Dr. Ravi Kumar M, ASE, Chairman** 2. Dr.Manjunathkumar H B, CSE 3. Dr. S. Bhargavi 4. Sri. Venkatesh A, Parent 5. Sri. Nataraj. S , Parent 6. Ms. Spoorthi, 3rd year student, MED 7. Mr. Sudeep, 4th year student, ECE	• To take care of day to day needs of differently able persons as well as for implementation of the schemes existing and to be devised in future.
17.	**Accreditation (NBA/NAAC) Committee**	1. **Dr.Ranganath R, MED, College level NBA Coordinator** 2. Dr. Ravi Kumar M, ASE, College level NAAC Coordinator 3. Department level NBA Coordinators 4. Department level NAAC Coordinators	• To apply for NAAC/NBA certification. • To conduct periodical review meetings to monitor the progress of NAAC/NBA certification work. • To attend the seminars/conferences related to NAAC/NBA certification. • To organize training programmes for staff members by external resource persons to create awareness about NAAC/NBA certification. • Periodically reviewing the updation of NBA/NAAC related activities in the college.
18.	**College Website and Internet Maintenance Committee**	1. **Prof.AravindaThejas Chandra, ISE, Chairman** 2. Prof.Nagesh R, ISE, Coordinator 3. Mr. Somashekar, System administrator 4. Mr. Syed Imdad, System administrator	• To maintain and update the contents in the college website periodically. • To promote news, events related to college in the website regularly.
19.	**Central Computing Facility and Computer Maintenance Committee**	1. **Prof. Abdul Khadar, ISE, Coordinator** 2. Mr. Somashekar, System administrator 3. Mr. Syed Imdad, System administrator	• To provide central computing facility for the first-year students • To maintain all the computers, LCD projectors, printers in the college
20.	**University Examination Committee**	1. **Dr.Suresha Gowda M V, ASE, Chairman** 2. Mr. Krishnappa, Exam Section 3. Chief Time-table Coordinator (CTTC)	• To conduct and monitor the University Examinations as per the time table systematically with proper arrangements
21.	**Internal Examination Committee**	1. **All the Head of Departments** 2. **All Departments Test Coordinator**	• To conduct and monitor the three periodical tests as per the schedule systematically with proper arrangements
22.	**Signboard In charge/ Maintenance Committee**	1. **Dr. G Narayan, Chairman** 2. Prof.Manjunath K A, CED 3. Mr. Somashekar, System administrator 4. Mr. Syed Imdad, System administrator	• To install signboards in the college as and when required • To monitor and maintain the Power supply, Generators, UPSs, A/Cs available in the college and hostels

23.	**Publicity and College News Promotion Committee**	1. **Prof. Narendra Babu C, CSE** 2. Dr. K M Rajashekar , Physics 3. Dr. Suma S, MBA	• To send advertisements, news items to the newspaper about the college or events organized in the college. • To bring press reporters to the college functions through invitations or by phone. • To make promotional activities about the college in the newspaper and website.
24.	**Purchase Committee**	1. **Secretary, Sri AdichunchanagiriShakha Math, Chickballapur branch** 2. Dr. N Shivarama Reddy, CAO 3. Dr. G T Raju, Principal 4. Sri. J Suresha, Registrar 5. All the Head of Departments	• To make arrangements for purchase of the equipments/items/devices required by any department in the college as per the guidelines. • After receiving the item /device/equipment in good quality, make arrangements for payment. • To make arrangements for servicing/repairing of faulty items/devices/equipments.
25.	**Central Time Table Committee**	1. **Dr.Bharathi M, CSE, Chairman** 2. Department level Time Table coordinators	• To coordinate the time table preparation for first year classes at college level in consultation with HODs in every semester. • To prepare master time table of the college during every semester
26.	**Estate Maintenance Committee**	1. **Dr. G Narayan, CED** 2. Mr. Rakesh M R, CED 3. Mr. Srinivas, CED	• To do works related to campus cleaning, gardening and do the maintenance work (including carpentry and plumbing works) of all buildings in the college and hostel premises.
27.	**Security Committee**	1. **Sri J Suresha, Registrar** 2. Chief Warden 3. Residential Warden 4. Supervisors	• To maintain duty chart of securities in the Academic Blocks, Boys Hostel, Girls Hostel and in College Main Gate
28.	**Professional Societies Activities: ISTE, CSI, IEEE/IETE Committee**	1. **Dr.Manjunath Kumar B H, CSE, Chairman** 2. Dr. Chandra Mohan H K, MED 3. Prof.Ravikiran, ECE	• To promote ISTE/CSI/IEEE/IETE memberships among students in the college. • To conduct mini project competition for all second/third year students during even semester in every year
29.	**AICTE – Approval and VTU – Affiliation Process Committee**	1. **Prof. Nagaraj G, ISE, Chairman** 2. Mr. Surendranatha Reddy B, CSE	• To do works related to AICTE Approval and VTU Affiliation process
30.	**Research Council**	1. **Dr. T Munikenche Gowda T, Chairman** 2. Dr.Nagendra Kumar, ECE 3. Dr. Vijay G R, ISE 4. Dr.Thyagaraj N R, MED 5. Dr. Murthy SVN, CSE 6. Dr.Bino Prince Raja D, AE 7. Prof. Shashi Kumar A, CED	• To review the Research and Development activities of the college each year and make suggestions for further improvements

