



Criterion 1: Curricular Aspects

1.3 Curriculum Enrichment

1.3.4.1: Number of students undertaking field projects / internships / student projects

Programme Name: B.E Mechanical Engineering.

Sl.No.	Description	Page Number
1	Internships	1-184
2	Field Projects / Student Projects	185-269
3	Minor Projects	270-324
4	Industrial Visit	325-362





Criterion 1: Curricular Aspects

1.3 Curriculum Enrichment

1.3.4.1: Number of students undertaking field projects / internships / student projects

Programme Name: B.E Mechanical Engineering.

Internships Proof

4048

Cell: 9487607164

VINU TINKER WORKS PERIYAPALLY, NEYYOOR P.O., -629 802 Kanyakumari Dist.

Prop; T. Vinu

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. MANGUDI K (Reg. No.20BME4048) doing Mechanical Engineering in M Kumarasamy College of Engineering, Karur, has undergone In Plant Training in our Maintenance Department from 07.01.2023 to 25.01.2023. His conduct was found to be good during the training period.

We wish him all success in his career.

PRINCIPAL Kumarasamy College of Engineering "halavapalavam Karu~639119

For VINU TIMER WORKS



Froprietor

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4048 GSTIN: 33CYWPM4540B



SRI KUMARAN ENGINEERING

SF. No. 212/1, Chinthamani Nagar, Near Surya Nagar East Thottam, Ondipudur, Coimbatore - 641 016. Email : srikumaranengineering.covai@gmail.com Ph: 95784 62202, 93443 55261

Date : 18 | 11 | 2092

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr.MANGUDI K (Reg. No.20BME4048) doing Mechanical Engineering in M Kumarasamy College of Engineering, Karur, has undergone In Plant Training in our Production Department from 07/11/2022 to 18.11.2022. His conduct was found to be good during the training period.

We wish him all success in his career.

For SRI KUMARAN ENGINEERING all ge

Proprietor

TESLED PRINCIPAJ. M Rumarasamy College of Engineering

"halavapalavam Karu~639119

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GSTIN: 33CYWPM4540B1ZE

SRI KUMARAN ENGINEERING

SF. No. 212/1, Chinthamani Nagar, Near Surya Nagar East Thottam, Ondipudur, Coimbatore - 641 016. Email : srikumaranengineering.covai@gmail.com Ph : 95784 62202, 93443 55261

Date : 18/11/2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr.MANOJ S T (Reg. No.20BME4049) doing Mechanical Engineering in M Kumarasamy College of Engineering, Karur, has undergone In Plant Training in our Production Department from 07/11/2022 to 18.11.2022. His conduct was found to be good during the training period.

We wish him all success in his career.

SKE

For SRI KUMARAN ENGINEERING

S. Massy Proprietor

RINCIPAL

M.Sumarasamy College of Engineering Thalavapalavam Karu~639151



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SD PRO SOLUTIONS

CERTIFICATE OF COMPLETION

This certificate is presented to

Mr./Ms. MATHAVAN N (20BME 4050)

Has Successfully Completed <u>IENTERNSHIP</u> Training Program

in "_____MANUFACTURING

Birector

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During 07.01.2023 To 25.01.2023

Congratulations on a job well done!



Poormachauban .s Technical Head

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C.No: JENME 104

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Al p M.Sumarasamy "halavapala	SD PRO SOLUTIONS C.No: JANMEIOL	
PRINCIPAL, T PRINCIPAL, T Imarasamy College of Engineerin halavapalavam Karur-639111	CERTIFICATE OF COMPLETION This certificate is presented to	
8	Mr./Ms. <u>Mohana prasaad at (20 BME4</u> 051) Has Successfully Completed <u>INTERNSHIP</u> Training Program in " <u>MANVEACTURING</u> " During <u>07.01.2023</u> TO <u>25.01.2023</u>	
R	S.S.LL. Director Congratulations on a job well done! Director Director	
Ser.	Director Technical Head	4051

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CERTIFICATE OF COMPLETION

This certificate is presented to

Mr./Ms.<u>SANKARANARAYANAN VR (20BME 4072)</u>

Has Successfully Completed <u>INTERNSHIP</u> Training Program

in "_____MANVEACTURING

During 07.01.2023 TO 25.01.2023

Hulfiafasamy College of

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Director

RINCIPA

Congratulations on a job well done!



Poorinactionchare - S Technical Head

4072

C.No: JANME103



CERTIFICATE OF COMPLETION

This certificate is presented to

Mr./Ms. SIBI MI CAOBME 4074)

Has Successfully Completed <u>INTERNSHIP</u> Training Program

in "_____MANVEACTURING

During 01.01.2023 TO 25.01.2023

Congratulations on a job well done!



Technical Head

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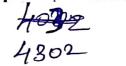
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Director



GSTIN: 33AAHFG7775M1ZT





546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Date: 01.02.2023

CERTIFICATE

This is to certify that Abisheik.R 3rd year B.E.Mechanical Engineering (Roll No.20BME4302) Student of M.Kumarasamy College of engineering, Karur. Has attended in plant training for the period from 09.01.2023 to 29.01.2023.

For Gemini Coach Builders

Manager.

ATTESTED PRINCIPAL

M Kumarasamy College of Engineerina "halavapalavam Karu -639113



GSTIN: 33AAHFG7775M1ZT



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4301

546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph: 04324 - 290756, Cell: 9444013119, 9790647777, Email: geminicoach@gmail.com

Date:01.02.2023

CERTIFICATE

This is to certify that Abilash.V 3rd year B.E.Mechanical Engineering (Roll No.20BME4301) Student of M.Kumarasamy College of engineering, Karur . Has attended in plant training for the period from 09.01.2023 to 29.01.2023.

For Gemini Coach Builders

(Manager.



TESTED

PRINCIPAL. M. Kumarasamy College of Engineering "hulavapalavam Karu~639113





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N. کنن-Director

Китагазату College of Engineerina rhalavapalavam Кагн .6301 i л

PRINCIPAS

C.No: JANMEIDI

CERTIFICATE OF COMPLETION

This certificate is presented to

Mr./Ms. ARULMOZHIVARMAN S (20BME4304)

Has Successfully Completed <u>TNTERNSHIP</u> Training Program in "_____MANUFACTURING

During 09.01.2023 To 31.01.0003

Congratulations on a job well done!



Popennal Manabian - S Technical Head





TVS MOBILITY

4305

M.Kumarasamy Collage of Engineering Thalavapalayam Karur-639113

18/11/2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr.S.Bharanidharan (Regd No:20BME4305), B.E student of Mechanical Engineering, M.Kumarasamy Collage of Engineering, Karur has undergone an internship Training in our esteemed Organization from 07.11.2022 to 18.11.2022.

During this period his conduct and character were found to be good. We wish him all success in his future endeavors.

For TVS MOBILITY PRIVATE LIMITED

DEPUTY OFFICER - HR & OPERATIONS

Vallipuram (Po), (VIA) NALLIPALAYAM-637 003, NAMAKKAL Taluk.

LIRZI PRINCIPA. umarasamy College of Engineerin, halavapalavam Karu~639113

TVS Mobility Private Limited Registered Office • No. 10, Jawahar Road, Chokkikulam, Madurai - 625 002 CIN U50400TN2018PTC121056



C.No: JAN MF 800

CERTIFICATE OF COMPLETION

This certificate is presented to

Mr./Ms. BHARANIDHARAN S

Has Successfully Completed <u>TNTER NSHIP</u> Training Program in "______MANUFACTURING______"

During 09.01.2023 To 31.01.2023

NCIPA

Director

Congratulations on a job well done!



N.S. y Technical Head



4313

GSTIN: 33AAHFG7775M1ZT



546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Date:21.11.2022

CERTIFICATE

This is to certify that Jaikarthik.S 3rd year B.E.Mechanical Engineering (Roll No.20BME4313) Student of M.Kumarasamy College of engineering, Karur .Has attended in plant training for the period from 07.11.2022 to 19.11.2022.

For Gemini Coach Builders

Manager.

ATTESTED PRINCIPAL.

H Kumarasamy College of Engineerina Thalayagalayam Karn - 630112

4313

RAYAL ENGINEERING COMPANY

BUS BOBY BUILDERS

Luxury on wheels



23.01.2023.

CERTIFICATE

This is to certify that Jaikarthik.S 3rd year B.E.Mechanical Engineering (20BME4313) Student of M.Kumarasamy College of Engineering,Karur attended in plant training for the period from 07.01.2023 to 21.01.2023.

For Rayal Engineering Company, KARU Proprietor.

T KSTRN PRINCIPAS, Kumarasamy College of Engineerina "halavapalavam Karu 420112

S.F.No.504/B1, Covai Road, Andankovil West Post, Karur - 639 002, Tamilnadu, INDIA Cell: +91 96880 08999

E-mail: recbuses@gmail.com

www.recbuses.in

GSTIN No: 33AAIPP4499G1ZC

E.



C.No: JANMFIOZ

CERTIFICATE OF COMPLETION

This certificate is presented to

Mr./Ms. JAYAMANI N (20BME 4304)

Has Successfully Completed <u>TNTERNSHIP</u> Training Program

in "_____MANUFACTURING

During 09.01-2023 To 31.01.2023

Congratulations on a job well done!

N:کمنمری Director

RINCIPA

ESTE





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4314



The Salem Co-operative Sugar Mills Ltd.,

AN ISO 9001: 2015 QMS CERTIFIED SUGAR MILLS

MOHANUR - 637 015, Namakkal District, Tamil Nadu. 150 9001:2015 GSTIN : 33AAAAT3144R1Z8 Reg. No. 603369

Rc.No.2849/C3/Inplant/2022

Dated : 30-11-2022

CERTIFICATE

This is to certify that Mr.N.Jayamani, III Year B.E Mechanical Engineering (Reg.No:20BME4314) student of M.Kumarasamy College of Engineering, Karur-639113 has undergone Internship Training in The Salem Co-operative Sugar Mills Ltd., Mohanur - 637 015, Namakkal (Dt) during the period from 14-11-2022 to 29-11-2022

For The Salem Co-operative Sugar Mills Ltd.,

ng Director

ESTED PRINCIPAL

7

Kumarasamy College of Engineerin, Thalavapalavain Kani -639113

Phone : STD : 04286 - 255221, 255224 Mohanur.

E-mail ID : sacos07 @ yahoo.co.in

Fax: 04286 - 255264

4315

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MAARUTI COACH BUILDERS PRIVATE LIMITED

AN 180 9001 2008 COMPANY



31/01/2023

TO WHOM SO EVER IT MAY CONCERN

This is to certify that K.G.Y.JEEVANKAVIN (20BME4315), THIRD YEAR -B.E (MECH) Student from M.KUMARASAMY COLLEGE OF ENGINEERING successfully completed From 09/01/2023 to 31/01/2023 Internship programme at M/S. Maaruti Coach Builders Private Ltd., Karur. During the period of his internship programme with us he was found punctual, hardworking and inquisitive.

We wish her every success in life.

For MAARUTI COACH BUILDERS PVT LTD.,

80 ARUR DIRECTO

TESTED PRINCIPAJ.

M Rumarasamy College of Engineering "halavapalavam Kami~63911?

SF No.513,514, GOVINDAMPALAYAM, COIMBATORE ROAD, ANDANKOVIL WEST (POST), KARUR - 639 008. TAMIL NADU. Cell : 9385876153, 9385876150 E-mail : mcbcoach@gmail.com Website : www.mcbcoach.net GST No. : 33AADCM5568P1ZW



C.No: JANME799

CERTIFICATE OF COMPLETION

This certificate is presented to

Mr./Ms. KATHIRAVAN S (20BME 4319)

Has Successfully Completed <u>INTERNSHIP</u> Training Program

in "_____MANUFACTURING

arasamy College of Engineering Javabalavam Karu -6301 ja

PRINCIPA

63160

Director

During 07.01.2023 to 25.01.2023

Congratulations on a job well done!



J. Yoomullaubous Technical Head



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4321

GSTIN NO: 33ASOPK0781C1ZX



1/530, Ground Floor, Kothari Nagar MTP Road, K. Vadamadurai Post, Coimbatore - 641017

DATE: 28.01.2023

INTERNSHIP ACKNOWLEDGEMENT

We, from M/S.JAYAM ENGINEERING PRECISION CNC COMPONENTS is glad that L.KISHORE KUMAR [Roll no: 20bme4321] of M.Kumarasamy College of Engineering has completed the internship with our company from 09.01.2023 to 28.1.2023, we would like to appreciate the candidate for his involvement in the work during his internship period.

ALL THE BEST

For JAYAM ENGIN Proprietor

TESTED PRINCIPAL

M Kumarasamy College of Engineering "halpvapalavam Karu -639113

4321

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SUD

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1 1

Mfrs. : Textile & Pumps Spares, All types of Cylindrical Components and CNC Job works GSTIN: 33ADCPR2580B1ZY

DATE: 19/11/2022

INTERNSHIP ACKNOWLEDGEMENT

We, from M/S.SANTHA ENGINEERING PRODUCTS is glad that L.KISHORE KUMAR [Roll no: 20bme4321] of M.Kumarasamy College of Engineering has completed the internship with our company from 07.11.2022 to 19.11.2022, we would like to appreciate the candidate for his involvement in the work during his internship period.

ALL THE BEST

TESTED PRINCIPAS.

Truly Supports

10

M.Sumarasamy College of Engineering "halavapalavam Karu~639117

For SANTHA ENGINEERING PRODUCTS

Authorised Signatory

No.140/2, Nava India Road, Sowdeswari Nagar, Avarampalayam, Coimbatore - 641 006. Ph : 0422 2561711, Cell : 99940 16995, E-mail : santhaengineeringsales@gmail.com

TVS MOBILITY

4322

18/11/2022

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M.Kumarasamy Collage of Engineering Thalavapalayam Karur-639113

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr.S.Logesh (Regd No:20BME4322), B.E student of Mechanical Engineering, M.Kumarasamy Collage of Engineering, Karur has undergone an internship Training in our esteemed Organization from 07.11.2022 to 18.11.2022.

