

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI-590018



Mini Project 21ASMP67

Report on

**“LONG RANGE DRONE COMMUNICATION THROUGH
MOBILE NETWORKS WITH ASSET DROP MECHANISM”**

Submitted in partial fulfillment of the Requirement for the award of

BACHELOR OF ENGINEERING

in

AEROSPACE ENGINEERING

Submitted By,

BAIBHAV KUMAR TIWARI

1SJ21AS005

DEEKSHA R

1SJ21AS008

MAITREYI R MUDRI

1SJ21AS017

PRITHVIRAJ M TALWAR

1SJ21AS033

Under the Guidance of,

DR. N MURUGAN

Assistant Professor

Department of Aerospace Engineering



DEPARTMENT OF AEROSPACE ENGINEERING
SJC INSTITUTE OF TECHNOLOGY
CHICKBALLAPUR-562101

2023-24

|| Jal Sri Gurudev ||

S J C INSTITUTE OF TECHNOLOGY

(VTU Affiliated, AICTE Approved, accredited by NAAC & NBA, Gold rated by QS I – Quage)

CHICKBALLAPUR - 562 101, KARNATAKA

DEPARTMENT OF AEROSPACE ENGINEERING



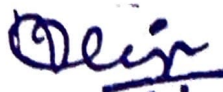
CERTIFICATE

This is to certify that the project work entitled “**Long range drone communication through mobile networks with asset drop mechanism**” carried out by **Mr. Baibhav Kumar Tiwari (1SJ21AS005)**, **Ms. Deeksha R (1SJ21AS08)**, **Ms. Maitreyi R Mudri (1SJ21AS017)** and **Mr. Prithviraj M Talwar (1SJ21AS033)** a bonafide students of **S J C Institute of Technology**, in partial fulfillment for the award of **Bachelor of Engineering in Aerospace Engineering in Visvesvaraya Technological University, Belagavi** during the academic year 2023-24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library.

The project report has been approved as it satisfies the academic requirements in respect of Mini Project work prescribed for the said Degree.


.....
Signature of Guide
(Dr. N Murugan)


.....
PROFESSOR R. S. V. N. MURUGAN
Department of Aerospace Engineering
S.J.C. Institute of Technology
CHICKBALLAPUR-562101.


.....
Principal
Signature of the Principal
S.J.C. Institute of Technology
CHICKBALLAPUR-562101.

External Viva

Name of the examiners

1. Dr. Madhusudhana S.V.
2. Dr. Ravi Kumar. M

Signature with date


7/8/24

7/8/24

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI-590018



Mini Project Report on
“Design and Development of Two-Seater Aircraft Radio Module
by Using Hemp Fiber Reinforced Composite Materials”

Submitted in partial fulfillment of the Requirement for the award of

BACHELOR OF ENGINEERING

In

AEROSPACE ENGINEERING

Submitted By,

Kushala B M

1SJ21AS014

Preetham Chandrashekhar N

1SJ21AS024

Srujan C

1SJ21AS027

Sudeep L

1SJ21AS028

Under the Guidance of,

Dr. M V SURESH GOWDA

Professor

Department of Aerospace Engineering



DEPARTMENT OF AEROSPACE ENGINEERING
SJC INSTITUTE OF TECHNOLOGY
CHICKBALLAPUR-562101

2023-24

|| Jal Sri Gurudev ||

S J C INSTITUTE OF TECHNOLOGY

(VTU Affiliated, AICTE Approved, accredited by NAAC & NBA, Gold rated by QS I – Quage)

CHICKBALLAPUR - 562 101, KARNATAKA

DEPARTMENT OF AEROSPACE ENGINEERING



CERTIFICATE

This is to certify that the project work entitled “**Design and Development of Two Seater Aircraft Radio Module by Using Hemp Fiber Reinforced Composite Materials**” carried out by Mr. **Kushala (1SJ21AS014), Preetham Chandrashekhar N (1SJ21AS024), Srujan C (1SJ21AS027), Sudeep L (1SJ21AS028)** , a bonafide student of **S J C Institute of Technology**, in partial fulfillment for the award of **Bachelor of Engineering in Aerospace Engineering** in **Visvesvaraya Technological University, Belagavi** during the academic year 2023-24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library.