31.	**Academic Calendar Committee**	1. **Dr.Ranganath R, MED, Chairman** 2. All the Head of Departments	• To prepare and publish the academic calendar at the beginning of every semester.
32.	**College Magazine Committee**	1. **Dr. B N Shobha, ECE, Chairman** 2. Department level Coordinators	• To prepare and publish College Annual Magazine at the end of every academic year.
33.	**NSS/NCC Committee**	1. **Prof, Shashi Kumar N V, CED** 2. Prof.Umesh A Chougala, MED 3. Department level Coordinators (NSS)	• To conduct NSS related activities in the college. • To conduct NCC related activities in the college.
34.	**Institute Innovation Council, IPR and Entrepreneur Development Cell**	1. **Dr.S Bhaskar, ECE, Chairman** 2. Dr.Bino Prince Raja, AE 3. Prof. Pradeep kumar, ECE 4. Prof. Narendra Babu C, CSE 5. Department level Coordinators	• To promote Innovation culture at Institute level • To assist in IPR related services • To promote and conduct EDC related activities in the college • To support and sustain Start-ups at Institute Level
35.	**Cultural Activities Committee**	1. **Dr.Nagendra Kumar, ECE, Chairman** 2. Department level Coordinators	• To conduct cultural activities in the college during College Day and during other events. • To accompany with students for cultural events to be organized in other colleges/Universities
36.	**Sports Committee**	1. **Mr. Chandan T, PED** 2. Department level Coordinators	• To promote and develop sports activities in the college among students and staff members. • To organize intra-college and inter-college sports events in the college. • To accompany with students for sports events to be organized in other colleges
37.	**Planning Committee**	1. **Dr.Madhusudhana S V, ASE, Chairman** 2. Prof. Nagaraj G, ISE 3. Prof. Y R Manjunath, ECE 4. Prof.Vikas Reddy S, CSE 5. Prof.Chandrakala, CED 6. Prof.Deepa M S, AE 7. Dr.Thyagaraj N R, MED	• To make a planning of academic/co-curricular/extra-curricular activities for the forthcoming semester/academic year. As well, to review the activities of the previous semester/year and make recommendations to the Principal/CAO/Management for further improvement. • To overview the financial viability of the college in each financial year and based on the report of the auditor it will make suggestions /recommendations to the Principal/CAO/Management about further facilities/amenities/laboratories to be included in the forthcoming semester/year.
38.	**Admission Committee**	1. **Sri J Suresha, Registrar, Chairman** 2. Prof. Narendra Babu C, CSE 3. Prof. Manjunath B C, Phy 4. All the Head of Departments	• To promote admission related activities throughout the year • Design, Plan and implement college Brand Building Activities • Present ideas, mechanisms, tools and techniques to improve admissions

39.	**SEED**	1. **Prof.Vikas Reddy S, CSE, Chairman** 2. Dr. Madhusudhana S V, ASE 3. Prof. Rohit L G, AED 4. Prof. Harish S, MED 5. Prof. Y R Manjunath, ECE 6. Prof. Ravindra M V, CED 7. Prof. Abdul Khadar A, ISE 8. Dr.Rajskhekar K M, Physics 9. Prof. S M Padmavathi, MBA	• To mentor students to accomplish their ambition of being results oriented. • To instil in students the discipline of systems thinking to facilitate into viewing problems holistically. • To educate students on the basics of life hacking on how to excel in social and personal life. • To promote to peer learning