During this period his conduct and character were found to be good. We wish him all success in his future endeavors.

For TVS MOBILITY PRIVATE LIMITED

DEPUTY OFFICER - HR & OPERATIONS IVS MOBILITY PRIVATE LIMITED Vallipuram (Po), (VIA) NALLIPALAYAM-637 003, NAMAKKAL Taluk.

PRINCIPAL

Kumarasamy College of Engineering Phalavapalavam Karn -639113



TVS Mobility Private Limited Registered Office • No. 10, Jawahar Road, Chokkikulam, Madurai - 625 002 CIN U50400TN2018PTC121056

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323

TAMILNADU STATE TRANSPORT CORPORATION (KUM)LTD.,

KARUR REGION

Ref: TNSTC/KRR/IR/INP/713/2022

Date: 07.12.2022

CERTIFICATE

TO WHOM SO EVER IT MAY CONCERN

This is to Certify that Selvan.D.LOGITH, Department of Mechanical Engineering, M.Kumarasamy College of Engineering, KARUR has undergone Inplant Training in our Corporation from 11.11.2022 to 21.11.2022

During the above period of Inplant Training his performance and conduct were found GOOD.

> for TAMILNADU STATE TRANSPORT CORPORATION (KUM) LTD., KARUR REGION

GENERAL

PRINCIPAS. M.Rumarasamy College of Engineering "halavanalavam Karu -63911?



C.No: JANMF105

CERTIFICATE OF COMPLETION

This certificate is presented to

Mr./Ms. LOKESH R.S (20BME4324)

Has Successfully Completed <u>INTERNSHIP</u> Training Program in "_____ MANUFACTURING

During 07.01.2023 To 25.01.2023

marasamy College of Engineering halavapalayam Karu -4391j3

PRINCIPAS

ISAL

Director

Congratulations on a job well done!



43 24 Poonulloudboon S Technical Head





C.No: JANMEIDH

CERTIFICATE OF COMPLETION

This certificate is presented to

Mr./Ms. LOGHITH D (20BME4323)

Has Successfully Completed <u>TNTERNSHIP</u> Training Program

in "_____MANUFACTURINH

During 09.01.2023 To 31.01.2023

marasamy College of Engineering

INCIPAL

Congratulations on a job well done!



Director

Poounuclandoran.s Technical Head







C.No: JANME106

CERTIFICATE OF COMPLETION

This certificate is presented to

Mr./Ms. MATHISDORYAN SK (20BME4326)

in "_____MANUFACTURING During 07.01.2023 To 25.01.2023

Congratulations on a job well done!

Director

и қитатаsату College of Engineei "Mahavapalavan" Қати-634114

PRINCIPAU







C.No: JANMEIDS

CERTIFICATE OF COMPLETION

This certificate is presented to

Mr./Ms. SANTHOSH KUMPR GI (20BME 4338)

Has Successfully Completed ______ TNTERNSHIP_____ Training Program

in "_____MANUFACTURINOT_____

<u>S.</u>

During 07.01.2023 TO 25.01.2023

Congratulations on a job well done!



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INTERNSHIP ACKNOWLEDGEMENT

THIS IS TO CERTIFY THAT Mr**S K.MATHISOORYAN**(20BME4326) OF B.E. MECHANICAL ENGINEERING IN M.KUMARASAMY COLLEGE OF ENGINEERING, THALAVAPALAYAM,KARUR. HAS ATTENDENDE INTERNSHIP TRAINING FROM 7-11-2022 TO 19-11-2022 IN **BALU AUTOS** THANJAVUR.

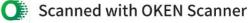
TTESTED Kumarasamy College of Engineering Thalavanalavan Karn 630113

r



BALU AUTOS

Showroom : No. 4, T.P.S Nagar, Medical College Road, Thanjavur - 613 007. Service : No.119, Abraham Pandithar Garden, Medical College Road, Thanjavur - 613 007.





The Salem Co-operative Sugar Mills Ltd.,

AN ISO 9001: 2015 QMS CERTIFIED SUGAR MILLS

MOHANUR - 637 015, Namakkal District, Tamil Nadu. GSTIN : 33AAAAT3144R1Z8



ISO 9001 : 2015 Reg. No. 663369

551114 . 33AAAA13144R128

Rc.No.2849/C3/Inplant/2022

<u>Dated : 30-11-2022</u>

CERTIFICATE

This is to certify that Mr.S.Sudharsan, III Year B.E Mechanical Engineering (Reg.No:20BME4346) student of M.Kumarasamy College of Engineering, Karur-639113 has undergone Internship Training in The Salem Co-operative Sugar Mills Ltd., Mohanur - 637 015, Namakkal (Dt) during the period from 14-11-2022 to 29-11-2022

For The Salem Co-operative Sugar Mills Ltd.,

lanaging Director

ESTEN RINCIP

Kumarasamy College of Engineering Thalavapalavain Kami -630113



Phone : STD : 04286 - 255221, 255224 Mohanur.

E-mail ID : sacos07 @ yahoo.co.in

Fax : 04286 - 255264

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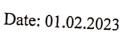
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loach Builders 546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com



<u>CERTIFICATE</u>

This is to certify that Sudharsan.S 3rd year B.E.Mechanical Engineering (Roll No.20BME4346) Student of M.Kumarasamy College of engineering, Karur. Has attended in plant training for the period from 09.01.2023 to 29.01.2023.

For Gemini Coach Builders

(Manager.



TAESTED PRINCIPAL.

M.Sumarasamy College of Engineering Thalavapalavam Karu -639117



20BME 400)





अखिल भारतीय तकनीकी शिक्षा परिषद All India Council for Technical Education





Virtual Internship **Completion** Certificate

This is to certify that

ABHINIVESH S

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

blueprism Supported By University

Ana Howes Global Head of Education Services Blue Prism

Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills

BSTED

PRINCIPAP



Certificate ID :5be538629cd9cf628ce06b4f6e35627d Student ID :STU6154a0015ae091632935937









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Virtual Internship Completion Certificate

This is to certify that

ARUNKUMAR S

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

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Ana Howes Global Head of Education Services Blue Prism

Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :4c13d4e3d7fa4cf05c6ba3b40da35159 Student ID :STU62d6cf9ee5c811658245022



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RINCIPA



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Virtual Internship Completion Certificate

This is to certify that

AVINASHRAM V

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

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Hours

Ana Howes Global Head of Education Services Blue Prism

Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

V- Avinash Ram 20BME4009 A-Section

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Nation Building Through Skills

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills

LESTED.



Certificate ID :d8041b383a78c1394be4b5b157404688 Student ID :STU623015ade86b01647318445



MecH-A





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Virtual Internship Completion Certificate

This is to certify that

BHARATHIKANNAN S

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

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Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :6bcb4515a9efac7efbc58d9806673c5f Student ID :STU6154836e4a2c81632928622



STED





EduSkills

Nation Building Through Skills

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Virtual Internship Completion Certificate

This is to certify that

DEEPANRAJ P

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

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Ana Howes Global Head of Education Services Blue Prism

Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :f8b7fa14a3e2867cbc6b40bf8cb175c2 Student ID :STU6155893b8b07b1632995643



Thatavanalavam Karn

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PRINCIPAL Kumarasamy College of Engineeriu



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20BME4016

अखिल भारतीय तकनीकी शिक्षा परिषद All India Council for Technical Education



Virtual Internship **Completion Certificate**

This is to certify that

DHARUN G K

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

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Ana Howes **Global Head of Education Services** Blue Prism

Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :44e5c5e8e21f6dc7941e95697c62f2eb Student ID :STU62301592643a71647318418



RINCIP

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Virtual Internship Completion Certificate

This is to certify that

DHARUN R

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

Supported By University

Ana Howes Global Head of Education Services Blue Prism

Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



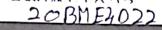
Certificate ID :39b7f7ca42c04d41edd214f73eccbccf Student ID :STU623015cc512601647318476



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अखिल भारतीय तकनीकी शिक्षा परिषद All India Council for Technical Education



Virtual Internship **Completion Certificate**

This is to certify that

GIRIPRASATH R

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

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Ana Howes Global Head of Education Services **Blue Prism**

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :491b4ca819c95a5e4eb87f02648d397a Student ID :STU623016398e07e1647318585

Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

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अखिल भारतीय तकनीकी शिक्षा परिषद् All India Council for Technical Education



Virtual Internship Completion Certificate

This is to certify that

GOKUL A

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

Supported By University

Ana Howes Global Head of Education Services Blue Prism

Shri Buddha Chandrasekhar

Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Biend

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :b9f09fb81d40bd8a9228d95a2a420113 Student ID :STU623015860a4261647318406 PRINCIPAL.

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Virtual Internship Completion Certificate

This is to certify that

GOWSICK S

20 BME 4-025

MECH -B M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

Supported By University

Ana Howes Global Head of Education Services Blue Prism

NEAT Cell, AICTE

Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO)

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :a7b226de44ef3432baacd3277357a8a3 Student ID :STU62301635658631647318581 RinciPA: M. Sumarasamy College of Engineerin "balavamalavam Karu seril X

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S. GUHANESH THIRUKKAIVEL 20BME4026, AL- Nach

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Virtual Internship **Completion Certificate**

This is to certify that

GUHANESH THIRUKKAIVEL S

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

blueprism Supported By Jniversity

Ana Howes **Global Head of Education Services** Blue Prism

Shri Buddha Chandrasekhar Chlef Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



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Certificate ID :82ff8dd54813d5782a0fbf29ccd38a71 Student ID :STU61546091a63d31632919697



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अखिल भारतीय तकनीकी शिक्षा परिषद All India Council for Technical Education

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Virtual Internship **Completion Certificate**

This is to certify that

GURUPRASAATH M

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

blueprism Supported By University

Ana Howes **Global Head of Education Services Blue Prism**

Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :82380281d60e74bac8e4909d9023917a Student ID :STU6156fee75741d1633091303



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Virtual Internship Completion Certificate

This is to certify that

HARISH BALAJI G

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

Supported By University

Ana Howes Global Head of Education Services Blue Prism

Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills

365160



Certificate ID :3f7d26c589930936c6c2d7b13ad2a5e1 Student ID :STU6155b84d126ec1633007693

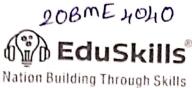


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अखिल भारतीय तकनीकी शिक्षा परिषद All India Council for Technical Educatio



Virtual Internship **Completion Certificate**

This is to certify that

KISHOR KUMAR K

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

blueprism Supported By University

Ana Howes Global Head of Education Services Blue Prism

Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

45

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :b30992cf7e8e2d6ec1506beb744778e7 Student ID :STU615485ffe29091632929279



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अखिल भारतीय तकनीकी शिक्षा परिषद All India Council for Technical Education



Virtual Internship Completion Certificate

This is to certify that

KISHORE G

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

Supported By University

Ana Howes Global Head of Education Services Blue Prism

Shri Buddha Chandrasekhar

Chief Coordinating Officer (CCO)

NEAT Cell, AICTE

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ဨ EduSkills

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :edc3137a2ea326a2bd61c09333036c62 Student ID :STU6369f5d6e5a0f1667888598



TESTED



PROFENAA TECHNOLOGIES

GSTIN: 33CNIPM5646P1ZC Reg Office: 37/1A, Near Aggarwal Eye Hospital, Opposite Indian Oil Bunk A.A.Road, Arapalayam, Madurai-625016 Tamilnadu, INDIA PH: 7010422310/9500794310 Email: profenaa.madurai@gmail.com Website: www.profenaagroups.com

Ref:EXPTR/21/22

19 Sep 2022

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the student Mr. M. Arunpraveen of Mechanical Engineering Dept. of M.Kumarasamy College Of Engineering, Karur has satisfactorily completed his internship program and worked the various machines of "LASER Cutting , CNC and Milling" during the period 01/09/22 to 17/09/22 under our guidance.

Thanking you,

For Profenaa Technologies

(p). engly: and

Mr. Karthikkaruppu M Managing Director- Profenaa Technologies

Profenaa Industrial Training Centre (PITC) Industrial Training & Placement Engineering Services

No:37/1, Near Aggarwal Eye Hospital. Opposite Indian Oil Petroi Bunk, A.A Road, Arapalayam Bus Stand, Madurai-625016 Ph: 70104 22310

phincipa:

M. Kumarasamy College of Engineern?

Profenaa Technologies: Reg Office: 37/1A, Near Aggarwal Eye Hospital, Opposite Indian Oil Petrol Bunk, A.A Road, Arapalayam, Madurai-625016 PH: 7010422310/9500794310. <u>Email: Profenaa.madurai@gmail.com</u> GSTIN: 33CNIPM5646P1ZC Web: <u>www.profenaagroups.com</u>

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JEPPIAAR CEMENTS PRIVATE LIMITED

No.1-A, Dindugal Main Road,PVTK Balaratha Complex, Dheeran Nagar Bus Stop, Tiruchirappalli, Tamil Nadu 620009

Date : 18-9-2022

INPLANT TRAINING CERTIFICATE

This is to certify that BARATHRAJAN.K (RegNo.19BME4009) from M.Kumarasamy College Of Engineering-Thalavapalayam, Karur has been successfully completed the INPLANT TRAINING in our organization for the period from 1-9-2022 to 17-9-2022.

We wish him all the best for the future endeavors.

Thanking you

Manager

Romal know P

JEPPIMAR CEMENTS Tiruchirappalli.