The project report has been approved as it satisfies the academic requirements in respect of Mini Project work prescribed for the said Degree.

M.V. Suresh Gowda
.....
Signature of Guide
(Dr. M V Suresh Gowda)

Madhusudhana S V
.....
Signature of HOD
(Dr. Madusudhana S V)
PROFESSOR & HEAD
Department of Aerospace Engineering
S.J.C. Institute of Technology
CHICKBALLAPUR-562101.

Dr. G. T. Raju
.....
Signature of the Principal
S.J.C. Institute of Technology
CHICKBALLAPUR-562101.

Name of the examiners

Signature with date

1. Dr. Madhusudhana S.V

2. Dr. Ravikumar M

Madhusudhana S V
.....
Dr. Ravikumar M
.....
7/8/24

704
VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELAGAVI-590018



Mini Project Report on

**“Design and Comparative Analysis of C-D and Aerospike Nozzles
for Rocket Applications at Various Altitudes”**

Submitted in partial fulfillment of the Requirement for the award of

BACHELOR OF ENGINEERING

In

AEROSPACE ENGINEERING

Submitted By,

GOLLA SAI DEEP

1SJ21AS010

JASHWANTH R GOWDA

1SJ21AS011

MOKSHAGNA TEJA N H

1SJ21AS019

G R CHANDRA MOULI

1SJ20AS009

Under the Guidance of,

Dr. RAVI KUMAR M

Associate Professor

Department of Aerospace



DEPARTMENT OF AEROSPACE ENGINEERING

SJC INSTITUTE OF TECHNOLOGY

CHICKBALLAPUR-562101

2023-24

|| Jal Sri Gurudev ||

S J C INSTITUTE OF TECHNOLOGY

(VTU Affiliated, AICTE Approved, accredited by NAAC & NBA, Gold rated by QS I – Quage)

CHICKBALLAPUR - 562 101, KARNATAKA

DEPARTMENT OF AEROSPACE ENGINEERING



CERTIFICATE

This is to certify that the project work entitled “**Design and Comparative Analysis of C-D and Aerospike Nozzles for Rocket Applications at Various Altitudes**” carried out by Mr./Ms. **GOLLA SAI DEEP (1SJ21AS010)**, **JASHWANTH R GOWDA (1SJ21AS011)**, **MOKSHAGNA TEJA N H (1S21AS019)**, **G R CHANDRA MOULI (1SJ20AS009)**, a bonafide student of **S J C Institute of Technology**, in partial fulfillment for the award of **Bachelor of Engineering in Aerospace Engineering in Visvesvaraya Technological University, Belagavi** during the academic year 2023-24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library.

The project report has been approved as it satisfies the academic requirements in respect of Mini Project work prescribed for the said Degree.

Signature of Guide
(Ravi Kumar M)

Signature of HOD
PROFESSOR & HEAD
Department of Aerospace Engineering
S.J.C. Institute of Technology
CHICKBALLAPUR-562101.

External Viva

Signature of Principal
Principal
S.J.C. Institute of Technology
CHICKBALLAPUR-562101.

Name of the examiners

Signature with date

1. **Dr. Madhusudhana S.V**
2. **Dr. Ravi Kumar M**

7/8/24

7/8/24

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI-590018



Mini Project 21ASMP67

Report on

“SIMULATION OF IDENTIFICATION OF FRIEND OR FOE”

Submitted in partial fulfillment of the Requirement for the award of

BACHELOR OF ENGINEERING

in

AEROSPACE ENGINEERING

Submitted By,

CHANDANA KUMARI N

1SJ21AS007

MADHURA N C

1SJ21AS015

TEJASHREE S

1SJ21AS030

Under the Guidance of,

PROF NARESH D C

DR. SHWETHA V

Assistant Professor

Associate Professor

Department of ASE

Department of ECE



DEPARTMENT OF AEROSPACE ENGINEERING

SJC INSTITUTE OF TECHNOLOGY

CHICKBALLAPUR-562101

2023-24

|| Jai Sri Gurudev ||

S J C INSTITUTE OF TECHNOLOGY

(VTU Affiliated, AICTE Approved, accredited by NAAC & NBA, Gold rated by QS I - Quage)