10.1.4. Delegation of Financial Powers (10)

The Financial decisions for carrying out administrative, curricular, co-curricular, extracurricular and infrastructure development related activities are delegated at different levels. This is illustrated in the following table 10.1.4.1

Table 10.1.4.1: Delegation of Financial Power

Sl. No.	Designation	Financial Quantum Activities
1	President	• Major allocation of funds for infrastructural development and any other activities which involves funds greater than 10 lakhs
2	Governing Council	• Purchases of Laboratory equipment and general accessories required for Institutional activities
3	Principal	• Salary disbursement, VTU fees payment, Invoice settlement of recurring and non-recurring expenditures • Expenditures incurred for carrying out curricular, co-curricular and extracurricular activities in various departments • Maintenance and settlement of expenditures related to Professional societies • R&D and Incubation related expenditures

Delegation of financial power for day-to-day activities of the Institution.

Head of the departments have been empowered with financial powers up to the maximum of Rs.5000 at a time. They can draw advance to meet the department expenditure for

any department related activities. They are free to draw this advance any number of times in a month. Any staff member can initiate departmental activities and seek financial assistance with the approval from Principal. The following table indicates the imprest amount that the members can have to meet contingency expenses.

Sl. No.	Designation	Imprest Amount (in Rs.)
1	Principal	50,000/-
2	Head of Department	5,000/-
3	Librarian	5,000/-
4	Registrar	5,000/-
5	Hostel Wardens	10,000/-
6	Transportation In-charge	10,000/-
7	Placement & Training Officer	5,000/-

10.1.5. Transparency and availability of correct / unambiguous information in public domain (5)

All the information about the Institute, Infrastructure, Staff, equipment details, students and facilities are being put up on the website in "Mandatory disclosure". The Program specific information is made available to all the aspirants through the website.

10.2. Budget Allocation, Utilization, and Public Accounting at Institute level (30)

S J C Institute of Technology is an Engineering Institution under the private unaided self-financing category. The revenue generation is through the fee received from the students.

The Budget proposal for the academic year is prepared by the individual departments as per the guidelines by Sri Adichunchanagiri Shikshana Trust and Principal office. The collective budget proposals are scrutinized by the budget committee at the college level and further taken to governing council for approval and sanction. Once it is sanctioned, the Principal and AO will issue the budget order. The budgetary details of the institution are presented in the following Tables B.10.2a to B.10.2e.

CFY-2020-2021

Table B.10.2a Details of Total income and Expenditure (In Rupees) for the year 2020-2021

Total Income				Actual Expenditure			Total Number of Students
Fee	Govt.	Grant	Other sources	Recurring Including Salaries	Non-Recurring	Special projects / Any other, specify	Expenditure per students (2775)
18,64,29,627	83,95,808	30,59,355	3,79,63,123	18,90,43,933	65,74,509	-	70493.13

CFY-2019-2020

Table B.10.2b: Details of Total income and Expenditure (In Rupees) for the year 2019-2020

Total Income				Actual Expenditure			Total Number of Students
Fee	Govt.	Grant	Other sources	Recurring Including Salaries	Non Recurring	Special projects / Any other, specify	Expenditure per students 2694
24,54,89,243	74,45,157	39,89,845	5,62,84,704	25,29,91,658	1,75,57,428	1,96,59,246	107723.95

CFY-2018-2019

Table B.10.2c: Details of Total income and Expenditure (In Rupees) for the year 2018-2019

Total Income				Actual Expenditure			Total Number of Students
Fee	Govt.	Grant	Other sources	Recurring Including Salaries	Non Recurring	Special projects / Any other, specify	Expenditure per students 2681
22,45,45,886	72,45,755	32,26,289	4,75,70,844	28,85,34,757	1,93,16,684	1,96,59,246	110970.04

CFY-2017-2018

Table B.10.2c: Details of Total income and Expenditure (In Rupees) for the year 2017-2018

Total Income				Actual Expenditure			Total Number of Students
Fee	Govt.	Grant	Other sources	Recurring Including Salaries	Non-Recurring	Special projects / Any other, specify	Expenditure per students 2568
22,35,44,833	19,44,610	55,14,550	5,11,76,948	22,71,98,201	3,21,93,257	8,06,72,344	132423.60