TTESTED

PRINCIPA: M.Kumarasamy College of Engineerina ^{Thalavabalavain} Kami 1630112]



ivva Integrated Automation & Control Solution Provider (ISO 9001 : 2015 CERTIFIED COMPANY) No. 9/82, Dr. Moorthy Nagar, Padi, Chennal- 600 050 B-mail : divya.engineers@gmail.com, sales@divysongineers.in Wabsite : www.divyaengineers.in; GST No: 33AAEFD4584G1ZJ Mobile : +91 94441 61305, +91 98843 55219, +91 72001 61305

ineers

4013,2022

TO WHOMSOEVER IT MAY CONCERN

CERTIFICATE

This is to certify that Mr. S.P.BOOPATHI(19BME4013), BE student in Mechanical

Engineering from M Kumarasamy college of engineering, Thalavapalayam, Tamil Nadu has

successfully completed the Internship at DIVYA ENGINEERS, DR.Moorthy Nagar, Padi,

Chennai, Tamil Nadu, during the period from 01.09.2022 to 17.09.2022.

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We wish him all the best in future endeavors.

For Divya Engineers

1200161 NAVA MURUGADASS General Manager +91 98844 48499

TTESTED PRINCIPA:.

M.Kumarasamy College of Engineerin. "halavapalayam Karn 63011"

Specialist in : Design, Engineering, Manufacture & Supply of PLC & SCADA, Automation, HoT, RTU, AC / DC Drive, Instrumentation, Mimic, Relay, LT MCC, Control Desk, LT PCC and Pacumatic Control Panel, Isolator Box, Junction Box & Local Control Station





Divya Engineers Total Integrated Automation & Control Solution Provider (ISO 9001 : 2015 CERTIFIED COMPANY) No. 9/82, Dr. Moorthy Nagar, Padi, Chennai- 600 050 E-mail : divya.engineers@gmail.com, sales@divyaengineers.in Website : www.divyaengineers.in; GST No: 33AAEFD4584G1ZJ Mobile : +91 94441 61305, +91 98843 55219, +91 72001 61305

1016 17.09.2022

TO WHOMSOEVER IT MAY CONCERN

CERTIFICATE

This is to certify that Mr. K.DEEPAK(19BME4016), BE student in Mechanical Engineering from M Kumarasamy college of engineering, Thalavapalayam, Tamil Nadu has successfully completed the Internship at DIVYA ENGINEERS, DR.Moorthy Nagar, Padi, Chennai, Tamil Nadu, during the period from 01.09.2022 to 17.09.2022.

We wish him all the best in future endeavors.

For Divya Engineers

NAVA MURUGADASS General Manager 491 98844 48499

ATTESIED RINCIPAS.

Maumarasamy College of Bugineering Thalavapatavam Korn 639112

Specialist in : Dosign, Engineering, Manufscture & Supply of PLC & SCADA, Automation, HoT, RTU, AC / DC Drive, Instrumentation, Mimic, Relay, LT MCC, Control Desk, LT PCC and Pneumatic Control Panel, Isolator Box, Junction Box & Local Control Station





Divya Lingtneers Total Integrated Automation & Control Solution Provider (ISO 9001 : 2015 CERTIFIED COMPANY) No. 9/82, Dr. Moorthy Nagar, Padi, Chennai- 600 050 E-mail : divya.engineers@gmail.com, sales@divyaengineers.in Website : www.divyaengineers.in; GST No: 33AAEFD4584G1ZJ Mobile : +91 94441 61305, +91 98843 55219, +91 72001 61305

4018 17.09.2022

TO WHOMSOEVER IT MAY CONCERN

CERTIFICATE

This is to certify that Mr. V.DHANARAJ(19BME4018), BE student in Mechanical

Engincering from M Kumarasamy college of engineering, Thalavapalayam, Tamil Nadu has

successfully completed the Internship at DIVYA ENGINEERS, DR. Moorthy Nagar, Padi.

Chennai, Tamil Nadu, during the period from 01.09.2022 to 17.09.2022.

We wish him all the best in future endeavors,

For Divya Engineers

NAVA MURUGADASS General Manager +91 98844 48499

ATTESIED PRINCIPA:

"halavapalayam Kant Kanta

Specialist in : Design, Engineering, Manufacture & Supply of PLC & SCADA, Automation, HoT, RTU, AC / DC Drive, Instrumentation, Mimic, Relay, LT MCC, Control Desk, LT PCC and Pneumatic Control Panel, Isolator Box, Junction Box & Local Control Station





Divya Engineers Total Integrated Automation & Control Solution Provider (ISO 9001 : 2015 CERTIFIED COMPANY) No. 9/82, Dr. Moorthy Nagar, Padi, Chennai- 600 050 E-mail : divya.engineers@gmail.com, sales@divyaengineers.in Website : www.divyaengineers.in; GST No: 33AAEFD4584G1ZJ. Mobile : +91 94441 61305, +91 98843 55219, +91 72001 61305

TO WHOMSOLVER IT MAY CONCERN

CERTIFICATE

This is to certify that Mr. V.P.DHARUNRAJ(19BME4021), BE student in Mechanical

Engineering from M Kumarasamy college of engineering, Thalavapalayam, Tamil Nadu has

successfully completed the Internship at DIVYA ENGINEERS. DR. Moorthy Nagar, Padi,

Chennai, Tamil Nadu, during the period from 01.09.2022 to 17.09.2022.

We wish him all the best in future endeavors.

For Divya Engineers

NAVA MURUGADASS General Manager +91 98844 48499

TESIED PRINCIPA:

M.Sumarasamy College of Engineering Thalavapalayam Karn 430117

Specialist is : Design, Engineering, Manufacture & Supply of PLC & SCADA, Automation, HoT, RTU, AC / DC Drive, Instrumentation, Mimic, Relay, LT MCC, Control Desk, LT PCC and Pneumatic Control Panel, Isolator Box, Junction Box & Local Control Station



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4021 17.09.2022

JEPPIAAR CEMENTS PRIVATE LIMITED

No.1-A, Dindugal Main Road, PVTK Balaratha Complex,

Dheeran Nagar Bus Stop, Tiruchirappalli, Tamil Nadu 620009

4026

Date : 18-9-2022

INPLANT TRAINING CERTIFICATE

This is to certify that GOKUL.D (RegNo.19BME4026) from M.Kumarasamy College Of Engineering-Thalavapalayam, Karur has been successfully completed the INPLANT TRAINING in our organization for the period from 1-9-2022 to 17-9-2022.

We wish him all the best for the future endeavors.

Thanking you

Manager

Komel kumar P

JEPPHAB GEMENTS Tiruchirappalli.

ATTESIED RINCIPA:

Mumarasamy College of Engineerin. "balavapalayam Karn 630113

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GSTIN : 33AAEPN3016B1ZH

KULATHUPALAYAM, PAVITHRAM PO., KARUR - 639 002.

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CERTIFICATE

SRI SAKTHI COACH

This is to certify that Mr. R. HARIHARAN, Reg No: 19BME4029 currently pursuing his B.E., Mechanical Engineering in M. KUMARASAMY COLLEGE OF ENGINEERING, Karur. has undergone Internship Training in our company during the period of 16 days from 1st September 2022 to 16th September 2022, and his Conduct and ÷. Character was good during the training period. 19 a 1

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FOR SRI SAKTHI COACH, Authorized Signatory.

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TESTED PRINCIPA. M.Rumarasamy College of Engineerina "halavapalayam Kami .630112



Divya EngineerS Total Integrated Automation & Control Solution Provider (ISO 9001 : 2015 CERTIFIED COMPANY) No. 9/82, Dr. Moorthy Nagar, Padi, Chennai- 600 050 E-mail : divya.engineers@gmail.com, sales@divyaengineers.in Website : www.divyaengineers.in; GST No: 33AAEFD4584G1ZJ Mobile : +91 94441 61305, +91 98843 55219, +91 72001 61305

TO WHOMSOEVER IT MAY CONCERN

CERTIFICATE

This is to certify that Mr. B.HARISHRAJ(19BME4030), BE student in Mechanical

Engineering from M Kumarasamy college of engineering. Thalavapalayam, Tamil Nadu has

successfully completed the Internship at DIVYA ENGINEERS, DR. Moorthy Nagar, Padi,

Chennai, Tamil Nadu, during the period from 01.09.2022 to 17.09.2022.

We wish him all the best in future endeavors.

For Divya Engineers

NAVA MURUGADASS

KSIED RINCIPAT.

M Rumarasamy College of Engineerina Shalavapalavam Karn 630114

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Specialist in : Design, Engineering, Manufacture & Supply of PLC & SCADA, Automation, 11oT, RTU, AC / DC Drive, Instrumentation, Mimic, Rolay, LT MCC, Control Desk, LT PCC and Pneumatic Control Panel, Isolator Box, Junction Box & Local Control Station





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4037

TO WHOMSOEVER IT MAY CONCERN

CERTIFICATE

This is to certify that Mr. V.JAYASURIYA(19BME4037), BE student in Mechanical

Engineering from M Kumarasamy college of engineering. Thalavapalayam, Tanul Nadu has

successfully completed the Internship at DIVYA ENGINEERS, DR. Moorthy Nagar, Padi,

Chennai, Tamil Nadu, during the period from 01.09.2022 to 17.09.2022.

We wish him all the best in future endeavors.

For Divya Engineers

NAVA MURUGADASS General Manager +91 98844 48499

TESIED PRINCIPAS,

M.Sumarasamy College of Engineerin? "halavapalavain Kami 4301!"

Specialist in : Design, Engineering, Manufacture & Supply of PLC & SCADA, Automatica, IloT, RTU, AC / DC Drive, Instrumentation, Mimic, Relay, LT MCC, Control Desk, LT PCC and Pneumatic Control Panel, Isolator Box, Junction Boz & Local Control Station





INPLANT TRAINING CERTIFICATE

Date: 17/09/2022

The request for the carrying out the inplant training completed certificate received from JEEVABALAN.T (RegNo: 19BME4038) student final year BE(Mechanical Engineering) in your esteemed institution, M.Kumarasamy College Of Engineering-Thalavapalayam, Karur, his INPLANT TRAINING Completed in our concern period from 1.9.2022 to 17.9.2022

We wish him all the best for the future endeavors.

KOTHARI SUGAR AN CHEMICALS LTD. Kattur, Trichy

TRAIED PRINCIPAT.

M.Kumarasamy College of Engineering Thalavapalavam Karn (630112

Kothari Sugars and Chemicals Limited,"Kothari Buildings" No.115, Mahatma Gandhi Salai, Nungambakkam, Chennai 600 034.Tamil Nadu, India



4040

INPLANT TRAINING CERTIFICATE

Date: 17/09/2022

The request for the carrying out the inplant training completed certificate received from JENISH KUMAR.S (RegNo:19BME4040) student final year BE(Mechanical Engineering) in your esteemed institution, M.Kumarasamy College Of Engineering-Thalavapalayam, Karur, his INPLANT TRAINING Completed in our concern period from 1.9.2022 to 17.9.2022

We wish him all the best for the future endeavors.

KOTHARI SUGAR AND CHEMICALS LTD. Kattur, Trichy

A

TESTED PRINCIPA. Kumarasamy College of Engineerina Thalavapalavain Karii .630113

Kothari Sugars and Chemicals Limited,"Kothari Buildings" No.115, Mahatma Gandhi Salai, Nungambakkam, Chennai 600 034.Tamil Nadu, India

in a sure

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GSTIN : 33AAEPN3016B1ZH

KULATHUPALAYAM, PAVITHRAM PO., KARUR - 639 002.

Date : 17/09/2022

CERTIFICATE

This is to certify that Mr. S. JITHEESWARAN, Reg No: 19BME4041 currently pursuing his B.E., Mechanical Engineering in M. KUMARASAMY COLLEGE OF ENGINEERING, Karur. has undergone Internship Training in our company during the period of 16 days from 1st September 2022 to 16th September 2022, and his Conduct and Character was good during the training period.



TESTED PRINCIPA. M.Rumarasamy College of Engineerina "halavapalayatu Karu .630113

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Divya Engineers Total Integrated Automation & Control Solution Provider (ISO 9001 : 2015 CERTIFIED COMPANY) No. 9/82, Dr. Moorthy Nagar, Padi, Chennai- 600 050 E-mail : divya.engineers@gmail.com, sales@divyaengineers.in Website : www.divyaengineers.in; GST No: 33AAEFD4584G1ZJ Mobile : +91 94441 61305, +91 98843 55219, +91 72001 61305

4043

17.09.2022

TO WHOMSOEVER IT MAY CONCERN

CERTIFICATE

This is to certify that Mr. KABILAN AP(19BME4043), BE student in Mechanical Engineering from M Kumarasamy college of engineering, Thalavapalayam, Tamil Nadu has successfully completed the Internship at DIVYA ENGINEERS, DR.Moorthy Nagar, Padi, Chennai, Tamil Nadu, during the period from 01.09.2022 to 17.09.2022.

We wish his all the best in future endeavours,

For Divya Engineers

obile 001613 Chenn

ENG

NAVA MURRUOADASS General Manager +91 98844 48499

THSTED PRINCIPAS.

M. Kumarasamy College of Engineerina "halavapalavam Kami 63911"

Specialist in : Design, Engineering, Manufacture & Supply of PLC & SCADA, Automation, IIoT, RTU, AC / DC Drive, Instrumentation, Mimic, Relay, LT MCC, Control Desk, LT PCC and Pneumatic Control Panel, Isolator Box, Junction Box & Local Control Station



JEPPIAAR CEMENTS PRIVATE LIMITED

No.1-A, Dindugal Main Road, PVTK Balaratha Complex,

Dheeran Nagar Bus Stop, Tiruchirappalli, Tamil Nadu 620009

4044

Date : 18-9-2022

INPLANT TRAINING CERTIFICATE

This is to certify that KAMESHWARAN. K (RegNo. 19BME4044) from M.Kumarasamy College Of Engineering-Thalavapalayam, Karur has been successfully completed the INPLANT TRAINING in our organization for the period from 1-9-2022 to 17-9-2022.