CHICKBALLAPUR - 562 101, KARNATAKA

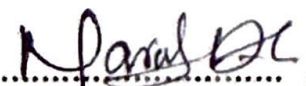
DEPARTMENT OF AEROSPACE ENGINEERING



CERTIFICATE

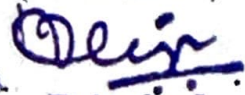
This is to certify that the project work entitled "**Simulation of Identification of Friend or Foe using MATLAB**" carried out by Ms. Chandana Kumari N (1SJ21AS007), Ms. Madhura N C (1SJ21AS015) and Ms. Tejashree S (1SJ21AS030) a bonafide students of **S J C Institute of Technology**, in partial fulfillment for the award of **Bachelor of Engineering in Aerospace Engineering** in Visvesvaraya Technological University, Belagavi during the academic year 2023-24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library.

The project report has been approved as it satisfies the academic requirements in respect of Mini Project work prescribed for the said Degree.


.....
Signature of Guide 06/08/24
(Prof. Naresh D C)


.....
Signature of Guide
(Dr. Shwetha V)


.....
Signature of HOD
(Dr. Madusudhana S V)


Principal
S.J.C. Institute of Technology
CHICKBALLAPUR-562101, KARNATAKA

External Viva

Name of the examiners

1. Dr. Madhusudhana S V
2. Dr. Ravikumar M

Signature with date


7/8/24

7/8/24

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI-590018**



Mini Project 21ASMP67

Report on

“DESIGN AND ANALYSIS OF GAS TURBINE BLADE”

Submitted in partial fulfillment of the Requirement for the award of

BACHELOR OF ENGINEERING

in

AEROSPACE ENGINEERING

Submitted By,

AGNIK DEBNATH

1SJ21AS002

ANJANA

1SJ21AS003

ANUSHKA N

1SJ21AS004

**Under the Guidance of,
Dr. ELAVARASAN E
Assistant Professor**

**Department of Aerospace Engineering
S J C Institute of Technology**



**DEPARTMENT OF AEROSPACE ENGINEERING
S J C INSTITUTE OF TECHNOLOGY CHICKBALLAPUR-
562101 2023-24**

|| Jai Sri Gurudev ||

S J C INSTITUTE OF TECHNOLOGY

(VTU Affiliated, AICTE Approved, accredited by NAAC & NBA, Gold rated by QS I - Quage)

CHICKBALLAPUR - 562 101, KARNATAKA

DEPARTMENT OF AEROSPACE ENGINEERING

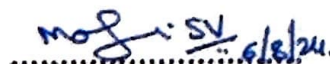


CERTIFICATE

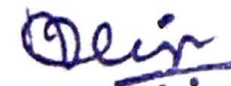
This is to certify that the project work entitled "**DESIGN AND ANALYSIS OF GAS TURBINE BLADE**" carried out by **AGNIK DEBNATH (1SJ21AS002)**, **ANJANA (1SJ21AS003)**, **ANUSHKA N (1SJ21AS004)** a bonafide students of **S J C Institute of Technology**, in partial fulfillment for the award of **Bachelor of Engineering in Aerospace Engineering** in Visvesvaraya Technological University, Belagavi during the academic year 2023-24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library.

The project report has been approved as it satisfies the academic requirements in respect of Mini Project work prescribed for the said Degree.


Signature of Guide
(Dr. Elavarasan E)


Signature of HOD
(Dr. Madhusudhana S V)

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


Principal
S.J.C. Institute of Technology
CHICKBALLAPUR - 562101.
Signature of the Principal
(Dr. G T Raju)

Name of the examiners

1. Dr. Madhusudhana S V
2. Dr. Ravi Kumar M

Signature with date


7/8/24

7/8/24

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI-590018



Mini Project Report on
“NUMERICAL INVESTIGATION OF AERODYNAMIC
CHARACTERISTICS OF NACA 2412 AEROFOIL USING
ANSYS”