Items	Budgeted CFY (2020-2021)	Actual Expenses CFY (2020-2021)	Budgeted CFY m1 (2019-2020)	Actual Expenses m1 (2019-2020)	Budgeted CFY m2 (2018-2019)	Actual Expenses CFY m2 (2018-2019)	Budgeted CFY m3(2017-2018)	Actual Expenses CFYm3 (2017-2018)
Infrastructure Built-Up	39,342,869	1,480,000	29,683,789	17,269,423	28,139,787	23,896,834	113,829,330	81,400,102
Library	709,250.00	816,713.00	1,685,000.00	1,183,296.00	2,235,000.00	1,708,633.00	1,680,000.00	1,577,061.00
Laboratory Equipment's	26,445,025	5,696,796	44,803,834	12,473,138	55,833,465	13,928,198	61,374,535	23,101,094
Laboratory Consumables	2,079,243.00	329,204.00	1,293,792.00	366,874.00	2,007,722.00	650,599.00	686,568.00	887,599.00
Teaching & Non-Teaching Staff Salary	179,626,389	119,360,733	176,774,795	152,357,687	162,724,820	146,636,876	157,481,767	133,443,733
Maintance and spares	175,000.00	45,720.00	175,000.00	306,348.00	140,000.00	212,863.00	110,000.00	213,304.00
R&D	2,365,000.00	1,089,110.00	3,437,165.00	1,081,911.00	4,655,160.00	1,241,551.00	4,999,998.00	2,697,610.00
Training and Travel	5,750,000.00	4,969,582.00	9,557,000.00	8,772,745.00	9,400,000.00	8,128,059.00	10,750,000.00	11,051,928.00
Miscellaneous Expenses for academic activities	77,472,594.00	33,778,825.00	78,930,010.00	54,812,945.00	59,944,210.00	56,676,525.00	57,991,166.00	50,120,716.00
TOTAL	**333,965,370**	**167,566,683**	**346,520,385**	**248,624,367**	**325,080,164**	**253,080,138**	**408,903,364**	**304,493,147**

Table B.10.2e: Actual expenses (In Rupees) during 2017 - 2021

10.2.1. Adequacy of budget allocation

The budget allocation and actual expenditure details for the last four assessment years are presented in the following Table B.10.2.1.

Table B.10.2.1 Adequacy of budget allocation (In Rupees)

SL. NO.	ASSESSMENT YEAR	BUDGET ALLOCATION IN RS.	ACTUAL EXPENDURE IN RS.	ADEQUATE / IN ADEQUATE
1	CFY (2020-21)	333,965,370	167,566,683	ADEQUATE
2	CFYm1(2019-20)	346,520,386	248,624,366	ADEQUATE
3	CFYm2(2018-19)	325,080,164	253,080,137	ADEQUATE
4	CFYm3(2017-18)	408,903,366	304,493,147	ADEQUATE

10.2.2. Utilization of allocated funds

The budget utilization details for the last four assessment years are presented in the following Table B.10.2.2.

Table B. 10.2.2 Allocated funds (In Rupees) during 2017- 2021

SL. NO.	ASSESSMENT YEAR	BUDGET ALLOCATION IN RS.	ACTUAL EXPENDURE IN RS.	PERCENTAGE OF UTILIZATION
1	CFY(2020-21)	333,965,370	167,566,683	50.17
2	CFYm1(2019-20)	346,520,386	248,624,366	71.75
3	CFYm2(2018-19)	325,080,164	253,080,137	77.85
4	CFYm3(2017-18)	408,903,366	304,493,147	74.47

10.2.3. Availability of the audited statements on the institute's website

The audit statements of the academic years are available in the institute website: www.sjcit.ac.in

10.3 Program Specific Budget Allocation, Utilization (30)

Aeronautical Engineering

Budget allocation and utilization details of Aeronautical Engineering Program

The recurring and non-recurring budget details, expenditure per student specific to Aeronautical engineering program are presented in the following Tables B.10.3a to 10.3e

CFY-2020-2021

Table B.10.3a: Total Budget allocation and utilization (In Rupees) 2020-2021

Total Budget		Actual Expenditure		Total Number of Students:375
Non-Recurring	Recurring	Non-Recurring	Recurring	Expenditure per Student
44,77,197.00	1,00,94,662.00	23,94,834.00	56,93,851.00	40,443.00

CFYm1-2019-2020

Table B.10.3b: Total Budget allocation and utilization (In Rupees) 2019-2020

Total Budget		Actual Expenditure		Total Number of Students: 408
Non-Recurring	Recurring	Non-Recurring	Recurring	Expenditure per Student
1,93,80,705.00	58,43,648.00	28,56,918.00	47,81,192.00	41,287.00