We wish him all the best for the future endeavors.

Thanking you

Manager

Komelkumor P

JEPPMAB CEMENTS Tiruchirappalli.

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PRINCIPAL M. Kumarasamy College of Engineerina "halavanalavam Karu - 630112

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ROFENAA TECHNOLOGIES GSTIN: 33CNIPM5646P1ZC Reg Office: 37/1A, Near Aggarwal Eye Hospital, Opposite Indian Oil Bunk A.A.Road, Arapalayam, Madurai-625016 Tamilnadu, INDIA PH: 7010422310/9500794310 Email: profenaa.madurai@gmail.com Website: www.profenaagroups.com

Ref:EXPTR/21/22

4046

19 Sep 2022

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the student Mr. K B. Kaviarasu of Mechanical Engineering Dept. of M.Kumarasamy College Of Engineering, Karur has satisfactorily completed his internship program and worked the various machines of "LASER Cutting, CNC and Milling" during the period 01/09/22 to 17/09/22 under our guidance.

Thanking you,

For Profenaa Technologies

(p). smight from

Mr. Karthikkaruppu M Managing Director- Profenaa Technologies

Profenaa Industrial Training Centre (PITC) Industrial Training & Placement Engineering Service-

No:37/1, Near Aggarwal Eye Hospital. Opposite Indian Oil Petrol Bunk, A.A Road, Arapalayam Bus Stand, Madural-625016 : 70104 22310

rested PRINCIPA:

₩ Kumarasamy College of Engineerina nalavapalavam Karn - 20114

Profenaa Technologies: Reg Office: 37/1A, Near Aggarwal Eye Hospital, Opposite Indian Oil Petrol Bunk, A.A Road, Arapalayam, Madurai-625016 PH: 7010422310/9500794310. Email: Profenaa.maduraj@gmail.com GSTIN: 33CNIPM5646P1ZC Web: www.profenaagroups.com

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VEESURS ENERGY SYSTEMS PRIVATE LIMITED

Industrial Estate, Thuvakudi, Tamil Nadu 620014

4054

Date: 17/09/2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that KRITHIK.R (Reg. No. 19BME4054) fromM.Kumarasamy College Of Engineering-Thalavapalayam,Karurhas been successfully completed the INPLANT TRAINING in our organization for the period from 1/9/2022 to 17/9/2022.

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We wish him all the best for the future endeavors.

Mb

VEESONS ENERGY SYSTEM: Thuvakudi Trichy - 620 015.

TTESTED PRINCIPA:

*halavapalavam Karn -630112



4059

INPLANT TRAINING CERTIFICATE

Date: 17/09/2022

The request for the carrying out the inplant training completed certificate received from MANI ARASU.S (RegNo: 19BME4059) student final year BE(Mechanical Engineering) in your esteemed institution, M.Kumarasamy College Of Engineering-Thalavapalayam, Karur ,his INPLANT TRAINING Completed in our concern period from 1.9.2022 to 17.9.2022

We wish him all the best for the future endeavors.

TTESIED

MAumarasamy College of Engineering Thalavapalavam Karu 630113

P

KOTHARI SUGAR AND CHEMICALS LTD. Kattur, Trichy

Kothari Sugars and Chemicals Limited,"Kothari Buildings" No.115, Mahatma Gandhi Salai, Nungambakkam, Chennai 600 034.Tamil Nadu, India

60



Shri Amman Steel and Alied Industries (P) Ltd.,





🔞 : 0431 - 2680411 / 2680422

sasai@ammantry.com
 www.ammantry.com

(): 0431 - 2680850

Regd Off & Fac.: Silampudayanpatti Road, Nagamangalam, Tiruchirappalli-12. (TN) GSTIN/UIN : 33AALCS5586R1ZC. CIN No : U27106TN2007PTC065678

SASAI-INT-FINAL-84-01

19-09-2022 062

CERTIFICATE

This is to certify that Mr. P.MANOJ KUMAR (Reg. No. 19BME4062), B.E. Mechanical Final year student of M. Kumarasamy College Of Engineering (Autonomous) Karur, has successfully completed his Summer Internship in our Organization under the guidance of Mr. M. Mohamed Ibrahim (M.Q.C / MR) from 05thSep 2022 to 19thSep 2022. We appreciate his keen interest and the efforts taken to do this Internship. During this period his conduct and character is good and performance is satisfactory. We wish success in all future endeavors.

For SHRI AMMAN STEEL AND ALIED INDUSTRIES (P) LTD

M.C

AUTHORIZED SIGNATORY Email: qc@ammantry.com



RSIED PRINCIPA:.

W Kumarasamy College of Engineerina "halavapalavam Karu -6 :011"

1.1.1.1

VEESONS ENERGY SYSTEMS PRIVATE LIMITED

Industrial Estate, Thuvakudi, Tamil Nadu 620014

4071

Date : 17.09.2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that MONISH KUMAR.S ((Reg. No. 19BME4071) from M.Kumarasamy College Of Engineering-Thalavapalayam, Karur has been successfully completed the INPLANT TRAINING in our organization for the period from 1/9/2022 to 17/9/2022.

664

We wish him all the best for the future endeavors.

S. Havid

VEESONS ENERGY SYSTEMS Thuvakudi Trichy - 620 015.

TESTED

PRINCIPA: M.Kumarasamy College of Engineerin; Chalavapalavam Karn, 639112

M.KUMARASAMY COLLEGE OF ENGINEERING DEPARTMENT OF MECHANICAL ENGINEERING

4062

NAME :manojkumar(19BME4062) Year/sem: final year / seventh Industry name&address: amman try steels Trichy Duration: 05.09.2022 to 19.09.2022 No.of. day : 15 days

CIPAS.

M.Sumarasamy College of Engineering Thalavapalavam Karn -630112 P. Mount (



E.I.D. - PARRY (INDIA) LIMITED

Pugalur Sugar Factory, Pugalur - 639 113. Karur District, Tamil Nadu, India. Phone : 04324-270203, 270204, 270207 Fax : 04324-270219. Cell: 98404 14867 Regd.Office : Dare House, No. 234, NSC Bose Road, Chennal - 600 001, Tamil Nadu, India. Website : www.eidparry.com CIN: L24211TN1975PLC006989 GSTIN: 33AAACE0702C1ZO

September 14, 2022

4078

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr Naveen M (19BME4078), IV year B.E. (Mechanical Engineering) student from M.Kumarasamy College of Engineering, Thalavapalayam, Karur District, underwent Inplant Training in our Organization from 02-09-2022 to 14-09-2022.

During the course of the training, his performance and conduct were Good.

Yours faithfully, For E.I.D.-Parry (India) Limited.

E R Vincent Paul Manager-HR

TESTED RINCIPA:

M.Kumarasamy College of Engineerin, Thalavapalavam Karni -639112



75



E.I.D. - PARRY (INDIA) LIMITED

Pugalur Sugar Factory, Pugalur - 639 113. Karur District, Tamil Nadu, India. Phone : 04324-270203, 270204, 270207 Fax : 04324-270219. Cell: 98404 14867 Regd.Office : Dare House, No. 234, NSC Bose Road, Chennai - 600 001, Tamil Nadu, India. Website : www.eldparry.com CIN: L24211TN1975PLC006989 GSTIN: 33AAACE0702C1ZO

4081

September 14, 2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr Nishanth S (19BME4081), IV year B.E. (Mechanical Engineering) student from M.Kumarasamy College of Engineering, Thalavapalayam, Karur District, underwent Inplant Training in our Organization from 02-09-2022 to 14-09-2022.

During the course of the training, his performance and conduct were Good.

Yours faithfully, For E.I.D. -Parry/(India) Limited.

E R Vincent Paul Manager-HR

ATTESTED PRINCIPA .

M Kumarasamy College of Engineerin Thalavapalavam Kami 63011



JSW Steel Limited



JSW-SLM/HR/Industrial Training/40/2022 19th Sep 2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr S Prasanth BE (Mechanical Engineering) Fourth Year Student of M Kumarasamy College of Engineering, Karur has successfully completed the industrial training in our organization from 04.09.2022 to 19.09.2022.

During the industrial training period his conduct was good and we wish him all the best for his future endeavors.

For JSW STEEL LIMITED

C RAM SENIOR MANAGER (HR)

ATTESTED PRINCIPAT.

Kumarasamy College of Engineerin: "hatavanalavam Kami 630117

Salem Works P.O. Pottaneri, Mecheri, Mettur - Tk, Salem - Dt. Pin: 636 453 Tamilnadu, India. CIN No L27102MH1994PLC152925 T+91 4298 272000 www.jsw.in

Registered Office **JSW Centre** Bandra Kurla Complex Bandra East, Mumbai 400 051 T +91 22 4286 1000 F +91 22 4286 3000







4093

INPLANT TRAINING CERTIFICATE

Date: 17/09/2022

The request for the carrying out the inplant training completed certificate received from PRAVEEN.K (Reg No: 19BME4093) student final year BE(Mechanical Engineering) in your esteemed institution, M.Kumarasamy College Of Engineering-Thalavapalayam, Karur ,his INPLANT TRAINING Completed in our concern period from 1.9.2022 to 17.9.2022

We wish him all the best for the future endeavors.

r

TESTED PRINCIPAS, M Kumarasamy College of Engineering "halavapalavan Karn 630112

'igensh

KOTHARI SUGAR AND CHEMICALS LTD. Kattur, Trichy

Kothari Sugars and Chemicals Limited,"Kothari Buildings" No.115, Mahatma Gandhi Salai, Nungambakkam, Chennai 600 034.Tamil Nadu, India



Divya Lingineers Total Integrated Automation & Control Solution Provider (ISO 9001 : 2015 CERTIFIED COMPANY) No. 9/82, Dr. Moorthy Nagar, Padi, Chennai- 600 050 E-mail : divya engineers@gmail.com, sales@divyaengineers.in Website : www.divyaengineers.in; GST No: 33AAEFD4584G1ZJ Mobile : +91 94441 61305, +91 98843 55219, +91 72001 61305

17.09.2022 4097

TO WHOMSOEVER IT MAY CONCERN

CERTIFICATE

This is to certify that Mr. M.RAGUL(19BME4097), BE student in Mechanical Engineering from M Kumarasamy college of engineering, Thalavapalayam, Tamil Nadu has successfully completed the Internship at DIVYA ENGINEERS, DR. Moorthy Nagar, Padi, Chennai, Tamil Nadu, during the period from 01.09.2022 to 17.09.2022.

We wish him all the best in future endeavors.

For Divya Engineers

Mobile Chi

GIN

NAVA MURUGADASS General Manager +91 98844 48499

TESTED PRINCIPAL.

M.Rumarasamy College of Engineerin, Thalavapalavam Karn (430) (2

Specialist in : Design, Engineering, Manufacture & Supply of PLC & SCADA, Automation, HoT, RTU, AC / DC Drive, Instrumentation, Mimic, Relay, LT MCC, Control Desk, LT PCC and Pneumatic Control Panel, Isolator Box, Junction Box & Local Control Station



STANDAR NO



E.I.D. - PARRY (INDIA) LIMITED

Pugalur Sugar Factory, Pugalur - 639 113. Karur District, Tamil Nadu, India. Phone : 04324-270203, 270204, 270207 Fax : 04324-270219. Coll: 98404 14867 Regd.Office : Dare House, No. 234, NSC Bose Read, Chennal - 600 001, Tamil Nadu, India. Website : www.eldparry.com CIN: L24211TN1975PLC006989 GSTIN: 33AAACE0702C1ZO

September 14, 2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr Rama Prasanth (19BME4099), IV year B.E. (Mechanical Engineering) student from M.Kumarasamy College of Engineering, Thalavapalayam, Karur District, underwent Inplant Training in our Organization from 02-09-2022 to 14-09-2022.

During the course of the training, his performance and conduct were Good.

Yours faithfully, For E.I.D. - Parry (India) Limited.

E R Vincent Paul Manager-HR

TESTED PRINCIPA:.

Humarasamy College of Engineerin, "halavapalavam Karn - 43011"



JEPPIAAR CEMENTS PRIVATE LIMITED

No.1-A, Dindugal Main Road,PVTK Balaratha Complex, Dheeran Nagar Bus Stop, Tiruchirappalli, Tamil Nadu 620009

4105

Date : 18-9-2022

INPLANT TRAINING CERTIFICATE

This is to certify that SANTHOSH RISHIHARAN.M (RegNo. 19BME4105) from M.Kumarasamy College Of Engineering-Thalavapalayam, Karur has been successfully completed the INPLANT TRAINING in our organization for the period from 1-9-2022 to 17-9-2022.

We wish him all the best for the future endeavors.

Thanking you

Manager

Romal kumar P

JEPPMAB CEMENTS Tiruchirappalli.

ESTED

PRINCIPA: 4 Kumarasamy College of Engineerin; ^{Thalavapalavam} Karn, 630112

JSW Steel Limited



JSW-SLM/HR/Industrial Training/40/2022 19th Sep 2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr S Selvaprakash, BE (Mechanical Engineering) Fourth Year Student of M Kumarasamy College of Engineering, Karur has successfully completed the industrial training in our organization from 04.09.2022 to 19.09.2022.

During the industrial training period his conduct was good and we wish him all the best for his future endeavors.

For JSW STEEL LIMITED

030 C RAM SENIOR MANAGER (HR)

ATTESTED PRINCIPAT.