Submitted in partial fulfillment of the Requirement for the award of

BACHELOR OF ENGINEERING

In

AEROSPACE ENGINEERING

Submitted By,

PAVITHRA KOTARI K P

1SJ21AS021

PRAKASH BASAVARAJ

1SJ21AS022

SWATHI M

1SJ21AS029

Under the Guidance of,

Dr . ELAVARASAN E

ASSISTANT PROFESSOR
AEROSPACE ENGINEERING



DEPARTMENT OF AEROSPACE ENGINEERING
SJC INSTITUTE OF TECHNOLOGY
CHICKBALLAPUR-562101 2023-24

॥ Jai Sri Gurudev ॥

S J C INSTITUTE OF TECHNOLOGY

(VTU Affiliated, AICTE Approved, accredited by NAAC & NBA, Gold rated by QS I – Quage)

CHICKBALLAPUR - 562 101, KARNATAKA

DEPARTMENT OF AEROSPACE ENGINEERING



CERTIFICATE

This is to certify that the project work entitled “**NUMERICAL INVESTIGATION OF AERODYNAMIC CHARACTERISTICS OF NACA 2412 AEROFOIL USING ANSYS**” carried out by Ms. Pavithra Kotari K P (1SJ21AS021), Mr. Prakash Basavaraj (1SJ21AS022) & Ms. Swathi M (1SJ21AS029) are bonafide students of S J C Institute of Technology, in partial fulfillment for the award of **Bachelor of Engineering in Aerospace Engineering** in Visvesvaraya Technological University, Belagavi during the academic year 2023-24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library.

The project report has been approved as it satisfies the academic requirements in respect of Mini Project work prescribed for the said Degree.

.....
Signature of Guide
(Dr. Elavarasan E)

.....
Signature of HOD
(Dr. Madusudhana S V)

.....
Principal
S.J.C. Institute of Technology
CHICKBALLAPUR-562101.
Signature of Principal
(Dr. G T Raju)

External Viva

Name of the examiners

1. Dr. Madhusudhana. S V
2. Dr. Ravi Kumar. M

Signature with date

.....
7/8/24

07

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI-590018**



**Mini Project Report on
“STRUCTURAL HEALTH MONITORING OF AEROSPACE
STRUCTURES”**

Submitted in partial fulfillment of the Requirement for the award of

BACHELOR OF ENGINEERING

In

AEROSPACE ENGINEERING

Submitted By,

Abhishek Benahal	1SJ21AS001
Chandan M	1SJ21AS006
Kishor M	1SJ21AS013
Madhusudan Reddy K S	1SJ21AS016

Under the Guidance of,

Dr. N Murugan

Asst professor

Department Of Aerospace Engineering



**DEPARTMENT OF AEROSPACE ENGINEERING
SJC INSTITUTE OF TECHNOLOGY
CHICKBALLAPUR-562101
2023-24**

॥ Jai Sri Gurudev ॥

S J C INSTITUTE OF TECHNOLOGY

(VTU Affiliated, AICTE Approved, accredited by NAAC & NBA, Gold rated by QS I - Quage)

CHICKBALLAPUR - 562 101, KARNATAKA

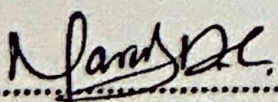
DEPARTMENT OF AEROSPACE ENGINEERING

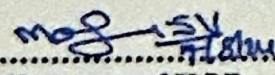


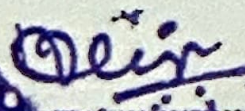
CERTIFICATE

This is to certify that the project work entitled "**STRUCTURAL HEALTH MONITERING OF AEROSPACE STRUCTUES**" carried out by Mr.Abhishek Benahal (1SJ21AS001), Mr.Chandan M (1SJ21AS006), Mr.Kishor M (1SJ21AS013), Mr.Madhusudan Reddy K S (1SJ21AS016), a bonafide students of S J C Institute of Technology, in partial fulfillment for the award of **Bachelor of Engineering in Aerospace Engineering** in Visvesvaraya Technological University, Belagavi during the academic year 2023-24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library.

The project report has been approved as it satisfies the academic requirements in respect of Mini Project work prescribed for the said Degree.