CFYm2-2018-2019

Table B.10.3c: Total budget allocation and utilization (In Rupees) 2018-2019

Total Budget		Actual Expenditure		Total Number of Students:485
Non-Recurring	Recurring	Non-Recurring	Recurring	Expenditure per Student
1,21,41,831.00	53,39,138.00	4,25,973.00	46,94,187.00	26,257.00

CFYm3-2017-2018

Table B.10.3d: Total budget allocation and utilization (In Rupees) 2017-2018

Total Budget		Actual Expenditure		Total Number of Students:457
Non-Recurring	Recurring	Non-Recurring	Recurring	Expenditure per Student
1,74,59,130.00	54,42,710.00	44,79,073.00	49,64,365.00	55,225.00

Items	Budgeted CFY (2020-2021)	Actual Expenses CFY (2020-2021)	Budgeted CFY m1 (2019-2020)	Actual Expenses m1 (2019-2020)	Budgeted CFY m2 (2018-2019)	Actual Expenses CFY m2 (2018-2019)	Budgeted CFY m3(2017-2018)	Actual Expenses CFYm3 (2017-2018)
Laboratory Equipments	44,05,125.00	23,16,340.00	1,77,98,300.00	27,98,746.00	1,20,00,000.00	3,39,999.00	1,31,22,600.00	14,61,573.00
Software	-	-	15,00,000.00	-	-	-	42,20,000.00	29,06,000.00
R & D	72,072.00	78,494.00	82,405.00.00	58,172.00	1,41,831.00	85,974.00	1,16,530.00	1,11,500.00
Laboratory Consumables	2,81,374.00	36,562.00	2,61,615.00	23,056.00	20,000.00	16,316.00	1,00,000.00	19,226.00
Maintenance & Spares	25,000.00	-	25,000.00	-	10,000.00	2,950.00	10,000.00	-
Training and Travel	2,88,288.00	3,33,580.00	7,7,033.00	5,59,851.00	5,09,138.00	4,76,636.00	5,32,710.00	7,46,854.00
Establishment Expenses	95,00,000.00	53,23,709.00	48,00,000.00	41,98,285.00	48,00,000.00	41,98,285.00	48,00,000.00	41,98,285.00
TOTAL	**1,45,71,859.00**	**80,88,685.00**	**2,52,24,353.00**	**76,38,110.00**	**1,74,80,969.00**	**51,20,160.00**	**2,29,01,840.00**	**94,43,438.00**

Table B.10.3e: Actual expenses during (In Rupees) 2017 – 2021

10.3.1. Adequacy of budget allocation (10)

The budget allocation and actual expenditure details for the last four assessment years are presented in the following Table B.10.3.1.

SL.NO.	ASSESSMENT YEAR	BUDGET ALLOCATION IN RS.	ACTUAL EXPENDURE IN RS.	ADEQUATE / INADEQUATE
1	CFY (2020-21)	**1,45,71,859.00**	**80,88,685.00**	ADEQUATE
2	CFYm1 (2019-20)	**2,52,24,353.00**	**76,38,110.00**	ADEQUATE
3	CFYm2 (2018-19)	**1,74,80,969.00**	**51,20,160.00**	ADEQUATE
4	CFYm3 (2017-18)	**2,29,01,840.00**	**94,43,438.00**	ADEQUATE

Table B 10.3.1: Adequacy of budget allocation (In Rupees)

10.3.2. Utilization of allocated funds (20)

The budget utilization details for the last four assessment years are presented in the following Table B.10.3.2.

SL.NO.	ASSESSMENT YEAR	BUDGET ALLOCATION IN RS.	ACTUAL EXPENDURE IN RS.	PERCENTAGE OF UTILIZATION
1	CFY (2016-17)	**1,45,71,859.00**	**80,88,685.00**	55.51
2	CFYm1 (2015-16)	**2,52,24,353.00**	**76,38,110.00**	30.28
3	CFYm2 (2014-15)	**1,74,80,969.00**	**51,20,160.00**	29.29
4	CFYm3 (2013-14)	**2,29,01,840.00**	**94,43,438.00**	41.23

Table B.10.3.2: Budget utilization (In Rupees) 2017-2021

10.4 Library and Internet (20)

The SJCIT Library is an important learning resource center with open access system encouraging the user to browse freely in the stock area. The library is housed in a spacious block. Presently library has 81440 volumes of books and periodicals/magazines. The library comprises of reference section, periodical section, stock area, digital library with internet facility. Library also has collection of newspapers, journals back volumes, competitive exam books, GATE question papers and University question papers and syllabus of all the branches. The basic

infrastructure, working duration, internet availability and membership details of central library is presented in the Table B.10.4