M Kumarasamy College of Engineerins

Salem Works P.O. Pottaneri, Mecheri, Mettur - Tk, Salern - Dt. Pin : 636 453 Tamilnadu, India. CIN No L27102MH1994PLC152925 T +91 4298 272000 www.jsw.in Registered Office JSW Centre Bandra Kurla Complex Bandra East, Mumbal 400 051 T +91 22 4286 1000 F +91 22 4286 3000



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JEPPIAAR CEMENTS PRIVATE LIMITED

No.1-A, Dindugal Main Road, PVTK Balaratha Complex, Dheeran Nagar Bus Stop, Tiruchirappalli, Tamil Nadu 620009

Date : 18-9-2022

INPLANT TRAINING CERTIFICATE

This is to certify that SHARMA.S(RegNo.19BME4114) from M.Kumarasamy College Of Engineering-Thalavapalayam, Karur has been successfully completed the INPLANT TRAINING in our organization for the period from 1-9-2022 to 17-9-2022.

We wish him all the best for the future endeavors.

Thanking you

Manager

Romal kumor P

JEPPIAAB CEMENTS Tiruchirappalli.

ATTESIED

PRINCIPA: Kumarasamy College of Engineering Thatavapalayam Karu 639112



PROFUNAA TECHNOLOGIES

GSTIN: 33CNIPM5646P1ZC Reg Office: 37/1A, Near Aggarwal Eye Hospital, Opposite Indian Oil Bunk A.A.Road, Arapalayam , Madurai-625016 Tamilnadu ,INDIA PH: 7010422310/9500794310 Email: profenaa.madurai@gmail.com Website: www.profenaagroups.com

Ref:EXPTR/21/22

4120

19 Sep 2022

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the student Mr. B S. Sree Amreeth of Mechanical Engineering Dept. of M.Kumarasamy College Of Engineering, Karur has satisfactorily completed his internship program and worked the various machines of "LASER Cutting , CNC and Milling" during the period 01/09/22 to 17/09/22 under our guidance.

Thanking you,

For Profenaa Technologies

(p). might bring

Mr. Karthikkaruppu M Managing Director- Profenaa Technologies

TESTED BRINCIPAS.

Kumarasamy College of Engineerin: Thalavapalavam Karn 630113

Profenaa Industrial Training Centre (PITC) Industrial Training & Placement Engineering Services

> No:37/1, Near Aggarwal Eye Hospital, Opposite Indian Oil Petrol Bunk, A.A Road, Arapalayam Bus Stand, Madurai-625016 Ph: 70104 22310

Profenaa Technologies: Reg Office: 37/1A, Near Aggarwal Eye Hospital, Opposite Indian Oil Petrol Bunk, A.A Road, Arapalayam, Madurai-625016 PH: 7010422310/9500794310. <u>Email: Profenaa.madurai@gmail.com</u> GSTIN: 33CNIPM5646P1ZC Web: <u>www.profenaagroups.com</u>



E.I.D. - PARRY (INDIA) LIMITED

Pugalur Sugar Factory, Pugalur - 639 113. Karur District, Tamil Nadu, India. Phone : 04324-270203, 270204, 270207 Fax : 04324-270219. Cell: 98404 14567 Regd.Office : Dare House, No. 234, NSC Bose Road, Chennai - 600 001, Tamil Nadu, India. Website : www.eidparry.com CIN: L24211TN1975PLC006989 GSTIN: 33AAACE0702C1Z0

September 14, 2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr Surendar N (19BME4126), IV year B.E. (Mechanical Engineering) student from M.Kumarasamy College of Engineering, Thalavapalayam, Karur District, underwent Inplant Training in our Organization from 02-09-2022 to 14-09-2022.

During the course of the training, his performance and conduct were Good.

Yours faithfully, For E.I.D.-Parry (India) Limited.

63.

E R Vincent Paul Manager-HR

TESTED RINCIPAL

H.Kumarasamy College of Engineerin; "halavapalayam Karu -639113





GSTIN: 33CNIPM5646P1ZC Reg Office: 37/1A, Near Aggarwal Eye Hospital, Opposite Indian Oil Bunk A.A.Road, Arapalayam , Madurai-625016 Tamilnadu ,INDIA PII: 7010422310/9500794310 Email: profenaa.madurai@gmail.com Website: www.profenaagroups.com

PROFENAA TACH VIJLOGIES

Ref:EXPTR/21/22

4128

19 Sep 2022

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the student Mr. K.Suriya of Mechanical Engineering Dept. of M.Kumarasamy College Of Engineering, Karur has satisfactorily completed his internship program and worked the various machines of "LASER Cutting, CNC and Milling" during the period 01/09/22 to 17/09/22 under our guidance.

Thanking you,

For Profenaa Technologies

(p). might any

Mr. Karthikkaruppu M Managing Director- Profenaa Technologies

ATTESIED PRINCIPAL

M.Kumarasamy College of Engineerin, "halavabalavam Karn 630113

Profenaa Industrial Training Centre (PITC) Industrial Training & Placement Engineering Services

No:37/1, Near Aggarwal Eye Hospital, Opposite Indian Oil Petrol Bunk, A.A Road, Arapalayam Bus Stand, Madurai-625016 Pa: 70104 22310

Profenaa Technologies: Reg Office: 37/1A, Near Aggarwal Eye Hospital, Opposite Indian Oil Petrol Bunk, A.A Road, Arapalayam, Madurai-625016 PH: 7010422310/9500794310. Email: Profenaa.madurai@gmail.com GSTIN: 33CNIPM5646P1ZC Web: www.wrofenaagroups.com

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4136

INPLANT TRAINING CERTIFICATE

Date: 17/09/2022

The request for the carrying out the inplant training completed certificate received from VASANTH. M (RegNo: 19BME4136) student final year BE(Mechanical Engineering) in your esteemed institution, M.Kumarasamy College Of Engineering-Thalavapalayam, Karur ,his INPLANT TRAINING completed in our concern period from 1.9.2022 to 17.9.2022

We wish him all the best for the future endeavors.

ESTED

F

W BRINCIPAF. M Kumarasamy College of Engineerin; Shalavapalavam Karu -639112

KOTHARI SUGAR AND CHEMICALS LTD. Kattur, Trichy

Kothari Sugars and Chemicals Limited,"Kothari Buildings" No.115, Mahatma Gandhi Salai, Nungambakkam, Chennai 600 034.Tamil Nadu, India



Divya Lingineers Total Integrated Automation & Control Solution Provider (ISO 9001 : 2015 CERTIFIED COMPANY) No. 9/82, Dr. Moorthy Nagar, Padi, Chennai- 600 050 E-mail : divya.engineers@gmail.com, sales@divyaengineers.in Website : www.divyaengineers.in; GST No: 33AAEFD4584G1ZJ Mobile : +91 94441 61305, +91 98843 55219, +91 72001 61305

17.09.2022 4138

5- all

TO WHOMSOEVER IT MAY CONCERN

CERTIFICATE

This is to certify that Mr. P. VIGNESH(19BME4138), BE student in Mechanical Engineering from M Kumarasamy college of engineering, Thalavapalayam, Tamil Nadu has successfully completed the Internship at DIVYA ENGINEERS, DR. Moorthy Nagar, Padi, Chennai, Tamil Nadu, during the period from 01.09.2022 to 17.09.2022.

We wish him all the best in future endeavors.

For Divya Engineers

NAVA MURUGADASS General Manager +91 98844 48499

TYESTED

M.Kumarasamy College of Engineerin; Thalavapalavam Kami Atorica

Specialist in : Design, Engineering, Manufacture & Supply of PLC & SCADA, Automation, HoT, RTU, AC / DC Drive, Instrumentation, Mimic, Relay, LT MCC, Control Desk, LT PCC and Pneumatic Control Panel, Isolator Box, Junction Box & Local Control Station



4147



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GSTIN : 33AAEPN3016B1ZH

KULATHUPALAYAM, PAVITHRAM PO., KARUR - 639 002.

Date : 17/09/2022

CERTIFICATE

1

This is to certify that Mr. M. YUVANRAJESH, Reg No: 19BME4147 currently pursuing his B.E., Mechanical Engineering in M. KUMARASAMY COLLEGE OF ENGINEERING, Karur. has undergone Internship Training in our company during the period of 16 days from 1st September 2022 to 16th September 2022, and his Conduct and Character was good during the training period.

N.

FOR SRI SAKTHI COACH, Auth Signatory.

Č.,

TIESTED PRINCIPAS, H Kumarasamy College of Engineering Thatavapalavam Karn .630113

4321

VEESONS ENERGY SYSTEMS PRIVATE LIMITED

Industrial Estate, Thuvakudi, Tamil Nadu 620014

Date: 17.09.2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that VISHNUDHASAN.M.K (Reg. No. 19BME4321) from M.Kumarasamy College Of Engineering-Thalavapalayam, Karur has been successfully completed the INPLANT TRAINING in our organization for the period from 1/9/2022 to 17/9/2022.

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We wish him all the best for the future endeavors.

S. Hemid.

VEESONS ENERGY SYSTEMS Thuvakudi Trichy - 629 015.

ATTESTED PRINCIPAL.

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M.Sumarasamy College of Engineerina "balavapalavam Karn -639112

4004







546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Date: 19 .11.2022

CERTIFICATE

This is to certify that R.Akil 3rd year B.E.Mechanical Engineering (Roll No.20BME4004) Student of M.Kumarasamy College of engineering, Karur .Has attended in Internship for the period from 07.11.2022 to 19.11.2022.

For Gemini Coach Builders

Manager.



ATTESTED

r

4. Kumarasamy College of Engineering Thalavapalavam Kani -630117

S	C.No: JANMF123
ATTESTED PRINCIPAL	CERTIFICATE OF COMPLETION This certificate is presented to Mr./Ms <u>AKIL.R (20BME4004)</u>
	Has Successfully Completed <u>INTERNSHIP</u> Training Program in " <u>MANUFACTURING</u> " During <u>07.01.2023</u> TO <u>25.01.2023</u> Congratulations on a job well done!
	S.S.L.L. Director B.S.L.L.

(a)



SEMINI



4008

546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Coach Builders

Date: 19.11.2022

CERTIFICATE

This is to certify that A.Avinash 3rd year B.E.Mechanical Engineering (Roll No.20BME4008) Student of M.Kumarasamy College of engineering, Karur.Has attended in Internship for the period from 07.11.2022 to 19.11.2022.

For Gemini Coach Builders

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Manager.



ESTED PRINCIPAL

H Kumarasamy College of Engineering "halovapalavain Karu -639117

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SD PRO SOLUTIONS
CERTIFICATE OF COMPLETION
This certificate is presented to
Mr./Ms. AVINASH. A (20BME4008)
Has Successfully Completed <u>INTERNSHIP</u> Training Program in " MANUFACTURING"
During <u>07.01.2023 TO 25.01.2023</u> Congratulations on a job well done!
S.S.L.L. Director Big Pro Solution Director Director

A TAX KS	SD PRO SOLUTIONS	
TX KSIED PRINCIPAI. PRINCIPAI. Samy College of Engin	CERTIFICATE OF COMPLETION	
Engine	This certificate is presented to	
	Mr./Ms. DHARUNKUMAR.R.K (20BME4017)	
	Has Successfully Completed <u>INTERNSHIP</u> Training Program in " <u>MANUFACTURINU</u> " During <u>07.01.2023</u> To 25.01.2023	
G	Congratulations on a job well done!	
	S. <u>8</u> LL. Director Birector	

4017







546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Date: 19 .11.2022

<u>CERTIFICATE</u>

This is to certify that R.K.Dharun Kumar 3rd year B.E.Mechanical Engineering (Roll No.20BME4017) Student of M.Kumarasamy College of engineering, Karur. Has attended in Internship for the period from 07.11.2022 to 19.11.2022.

For Gemini Coach Builders

m

Manager.



ATTESTED RINCIPAJ.

H Kumarasamy College of Engineerina Thalavanalavain Karu -639113

4016



GEMIN Coach Builders



546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Date: 01.02.2023

CERTIFICATE

This is to certify that Dharun.G.K 3rd year B.E.Mechanical Engineering (Roll No.20BME4016) Student of M.Kumarasamy College of engineering, Karur. Has attended in plant training for the period from 09.01.2023 to 29.01.2023.

For Gemini Coach Builders

Manager.



TESTED RINCIPAL.

M Kumarasamy College of Engineering Thalavapalavam Karu -639157

4018



GEMIN Coach Builders



546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Date:01.02.2023

CERTIFICATE

This is to certify that Dharun.R 3rd year B.E.Mechanical Engineering (Roll No.20BME4018) Student of M.Kumarasamy College of engineering, Karur . Has attended in plant training for the period from 09.01.2023 to 29.01.2023.

For Gemini Coach Builders

(Manager.



ATTESTED

M Kumarasamy College of Engineerina Thalavapalavain Karu 639153

4018



The Salem Co-operative Sugar Mills Ltd.,

AN ISO 9001: 2015 QMS CERTIFIED SUGAR MILLS

MOHANUR - 637 015, Namakkal District, Tamil Nadu. GSTIN : 33AAAAT3144R1Z8 **(D)**

ISO 9001 : 2015 Reg. No. 663369

Rc.No.2849/C3/Inplant/2022

Dated : 30-11-2022

CERTIFICATE

This is to certify that Mr.R.Dharun, III Year B.E. Mechanical Engineering (Reg.No:20BME4018) student of M.Kumarasamy College of Engineering, Karur-639113 has undergone Internship Training in The Salem Co-operative Sugar Mills Ltd., Mohanur - 637 015, Namakkal (Dt) during the period from 14-11-2022 to 29-11-2022

For The Salem Co-operative Sugar Mills Ltd.,

Managing Director For

TESTED umarasamy College of Engineerina alavapalavam Karii .639113

Phone : STD : 04286 - 255221, 255224 Mohanur.