Signature of Guide
(Dr. N Murugan)

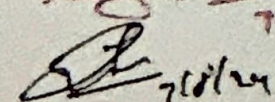

Signature of HOD
(Dr. Madhusudhana S V)
PROFESSOR & HEAD
Department of Aerospace Engineering
S.J.C. Institute of Technology
CHICKBALLAPUR-562101.


Signature of the Principal
S.J.C. Institute of Technology
CHICKBALLAPUR-562101.

Name of the examiners

1. Dr. madhusudhana. sv
2. Dr. Rev; Kumar. M

Signature with date


7/8/24

7/8/24

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI-590018



Mini Project 21ASMP67

Report on

**“FABRICATION OF MINIATURE WIND TUNNEL FOR
SMOKE FLOW VISUALIZATION STUDIES (RE<500)”**

Submitted in partial fulfillment of the Requirement for the award of

BACHELOR OF ENGINEERING

In

AEROSPACE ENGINEERING

Submitted By,

KAVYA T

1SJ21AS012

SURYANARAYANA MC

1SJ22AS400

Under the Guidance of,

PROF.NARESH DC

Assistant Professor

Department of Aerospace Engineering



DEPARTMENT OF AEROSPACE ENGINEERING

SJC INSTITUTE OF TECHNOLOGY

CHICKBALLAPUR-562101

2023-24

|| Jai Sri Gurudev ||

S J C INSTITUTE OF TECHNOLOGY

(VTU Affiliated, AICTE Approved, accredited by NAAC & NBA, Gold rated by QS I – Quage)

CHICKBALLAPUR - 562 101, KARNATAKA

DEPARTMENT OF AEROSPACE ENGINEERING



CERTIFICATE

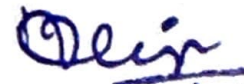
This is to certify that the project work entitled “**Fabrication of miniature Wind Tunnel for Smoke Flow Visualization Studies ($Re < 500$)**” carried out by **Ms. KAVYA T (1SJ21AS012)**, **Mr. SURYA NARAYANA MC (1SJ22AS400)** a bonafide student of S J C Institute of Technology, in partial fulfillment for the award of **Bachelor of Engineering in Aerospace Engineering** in Visvesvaraya Technological University, Belagavi during the academic year 2023-24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of Mini Project work prescribed for the said Degree.


Signature of Guide
(Naresh DC)

06/08/24


Signature of HOD
(Dr. Madhusudhana S V)

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



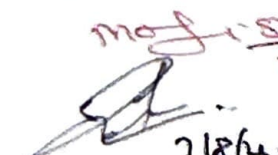
Principal

S.J.C. Institute of Technology
CHICKBALLAPUR-562101
Signature of the Principal
(Dr. G T Raju)

Name of the examiners

1. Dr. Madhusudhana S V
2. Dr. Ravikumar. M

Signature with date


7/8/24

7/8/24

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI-590018**



Mini Project Report on
**“A STUDY OF STRUCTURAL ANALYSIS OF
AERODYNAMIC WING BY USING COMPOSITE
MATERIALS”**

Submitted in partial fulfillment of the Requirement for the award of
BACHELOR OF ENGINEERING
In
AEROSPACE ENGINEERING
Submitted By,

MANOJ V	1SJ21AS018
NITHIN M K	1SJ21AS020
SHAKTHI KUMAR	1SJ21AS025

Under the Guidance of,
Prof. Dr Ravi Kumar M
Associate Professor
Department of Aerospace Engineering



DEPARTMENT OF AEROSPACE ENGINEERING
SJC INSTITUTE OF TECHNOLOGY
CHICKBALLAPUR-562101
2023-24

|| Jal Sri Gurudev ||

S J C INSTITUTE OF TECHNOLOGY

(VTU Affiliated, AICTE Approved, accredited by NAAC & NBA, Gold rated by QS I - Quage)

CHICKBALLAPUR - 562 101, KARNATAKA

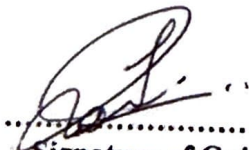
DEPARTMENT OF AEROSPACE ENGINEERING



CERTIFICATE

This is to certify that the project work entitled "**A STUDY OF STRUCTURAL ANALYSIS OF AERODYNAMIC WING BY USING COMPOSITE MATERIALS**" carried out by Mr./Ms. **Manoj v (1SJ21AS018)**, **Nithin mk (1SJ21AS020)**, **Shakthikumar (1SJ21AS025)**, a bonafide student of **S J C Institute of Technology**, in partial fulfillment for the award of **Bachelor of Engineering in Aerospace Engineering** in **Visvesvaraya Technological University, Belagavi** during the academic year 2023-24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library.