Table B.10.4: Details of Central Library facility

Number of Volumes	81440
Number of Titles	13599
Carpet Area of library (in m^2)	656 square meters
Reading Space (in m^2)	1884.40 square meters
Number of Seats in reading space	155 Seats
Number of Users (Issue Book) per day (2020-21)	246
Number of Users (Reading space) per day (2020-21)	76
Timings Working day	8.30 am to 8.30 pm
Timings: Weekend	8.30 am to 5.00 pm
Timings: Vacation	8.30 am to 5.00 pm
Number of Library Staff	10
Computerization for search, indexing, issue/return records	Available
Bar Coding Used	Yes
Library Services on Internet/Intranet	Yes
Availability over Internet/Intranet	Yes
Availability of exclusive space/room	Yes
Number of users per day.	140
INDEST/DELNET and other similar membership	➢ DELNET ➢ VTU Consortium. ➢ Indian Institute of Science ➢ NDL ➢ CMTI

The college central library facility has obtained no deficiency report from the VTU Local Inquiry Committee (LIC) for all the assessment years. To enhance the efficiency of library operation, the centre is automated with **LIBSUIT** software to provide speed service to the library users.

10.4.1 Quality of learning resources (hard/soft) (10)

Relevance of availability learning resources including e-Resources

The Institution has taken up membership from Visvesvaraya Technological University consortium for enabling utilization of e-resources. The VTU Consortium acts as a single-window service for Technical Institutions with their diverse research and academic interests. These e-resources can be accessed through IP based in the campus through web addresses. The various e-resources that can be accessed by the faculty and student members are presented in section 9.4 (Criteria 9).

Accessibility to students

Computers and internet facility is provided in central library where students can access different types of e-journals. There is open access for books. The students can access the e-books/e-journals through Wi-Fi facility at library centre. The learning resource facility is kept open for 12 hours a day for use and will be extended on requirement.

Support to students for self-learning activities

Digital Library: The Institution has set up Digital Library with 30 computers having adequate internet connectivity. The objective of this facility is to support self-learning activities. About 6000 online video lectures are made available in the digital library for assisting self-learning.

Apart from the availability of e- resources through VTU consortium, the college central library has established NPTEL local chapter. Mr. Harshavardhan D, Asst. Professor, Computer Science and Engineering department is the single point of contact to enable student registration to NPTEL online courses. The central library provides necessary information to the students for registering to these online courses. During the year 2020-21, 502 members (both Staff and Students) have registered for the NPTEL online courses.

10.4.2 Internet (10)

The Institution has enabled adequate internet facility to support the operations. The details of internet provider and the specifications are provided in the following Table B.10.4.2.

Table B.10.4.2: Details of Internet availability

1	Name of the Internet Provider	1.INFYNIX Data Services Private Limited 2.MICRONOVA & e-Infrastructure Private Ltd.
2	Availability of Bandwidth	500 Mbps [INFYNIX Data Services Pvt Ltd] 10 Mbps [MICRONOVA & e-Infrastructure Private Limited]
3	Wi-Fi availability	Yes
4	Internet access in Labs, Classrooms, Library and offices of all Departments	Yes
5	Security arrangements	Fire walls

PART-C

DECLARATION BY THE INSTITUTION

Declaration

The head of the institution needs to make a declaration as per the format given -

- I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines in force as on date and the institutes shall fully abide by them.
- It is submitted that information provided in this Self Assessment Report is factually correct.
- I understand and agree that an appropriate disciplinary action against the institute will be initiated by the NBA, in case, any false statement/information is observed during pre-visit, visit, post-visit and subsequent to grant of accreditation.

Head of the Institute
Name : Dr. G T Raju
Designation : Principal
Signature :

Seal of The Institution :

Place : Chickballapur
Date : 13-12-2021 15:41:02

ANNEXURE

Annexure-I

(A) PROGRAMME OUTCOMES (POs)

Engineering Graduates will be able to:

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

6. **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning**: Recognize the need for, and have the preparation and ability to engage inindependent and life-long learning in the broadest context of technological change.

(B) PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Apply the fundamental knowledge of Aerodynamics, Propulsion, Structures and Flight controls to solve core contemporary problems

PSO2: Demonstrate and solve multidisciplinary problems to build risk taking abilities & decision-making capabilities in Aeronautical field