V-B-30/c1/22

E-mail ID : sacos07 @ yahoo.co.in

Fax: 04286 - 255264

£.	C.No: JANMF122
I TESTED	CERTIFICATE OF COMPLETION
Y	This certificate is presented to
	Mr./Ms. DHINESHKUMAR.S (20BME4019)
	Has Successfully Completed <u>INTERNISHIP</u> Training Program in "MANU FAC.TURING
6	During 07.01.2023 TO 25.01.2023 Congratulations on a job well done!
R	SD Pro Sol
	S.S.L.L. Director

4019







546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Date: 19.11.2022

CERTIFICATE

This is to certify that S.Dhineshkumar 3rd year B.E.Mechanical Engineering (Roll No.20BME4019) Student of M.Kumarasamy College of Engineering, Karur. Has attended in Internship for the period from 07.11.2022 to 19.11.2022.

For Gemini Coach Builders

Manager.



TESTED INCIPAL.

M Sumarasamy College of Engineerina "halavapalavam Karu 639112

4020

Cell: 9487607164

VINU TINKER WORKS PERIYAPALLY, NEYYOOR P.O., -629 802 Kanyakumari Dist.

Prop: T. Vinu

Date: _____25/01/2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. DIVAKAR N (Reg. No.20BME4020) doing Mechanical Engineering in M Kumarasamy College of Engineering, Karur, has undergone In Plant Training in our Maintenance Department from 07.01.2023 to 25.01.2023. His conduct was found to be good during the training period.

We wish him all success in his career.

ESTED

Aumarasamy College of Engineering Chalavapalavam Karit -639117

JKER WORKS For VINU Proprietor 42

Cell: 9437607164

4021

VINU TINKER WORKS PERIVAPALLY, NEVYCOR P.O., -629 802

Kanyakumari Dist.

Prop: T. Vinu

25/01/2025

Dete:

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. GEROGE STEWARD S P (Reg. No.20BME4021) doing Mechanical Engineering in M Kumarasamy College of Engineering, Karur, has undergone In Plant Training in our Maintenance Department from 07.01.2023 to 25.01.2023. His conduct was found to be good during the training period.

We wish him all success in his career.

ALIESTED NETPHE

* Commission Gallege of Engineering The prostation of Carls - Avoid 2

FOR VINU TINKER WORKS

Proprietor

ل 21 GSTIN : 33CYWPM4540B1ZE



SRI KUMARAN ENGINEERING

SF. No. 212/1, Chinthamani Nagar, Near Surya Nagar East Thottam, Ondipudur, Coimbatore - 641 016. Email : srikumaranengineering.covai@gmail.com Ph : 95784 62202, 93443 55261

Date: 18/11/2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. GEROGE STEWARD S P(Reg. No.20BME4021) doing Mechanical Engineering in M Kumarasamy College of Engineering, Karur, has undergone In Plant Training in our Production Department from 07/11/2022 to 18.11.2022. His conduct was found to be good during the training period.

97

We wish him all success in his career.

For SRI KUMARAN ENGINEERING 281 Proprietor

ATTESIED PRINCIPAT.

M Kumarasamy College of Engineerina Thalavapalavam Karu -639117

4025







546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Date: 19 .11.2022

<u>CERTIFICATE</u>

This is to certify that S.Gowsick 3rd year B.E.Mechanical Engineering (Roll No.20BME4025) Student of M.Kumarasamy College of engineering,Karur .Has attended in Internship for the period from 07.11.2022 to 19.11.2022.

For Gemini Coach Builders

Manager.



ATTENIED PRINCIPAL,

M Kumarasamy College of Engineering Thalavapalavam Karn 639113

4030



GEMIN Coach Builders



546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Date:01.02.2023

<u>CERTIFICATE</u>

This is to certify that Hariharan.D 3rd year B.E.Mechanical Engineering (Roll No.20BME4030) Student of M.Kumarasamy College of engineering, Karur . Has attended in plant training for the period from 09.01.2023 to 29.01.2023.

For Gemini Coach Builders

Manager.



ESTED RINCIPA!

M Kumarasamy College of Engineering Malavapalavain Karu 639113

	SCOL
M Kumarasamy Coll	SD PRO SOLUTIONS
Samy College of Engineer	CERTIFICATE OF COMPLETION
Enginee	This certificate is presented to
)	Mr./Ms. GOWSICK.S (20BME 4025)
	Has Successfully Completed <u>INTERSHIP</u> Training Program in " MANUFACTURIN(n "
6	During <u>57.01.2023 To 25.01.2023</u> Congratulations on a job well done!
	SP Pro Sol
	S.S.L.L. Director Director

GSTIN: 33CYWPM45



SRI KUMARAN ENGINEERING

SF. No. 212/1, Chinthamani Nagar, Near Surya Nagar East Thottam, Ondipudur, Coimbatore - 641 016. Email : srikumaranengineering.coval@gmail.com Ph : 95784 62202, 93443 55261

Date : 18/11/2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr.J JORSHINE (Reg. No.20BME4034) doing Mechanical Engineering in M Kumarasamy College of Engineering, Karur, has undergone In Plant Training in our Production Department from 07/11/2022 to 18.11.2022. His conduct was found to be good during the training period.

We wish him all success in his career.

For SRI KUMARAN ENGINEERING

S-M-sy Proprietor

TESTED PRINCIPAL

M Rumarasamy College of Engineering "halavapalavam Karn -639113

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4034

Cell: 9487607164

VINU TINKER WORKS

PERIYAPALLY, NEYYOOR P.O., -629 802 Kanyakumari Dist.

Prop: T. Vinu

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. J JORSHINE (Reg. No.20BME4034) doing Mechanical Engineering in M Kumarasamy College of Engineering, Karur, has undergone In Plant Training in our Maintenance Department from 07.01.2023 to 25.01.2023. His conduct was found to be good during the training period.

102

We wish him all success in his career.

TESTED PRINCIPAL.

M Kumarasamy College of Engineering Thalavapalavam Karu~639158

For VINU TINKER WORKS

GSTIN : 33CYWPM4540B1ZE

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SRI KUMARAN ENGINEERING

SF. No. 212/1, Chinthamani Nagar, Near Surya Nagar East Thottam, Ondipudur, Coimbatore - 641 016. Email : srikumaranengineering.covai@gmail.com Ph : 95784 62202, 93443 55261

Date : 18/11/2022

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr.DIVAKAR N (Reg. No.20BME4020) doing Mechanical Engineering in M Kumarasamy College of Engineering, Karur, has undergone In Plant Training in our Production Department from 07/11/2022 to 18.11.2022. His conduct was found to be good during the training period.

We wish him all success in his career.

For SRI KUMARAN ENGINEERING

TTESTED PRINCIPAS.

M Kumarasamy College of Engineering Thalavapalavain Karu -639113

4037



GEMIN Coach Builders



546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Date: 19 .11.2022

CERTIFICATE

This is to certify that S.Kathir 3rd year B.E.Mechanical Engineering (Roll No.20BME4037) Student of M.Kumarasamy College of engineering, Karur .Has attended in Internship for the period from 07.11.2022 to 19.11.2022.

For Gemini Coach Builders

m

Manager.



ENTEL PRINCIPA.

Kumarasamy College of Engineering Thelavapalavam Karu~639113

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Dech Builders



546/B, Coval Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Date:01.02.2023

CERTIFICATE

This is to certify that Kirubanithi.S 3rd year B.E.Mechanical Engineering (Roll No.20BME4039) Student of M.Kumarasamy College of engineering, Karur . Has attended in plant training for the period from 09.01.2023 to 29.01.2023.

For Gemini Coach Builders

/ Manager.



VITENTER PRINCIPAL.

M Kumarasamy College of Engineering Thalavapalavam Karu~639113

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SEMIN| Coach Builders



546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Date:01.02.2023

<u>CERTIFICATE</u>

This is to certify that Kiruba Shankar.M 3rd year B.E.Mechanical Engineering (Roll No.20BME4038) Student of M.Kumarasamy College of engineering, Karur. Has attended in plant training for the period from 09.01.2023 to 29.01.2023.

For Gemini Coach Builders

Manager.



TEVIED RINCIPA.

M Kumarasamy College of Engineering Thalavapalavam Kanu~639111

A	SD PRO SOLUTIONS
A F.I.E.S.I.E.G A F.I.E.S.I.E.G BRINCIPAL DRINCIPAL	CERTIFICATE OF COMPLETION This certificate is presented to
F	Mr./MS. <u>KATHIR.S</u> (20BME 40 37) Has Successfully Completed <u>INTERNSHIP</u> Training Program
6	in "MANUFACTURIN(ヵ" During01. 2023 Congratulations on a job well done!
	S.S.LL. Director Birector

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GSTIN: 33AAHFG7775M1ZT



BSA JAS-ANZ

546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Coach Builders

JEM!

Date:01.02.2023

<u>CERTIFICATE</u>

This is to certify that Lalith Kishore.P 3rd year B.E.Mechanical Engineering (Roll No.20BME4044) Student of M.Kumarasamy College of engineering, Karur. Has attended in plant training for the period from 09.01.2023 to 29.01.2023.

For Gemini Coach Builders

/ Manager.



INCIPAL

M. Kumarasamy College of Engineering "halavapalavam Karu~639113

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GSTIN : 33AAHFG7775M1ZT





546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

oach Builders

SEMIN

Date:01.02.2023

CERTIFICATE

This is to certify that Lalith Kishore.P 3rd year B.E.Mechanical Engineering (Roll No.20BME4044) Student of M.Kumarasamy College of engineering, Karur. Has attended in plant training for the period from 09.01.2023 to 29.01.2023.

For Gemini Coach Builders

Manager.



CIPAS.

M Anmarasamy College of Engineering Thalavapalayam Karu-639113

4045

ISO 9001 : 2015 Reg. No. 863369



The Salem Co-operative Sugar Mills Ltd.,

AN ISO 9001: 2015 QMS CERTIFIED SUGAR MILLS

MOHANUR - 637 015, Namakkal District, Tamil Nadu. GSTIN : 33AAAAT3144R1Z8

Rc.No.2849/C3/Inplant/2022

Dated : 30-11-2022

CERTIFICATE

This is to certify that Mr.S.Logesh, III Year B.E Mechanical Engineering (Reg.No:20BME4045) student of M.Kumarasamy College of Engineering, Karur-639113 has undergone Internship Training in The Salem Co-operative Sugar Mills Ltd., Mohanur - 637 015, Namakkal (Dt) during the period from 14-11-2022 to 29-11-2022

For The Salem Co-operative Sugar Mills Ltd.,

For Managing Director

30/11/2

TESTEL NCIDAL

"halavapalavam Karu-639113

Phone : STD : 04286 - 255221, 255224 Mohanur.

E-mail ID : sacos07 @ yahoo.co.in

Fax: 04286 - 255264

4322

GSTIN: 33AAHFG7775M1ZT







546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Date: 01.02.2023

<u>CERTIFICATE</u>

This is to certify that Logesh.S 3rd year B.E.Mechanical Engineering (Roll No.20BME4322) Student of M.Kumarasamy College of engineering, Karur. Has attended in plant training for the period from 09.01.2023 to 29.01.2023.

For Gemini Coach Builders

Manager.

TESTED

PRINCIPAL M. Kumarasamy College of Engineering "halavapalavam Karu-639119

4045

GSTIN : 33AAHFG7775M1ZT







546/B, Covai Road, Govinthampalayam, Andankovil East post, KARUR - 8. Ph : 04324 - 290756, Cell : 9444013119, 9790647777, Email : geminicoach@gmail.com

Date: 01.02.2023

CERTIFICATE

This is to certify that Logesh.S 3rd year B.E.Mechanical Engineering (Roll No.20BME4045) Student of M.Kumarasamy College of engineering, Karur. Has attended in plant training for the period from 09.01.2023 to 29.01.2023.

For Gemini Coach Builders

Manager.



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Virtual Internship Completion Certificate

This is to certify that

KISHORE KUMAR S

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

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Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

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h EduSk

Nation Building Through Skills

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :f927801ad42b26712308cabccde685f1 Student ID :STU6369e68c74d4b1667884684 ATTESTED

N·E·A T प्रीद्योगिकी के लिए राष्ट्राय रोक्राणक सहयोग National Educational Alliance for Technology





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This is to certify that

LOGESH S

20BME4045

MECHB

M.Kumarasamy College of Engineering (Autonomous)

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Robotic Process Automation (RPA) Virtual Internship

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Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills

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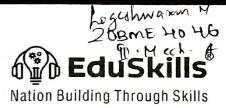
PRIN



Certificate ID :f483ef94aea8e92a66c68036cf602fdd Student ID :STU615472239f3561632924195









Virtual Internship Completion Certificate

This is to certify that

LOGESHWARAN M

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

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Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :04334a8bbb9923cd8473d1c63498f02f Student ID :STU61548c9416dd71632930964 PRINCIPA:

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Virtual Internship Completion Certificate

This is to certify that

MAHESHWARAN. R

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

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Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :b44cbf929eaabc22d87d38e6d30331f9 Student ID :STU62d66f235f49e1658220323

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Virtual Internship Completion Certificate

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MONISH M S

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

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Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills

TESLEO



Certificate ID :9b85d77ecec6b4469f0093da42c73829 Student ID :STU61544f33a82841632915251

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Virtual Internship Completion Certificate

This is to certify that

MOOGITH.S

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

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Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



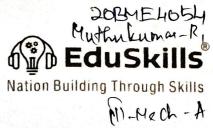
Certificate ID :17870b27dcf3c4d4079539a01a5d0629

PRINCIPA: M. Cumarasamy College of Engineering Thalayanalayam Karu 630112

FESTER









Virtual Internship Completion Certificate

This is to certify that

MUTHUKUMAR R

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

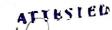
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Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



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Certificate ID :a3c0175a28925333fa5f4dd589f4c667 Student ID :STU615469e9c785c1632922089



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अखिल भारतीय तकनीकी शिक्षा परिषद All India Council for Technical Education



Virtual Internship Completion Certificate

This is to certify that

NARENTHIRAN N

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

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Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Nakhthiran N, 20BME4056