The project report has been approved as it satisfies the academic requirements in respect of Mini Project work prescribed for the said Degree.


.....
Signature of Guide
(Dr. Ravikumar M)

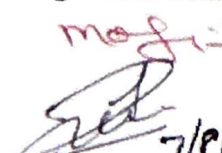

.....
Signature of HOD
PROFESSOR & HEAD
Department of Aerospace Engineering
S.J.C. Institute of Technology
CHICKBALLAPUR-562101.
External Viva


.....
Principal
S.J.C. Institute of Technology
CHICKBALLAPUR-562101.

Name of the examiners

1. Dr. Madhu Sudhana. SV
2. Dr. Ravikumar. M

Signature with date


7/8/24

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELAGAVI-590018**



Mini Project 21ASMP67

Report on

**“VIBRATION ISOLATION FOR SENSITIVE PAYLOADS OF
SPACE CRAFT USING STEWART PLATFORM”**

Submitted in partial fulfillment of the Requirement for the award of

BACHELOR OF ENGINEERING

in

AEROSPACE ENGINEERING

Submitted By,

SHASHI KUMAR G A

1SJ21AS026

VISHAL C

1SJ22AS401

VISHANTH K DHANSHEETY

1SJ21AS032

Under the Guidance of,

Dr. Madhusudhan S.V

Associate Prof & Head

Department of Aerospace Engineering



**DEPARTMENT OF AEROSPACE ENGINEERING
SJC INSTITUTE OF TECHNOLOGY
CHICKBALLAPUR-562101**

2023-24

|| Jai Sri Gurudev ||

S J C INSTITUTE OF TECHNOLOGY

(VTU Affiliated, AICTE Approved, accredited by NAAC & NBA, Gold rated by QS I – Quage)

CHICKBALLAPUR - 562 101, KARNATAKA

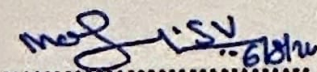
DEPARTMENT OF AEROSPACE ENGINEERING



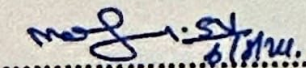
CERTIFICATE

This is to certify that the project work entitled “**Vibration isolation for sensitive payloads of space craft’s using stewart platform**” carried out by Shashi Kumar G A (1SJ21AS026) Vishal C (1SJ22AS401) Vishanth k dhansheety (1SJ21AS032) a bonafide students of S J C Institute of Technology, in partial fulfillment for the award of **Bachelor of Engineering in Aerospace Engineering** in Visvesvaraya Technological University, Belagavi during the academic year 2023-24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library.

The project report has been approved as it satisfies the academic requirements in respect of Mini Project work prescribed for the said Degree.

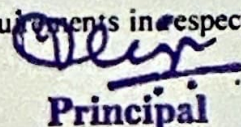


Signature of Guide
(Dr. Madusudhana S V)



Signature of HOD
(Dr. Madusudhana S V)

PROFESSOR & HEAD
Department of Aerospace Engineering
S.J.C. Institute of Technology
CHICKBALLAPUR-562101
External Viva


Principal

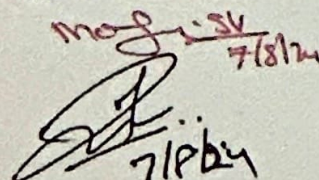
S.J.C. Institute of Technology
CHICKBALLAPUR-562101.

Signature of the Principal
(Dr. G T Raju)

Name of the examiners

1. Dr. Madhusudhana. S V
2. Dr. Ravikumar. M

Signature with date


7/8/24