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Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :d09d00f7518d6c940c2ff1e6f7ef017e Student ID :STU61544e1db442f1632914973 PRINCIPA Kumarasamy C

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All India Council for Technical Education



Virtual Internship **Completion** Certificate

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M.Kumarasamy College of Engineering (Autonomous)

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Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills

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PRINCIPA:

Sumarasamy College



Certificate ID :2fe927e618f53581dbc7664f36ff2ede Student ID :STU61546af2b1b1c1632922354





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Virtual Internship Completion Certificate

This is to certify that

NITHISH T

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

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Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :b5aef0884d589e158de7e65290dd54f5

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Virtual Internship Completion Certificate

This is to certify that

PARTHASARATHY T

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

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Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :2bb503e339052c07b4df2a0db4998f64 Student ID :STU61512ad45db961632709332 ATTESIEL









Virtual Internship Completion Certificate

This is to certify that

20BME4061 MECH-B

PRADEEP P

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

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Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills

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Certificate ID :eb20f027a136c736d0ff7d2116bf9149 Student ID :STU615451b1a2ed51632915889

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प्रौद्यांगिकी के लिए राष्ट्रीय शैक्षणिक सहयोग

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M.Kumarasamy College of Engineering

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during Oct - Dec 2021

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Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills

rester



Certificate ID :e55a5109d822f513c852bcf2c9ef9c40 Student ID :STU614edc61b8eba1632558177









Virtual Internship Completion Certificate

This is to certify that

SANJAI.R

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

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Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

20BME4069 МЕСН -В

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills

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Certificate ID :ef29c02dc896bc847c5007c9ad0657f2 Student ID :STU615476a5a05341632925349

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Virtual Internship Completion Certificate

This is to certify that

SIBI.M

20BME 7074

MECH -A

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M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

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Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills

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Certificate ID :0f2fe93937be165759a005c2f3703c29 Student ID :STU62d654acd490e1658213548





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SRI SABHARI D.P

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

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Ana Howes Global Head of Education Services Blue Prism

Shri Buddha Chandrasekhar

Chief Coordinating Officer (CCO)

NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills



Certificate ID :3d42241786223ca85f755289b5b0d1f6 Student ID :STU61553803e2ae41632974851







Virtual Internship Completion Certificate

This is to certify that

SRI SABHARI D P

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Al-ML Virtual Internship

during July - Sep 2022

Supported By aWS academy

Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE



Certificate ID 0e903401ede973fc6aa7bf2f1ddbee77 Student ID STU61553803e2ae41632974851

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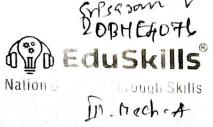
Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkilts



शक्षणिक सहयोग National Educational Alliance for Technology



अखिल भारतीय तकनीकी शिक्षा परिषद All India Council for Technical Education





Virtual Internship Completion Certificate

This is to certify that

SRI SARAN V

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

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Ana Howes Global Head of Education Services Blue Prism

Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills

TESLED



Certificate ID :c07cde7d3817fd31b7239f6f60f017f4 Student ID :STU6155d86fee4901633015919

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अखिल भारतीय तकनीकी शिक्षा परिषद् All India Council for Technical Education



Virtual Internship Completion Certificate

This is to certify that

20BME4077

MECH -B

SRIVISHNU.R

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

during December 2022 - February 2023

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Shri Buddha Chandrasekhar Chief Coordinating Officer (CCO) NEAT Cell, AICTE

Dr. Satya Ranjan Biswal Chief Technology Officer (CTO) EduSkills

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Certificate ID :1fbaf25406232e405cdb10cf82fa6695 Student ID :STU615479bc828d41632926140





Sudhalas A) JOBME 4019

MECH-'A'

Nation Building Through Skills

BeduSkills

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Virtual Internship Completion Certificate

This is to certify that

SUDHAKAR A

M.Kumarasamy College of Engineering (Autonomous)

has successfully completed 10 weeks

Robotic Process Automation (RPA) Virtual Internship

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Certificate ID :00695a1783d7946b1b949e4df1908ad1 Student ID :STU615469ae72a541632922030





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Certificate ID :072496f8e169a1aaf07200c6765e6add Student ID :STU6155de1d597611633017373

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Certificate ID :76f3074a0c918a6186a8da53b6a0dc08 Student ID :STU623016467ab671647318598

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Certificate ID :078638a4a258c1b73f72f123dd5b2fde Kuma Student ID :STU6230169d31eb41647318685 "hal

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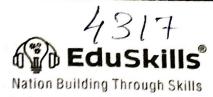
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Certificate ID :bb101582ac4e9562c41b4cd5823d445b Student ID :STU636912fb46f261667830523 PRINCIPAS. M Rumarasamy College of Engineering "hatavapatavam Karn (* 101 * 2

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Certificate ID :08cae949ec458410fec8d70b95a505c3 Student ID :STU62d64fe87af141658212328 PRINCIPAL Wumarasamy College of Engineerin Thulavanalavam Karit Con





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Certificate ID :89a28c3d8805f6971271dada59629747 Student ID :STU62d65182945231658212738

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Certificate ID :547e0dba7bd7fe28bb6b92df8484d401 Student ID :STU62d65bd33cf6e1658215379

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Certificate ID :6099228c5bdf9a31958b10a1188660ab Student ID :STU62d653b63d3b31658213302 PRINCIPA: H Kumarasamy College o

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Certificate ID :bb95428fe67b8e2b909ff27896a9b96c Student ID :STU62d66de3034d11658220003

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Certificate ID :39b40cd0d20a2155514fd6324bf8b7b1 Student ID :STU636a349c7ea771667904668 M. Rumarasəmy College o "həlavənəlavənin y

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Dr. Satya Ranjan Biswal Chief Technology Officer (CTO)



Certificate ID :d4188340f76399473515cba8251061de Student ID :STU636a45b86331b1667909048 PRINCIPAS. M Rumarasamy College of Cammeeria. Phalavapalayam Karu & (0) 13

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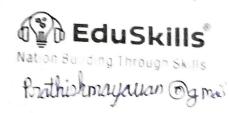
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Certificate ID:3767af2c61a5e4563051857c89704e63 Student ID:STU636a37fe8baa51667905534

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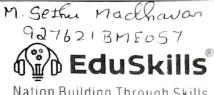


Certificate ID :057b6fb6d8e3d7f8592f7b12ce5de35d Student ID :STU6129b932a45ca1630124338

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Certificate ID :99fabbeda68daf6bddb05710ff91dcc1 Student ID :STU636a3698522311667905176

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Certificate ID :95eeae3b48c27a1a7f93d06d953f8af1 Student ID :STU636a081672b231667893270

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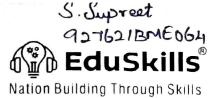
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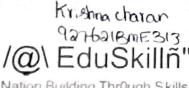


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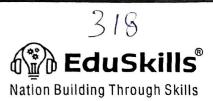
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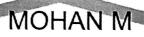






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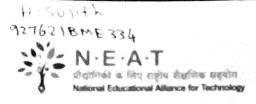
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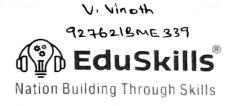
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Criterion 1: Curricular Aspects

1.3 Curriculum Enrichment

1.3.4.1: Number of students undertaking field projects / internships / student projects

Programme Name: B.E Mechanical Engineering.

Field Projects/Student Projects Proof





INVESTIGATION ON IMPLEMENTATION OF LEAN MANUFACTURING TECHNIQUES IN INDIAN TEXTILE INDUSTRY

A PROJECT REPORT Submitted by

SIVAKUMAR M (19BME4118) SUSEENTHRA MOORTHY K (19BME4129) VISHWA J (19BME4144)

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

IN

MECHANICAL ENGINEERING

M KUMARASAMY COLLEGE OF ENGINEERING, KARUR ANNA UNIVERSITY : CHENNAI 600 025

APRIL 2023

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M.KUMARASAMY COLLEGE OF ENGINEERING,KARUR BONAFIDE CERTIFICATE

Certified that this project report " **INVESTIGATION** ON IMPLEMENTATION OF LEAN MANUFACTURING TECHNIQUES IN INDIAN TEXTILE INDUSTRY " is the bonafide work of "SIVAKUMAR M (19BME4118), SUSEENTHRA MOORTHY K (19BME4129), VISHWA J (19BME4144)" who carried out the project work during the academic year 2022 - 2023 under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr. M .Mohan Prasad, M.E.,MBA, Ph.D HEAD OF THE DEPARTMENT Department of Mechanical Engineering M .Kumarasamy College of engineering, Thalavapalayam , Karur.

Dr. M. Mohan Prasad, M.E.,MBA, Ph.D SUPERVISOR Department of Mechanical Engineering M .Kumarasamy College of engineering, Thalavapalayam , Karur.

This project report has been submitted for the End Semester Project Viva voce Examination held on 12 - 04 - 2123.

EXTERNAL EXAMINE

ii

DECLARATION

We affirm that the Project titled "INVESTIGATION ON IMPLEMENTATION OF LEAN MANUFACTURING TECHNIQUES IN INDIAN TEXTILE INDUSTRY " being submitted in partial fulfilment of for the award of Bachelor of Engineering in Mechanical Engineering, is the original work carried out by us. It has not formed the part of any other project or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

NAME OF THE STUDENT

SIGNATURE OF STUDENT

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(19BME4118)

SUSEENTHRA MOORTHY K (19BME4129)

VISHWA J

K. Suscenthra Moorthy J. Visheso (19BME4144)

SIGNATURE OF SUPE RVISOR

(WITH DATE)

INSTITUTION VISION & MISSION

Vision

✤ To emerge as a leader among the top institutions in the field of technical education.

Mission

Produce smart technocrats with empirical knowledge who can surmount the global challenges.

 Create a diverse, fully-engaged, learner-centric campus environment toprovide quality education to the students.

Maintain mutually beneficial partnerships with our alumni, industry and professional associations.

DEPARTMENT VISION, MISSION, PEO, PO & PSO

Vision

To create globally recognized competent Mechanical engineers to work in multicultural environment.

Mission

- To impart quality education in the field of mechanical engineering and to enhance their skills, to pursue careers or enter into higher education in their area of interest.
- ✤ To establish a learner-centric atmosphere along with state-of-the-art research facility.
- To make collaboration with industries, distinguished research institution and to become a center of excellence.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

The graduates of Mechanical Engineering will be able to

- PEO1: Graduates of the program will accommodate insightful information of engineering principles necessary for the applications of engineering.
- ↔ PEO2: Graduates of the program will acquire knowledge of recent trends in

v

technology and solve problem in industry.

- ✤ PEO3: Graduates of the program will have practical experience and interpersonal skills to work both in local and international environments.
- ✤ PEO4: Graduates of the program will possess creative professionalism, understand their ethical responsibility and committed towards society.

PROGRAM OUTCOMES

The following are the Program Outcomes of EngineeringGraduates: 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 modeling to complex engineering activities with an understanding of the limitations.
- 6. The engineer and society: Apply reasoning informed by the contextual knowledgeto assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

vi

- 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 memberor 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 amember 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 toengage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

The following are the Program Specific Outcomes of Engineering Graduates: The students will demonstrate the abilities

- Real world application: To comprehend, analyze, design and develop innovative products and provide solutions for the real-life problems.
- 2. Multi-disciplinary areas: To work collaboratively on multidisciplinary areas andmake quality projects.
- 3. Research oriented innovative ideas and methods: To adopt modern tools, mathematical, scientific and engineering fundamentals required to solve industrial and societal problems.

vii

Cos	COURSESTATEMEN T	BLOOMS LEV EL	PO 1	P0 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	P0 9	PO 10	PO 11	PO 12	PS 01	PS O2	PS 03
1	Formulate a real world problem, identify the requirement and develop the design solutions.	K3	3	3	3			3	3	3	3	3			3	3	3
	Identify technical ideas, strategies and methodologies	К3	3	3	3			3	3	3	3	3			3	3	3
3	Utilize the new tools, algorithms, techniques that contribute to obtain the solution of the project	K4	3	3	3	3	3	3	3	3	3	3		3	3	3	3
4	Test and validate through conformance of the developed prototype and analysis the cost- effectiveness.	K4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	Prepare report and present oral demonstration	K4	3							3	3	3		3	3		3
	Average		3	3	3	:	3	3	3	3	3	3	3	3	3	3	3

MAPPING OF PO & PSO WITH THE PROJECT OUTCOME

viii

ACKNOWLEDGEMENT

Our sincere thanks to Chairman Thiru. M. Kumarasamy and Secretary Dr.K.Ramakrishnan, of M Kumarasamy College of Engineering for providing extraordinary infrastructure, which helped us to complete the project in time.

It is a great privilege for us to express our gratitude to our esteemed Principal **Dr.B.S. Murugan M.Tech, Ph.D** for providing us right ambiance for carrying out the project work.

We would like to thank **Dr. M. Mohan Prasad M.E, MBA, Ph.D.**, Professor and Head, Department of Mechanical Engineering, for their unwavering moral support throughout the evolution of the project.

We offer our whole hearted thanks to our internal guide **Dr.M.Mohan Prasad M.E, MBA, Ph.D.**, Department of Mechanical Engineering, for his constant encouragement, kind cooperation, valuable suggestions and support rendered in making our project a success.

We offer our whole hearted thanks to **Dr. R. Balamurugan M.E., Ph.D.**, our project coordinator, Department of Mechanical Engineering, for his constant encouragement, kind co-operation, valuable suggestions and support rendered in making our project a success.

We glad to thank all the **Teaching and Non teaching** Faculty Members of Department of Mechanical Engineering for extending a warm helping hand and valuable suggestions throughout the project.

Words are boundless to thank **Our Parents and Friends** for their constant encouragement to complete this project successfully.

iv

ABSTRACT

The research is focused on evaluate the efficacy of the lean model on textile industry in Tamil Nadu. Through this concept of lean manufacturing has provide a good result in continuous improvement in textile and helpful to trace the motion on some particular process. There is however, interest in extending lean layout to the process industries because of its dramatic results in the discrete sector. We argue that implement the lean techniques in all textile industries in different lean techniques. In this research we are choosing one of the textile industry which located in South India. In that industry we analyse and study the process of involving the industry layout to make an effective production and reduce the over processing. In changing the layout, the lee timing is reducing from 6.25 mins to 4.40 min per lot. (1 lot = 12 pieces). The results of this study that we are suggest to implement in order for the lean model and change the layout of the textile industry.

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INTRODUCTION

The belief that increasing plant capacity alone can improve productivity is no longer valid. Small changes that require little or no investment can now result in significant increases in productivity by applying scientific management theories. As a result, by implementing such principles, which include Lean principles, we hope to increase productivity in an industry that has not yet implemented such techniques. Lean manufacturing, lean enterprise, or lean production, often referred to simply as "Lean," is a manufacturing practise that considers the expenditure of resources for any purpose other than the creation of value for the end customer to be wasteful and thus a target for elimination. As a result of employing this concept, all resources that do not add value to a product, i.e., the "waste", have to be identified and are cut down as much as possible.

The types of "waste" include:

- Transport (moving products that are not actually required to perform the processing)
- Inventory (all components, work in process and finished product not being processed)
- Motion (people or equipment moving or walking more than is required to perform the
- processing)
- Waiting (waiting for the next production step)
- Overproduction (production ahead of demand)
- Over Processing (resulting from poor tool or product design creating activity)
- Defects (the effort involved in inspecting for and fixing defects)

1.1 A BRIEF HISTORY ON WASTE REDUCTION THINKING

The avoidance of waste has a long history. In fact many of the concepts now seen as key to lean have been discovered and rediscovered over the years by others in their search to reduce waste. Lean builds on their experiences, including learning from their mistakes.

1.1.1 PRE-20TH CENTURY

Most of the basic goals of lean manufacturing are common sense, and documented examples can be seen as early as Benjamin Franklin. Poor Richard's Almanac says of wasted time, "He that idly loses 5s. worth of time, loses 5s., and might as prudently throw 5s. into the river." He added that avoiding unnecessary costs could be more profitable than increasing sales: "A penny saved is two pence clear. A pin a-day is a groat a-year. Save and have."

Again Franklin's The Way to Wealth says the following about carrying unnecessary inventory. "You call them goods; but, if you do not take care, they will prove evils to some of you. You expect they will be sold cheap, and, perhaps, they may [be bought] for less than they cost; but, if you have no occasion for them, they must be dear to you. Remember what Poor Richard says, 'Buy what thou hast no need of, and ere long thou shalt sell thy necessaries.' In another place he says, 'Many have been ruined by buying good penny worths'." Henry Ford cited Franklin as a major influence on his own business practices, which included Just-in-time manufacturing.

The concept of waste being built into jobs and then taken for granted was noticed by motion efficiency expert Frank Gilbreth, who saw that masons bent over to pick up bricks from the ground. The bricklayer was therefore lowering and raising his entire upper body to pick up a 2.3 kg (5 lb.) brick, and this inefficiency had been built into the job through long practice. Introduction of a non-stooping

LITERATURE SURVEY

Rajenthirakumar (2011) investigated that Lean manufacturing is an applied methodology of scientific, objective techniques in which a process of minimal non-value-adding activities is achieved. This paper identified a value stream mapping framework (VSM) in which present and future value stream maps are built to enhance the production process. It is verified that cycle time is significantly decreased and cycle output is improved. The output process has been streamlined thus reducing many non-value-added operations such as bottlenecking time, waiting time, handling time for materials etc.

Preetinder Singh Gill (2012) researched the Value Stream Mapping (VSM) requires reviewing existing literature about the use of the VSM technique in emergency rooms / departments of hospitals in a research effort.

Seyed Mohammadali Motavallian (2013) examined how Value Stream Mapping (VSM) would help to identify key specific goals. The findings are based on a step-by-step process that lets companies implement VSM in the product development context.

Muruganantham (2014) studied that Implementing VSM with current status maps and future state maps in a casting foundry. The production process direction is visualized with a case study in one of the casting industry by monitoring the entire process, wastage that influences the cycle time is detected and its causes are studied. A future map of the state value stream is being developed and suggestions for improvement are being made. VSM proves to be a useful technique to minimize the cycle time and increase the productivity.

Nor Azian Abdul Rahman (2013) has researched that in Japan, Kanban method is one of the lean manufacturing methods with limited inventory and reduced

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EXPERIMENTEL WORK

5.1 ABOUT THE INDUSTRY

The industry that we have chosen is in Palani, Tamil Nadu. Their main product that has been produced is woolen fabric outwear, among that the model X has been produced to the most. So we have decided to take the model X as the sample to be carried in our experiment.

The layout of the industry:

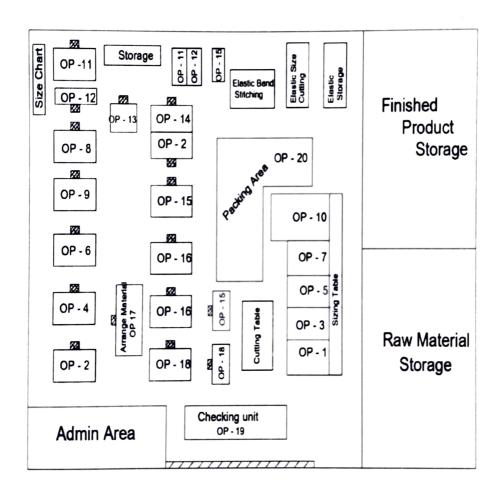


Figure 5.1: layout of the industry

RESULT AND DISCUSSION

The throughput time of the lean design is high relative to other forms of layout, and can also be the outcome of the work in the module phase, in order to increase the time the organization should discuss line balancing or do time tests and system tests in order to enhance the throughput time of the system. If workers do not have the requisite experience, they will fail to recognize the changes that they can make. Worse still, undertrained workers can unintentionally trigger delays because they may not realize the whole manufacturing cycle and how a shift or modification saves them a minute causes 7 min of extra work for someone else. It is also important to have proper training and education. Improved changeover time results in reduction of regular hours generated according to experts, currently at the lean model there is a changeover period of an average of 20 min which can be increased by planning for system setting and preparation of team members before the changeover so as to reduce the changeover period, and the researcher would also like to recommend an task review to test the reasons. Number of products in work in the progress of the lean style is comparatively weaker than the straight line model. According to the lean theory, work in advance is a mistake and masks issues. If that is that, issues can be found easily and addressed in a timely manner. Unnecessary movements, absences, bad line spacing were found as the reasons for this. Time and gesture research should be performed to establish a clear visual cycle such that repetitive gestures can be avoided. Let multi-skilled workers work in a secure, efficient production environment that reliably delivers a premium product within the negotiated timeline. Job intervals should be made to keep workers aware of each level of production. The research found differences in housekeeping procedures in the configuration, no guidelines were developed to preserve supplies, and the 22

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CHAPTER 7 CONCLUSION

1. A U-shaped material flow was used to optimize the space used with greater control over production processes and direct communication with previous and subsequent activities to the area under study.

2. Systematic Layout Planning was applied distribution plant where a feasible distribution solution was generated that was obtained, after having evaluated alternatives of solution in conjunction with the owner of the company and the production personnel.

3. Methods the quantitative CRAFT and CORELAP with the purpose of contrasting the solution obtained with the SLP method, making the three methods of distribution in plant coincide in their results.

4. The proposal of distribution in final plant allowed to define the trajectory of the object of work of the area of study, distributing the spaces of work by the creation of departments clearly identified and ordered.

5. The proposed plant distribution was evaluated in a qualitative and quantitative way, where improvements were visualized by reducing the cost of transport of the work object by 28.54%.

Table 7.1 Cost reduction percentage

Plant distribution	Transport costs of the	Cost reduction
	work object	percentage
Current	1758	28.54%
Proposal	1256	

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INTERNSHIP CERTIFICATE

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FOR SMK GARMENTS

For Such GARMENTS Authorized Signatory.





REDUCE THE REJECTION JOB IN VERTICAL CENTRE SMART 430A

A PROJECT REPORT

Submitted by

SELVAKUMAR P SHARMA S VASANTH M (19BME4112) (19BME4114) (19BME4136)

in partial fulfillment for the award of the degree

of

BACHELOR ENGINEERING

in

MECHANICAL ENGINEERING

M.KUMARASAMY COLLEGE OF ENGINEERING, KARUR

ANNA UNIVERSITY: CHENNAI 600025

APRIL - 2023

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M.KUMARASAMY COLLEGE OF ENGINEERING, KARUR

BONAFIDE CERTIFICATE

Certified that this project **report "REDUCE THE REJECTION JOB IN VERTICAL CENTRE SMART 430A"** is the bonafide work of "SELVAKUMAR P(19BME4112), SHARMA S(19BME4114), VASANTH M(19BME4136)" who carried out the project work during the academic year 2022–2023 under my supervision. Certified further, that to the best of my knowledge the work reportedherein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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Dr. S. Padmavathy M.E., MBA., Ph.D., SUPERVISOR Associate Professor Department of Mechanical Engineering M. Kumarasamy College of Engineering, Thalavapalayam, Karur-639113

This project report has been submitted for the end semester project viva voce Examination held on $\frac{12.04.2023}{2023}$

EXTERNAL

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M.KUMARASAMY COLLEGE OF ENGINEERING

DECLARATION

We affirm that the project titled "**REDUCE THE REJECTION JOB IN VERTICAL CENTRE SMART 430A**" being submitted in partial fulfillment of for the award of Bachelor of Engineering in Mechanical Engineering, is the original work carried out by us. It has not formed the part of any other project or dissertation the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Student name

SELVAKUMAR P
 SHARMA S

3. VASANTH M

Signature

Sharma M.22

Name and Signature of the supervisor with date Dr. S. PADMAVATAY

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- ✤ To establish a learner-centric atmosphere along with state-of-the-art research facility.
- To make collaboration with industries, distinguished research institution and to become a center of excellence.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

The graduates of Mechanical Engineering will be able to

- PEO1: Graduates of the program will accommodate insightful information of engineering principles necessary for the applications of engineering.
- ↔ PEO2: Graduates of the program will acquire knowledge of recent trends in

v

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- ✤ PEO4: Graduates of the program will possess creative professionalism, understand their ethical responsibility and committed towards society.

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- 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 modeling to complex engineering activities with an understanding of the limitations.
- 6. The engineer and society: Apply reasoning informed by the contextual knowledgeto assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

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- 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 memberor 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 amember 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 toengage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

The following are the Program Specific Outcomes of Engineering Graduates: The students will demonstrate the abilities

- Real world application: To comprehend, analyze, design and develop innovative products and provide solutions for the real-life problems.
- 2. Multi-disciplinary areas: To work collaboratively on multidisciplinary areas andmake quality projects.
- 3. Research oriented innovative ideas and methods: To adopt modern tools, mathematical, scientific and engineering fundamentals required to solve industrial and societal problems.

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Cos	COURSESTATEMEN T	BLOOMS LEV EL	PO 1	P0 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	P0 9	PO 10	PO 11	PO 12	PS 01	PS O2	PS 03
1	Formulate a real world problem, identify the requirement and develop the design solutions.	K3	3	3	3			3	3	3	3	3			3	3	3
	Identify technical ideas, strategies and methodologies	К3	3	3	3			3	3	3	3	3			3	3	3
3	Utilize the new tools, algorithms, techniques that contribute to obtain the solution of the project	K4	3	3	3	3	3	3	3	3	3	3	. •	3	3	3	3
4	Test and validate through conformance of the developed prototype and analysis the cost- effectiveness.	K4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	Prepare report and present oral demonstration	K4	3							3	3	3		3	3		3
	Average		3	3	3	:	3	3	3	3	3	3	3	3	3	3	3

MAPPING OF PO & PSO WITH THE PROJECT OUTCOME

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Our sincere thanks to Thiru. M.Kumarasamy, Chairman and Dr. K. Ramakrishnan, Secretary of M.Kumarasamy College of Engineering for providing extra ordinary infrastructure, which helped us to complete the project in time.

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We offer our whole hearted thanks to our internal guide Dr.S.Padmavathy., M.E.,Ph.D., Associate professor, Department of Mechanical Engineering, for his constant encouragement, kind co-operation, valuable suggestions and support rendered in making our project a success.

We offer our whole hearted thanks to our project coordinator **Dr. R. Balamurugan M.E**, **Ph.D.**, **Department** of Mechanical Engineering, for his constant encouragement, kind cooperation, valuable suggestions and support rendered in making our project a success.

We glad to thank all the Teaching and Non-Teaching Faculty Members of Department of Mechanical Engineering for extending a warm helping hand and valuable suggestions throughout the project.

Words are boundless to thank Our Parents and Friends for their constant encouragement to complete this project successfully.

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ABSTRACT

Our Project is to reduce the rejection job during the production of support rear bracket that is used in the Navy Trucks. It is made up of Industrial carbon. The fault parameters of the job is thoroughly analyzed and is sent for correction. The correction process starts with measurement of the size of the job. When the job doesn't fit to the specifications desired, the correction process takes place. This is done with the assistance of G code and M code. The G code instructs the machine elements with the motion and function of the VMC machine. The M code helps in activating the Programmable Logic Unit of the VMC machine. As soon as the code finishes running, the job is sent for testing. Now the job is sure to meet the desired specification. The aim of our project is to reduce the number of jobs rejected. As the overall purpose of the project is to increase the production of the job. This could be achieved by increasing the RPM of the VNC machine. As the production timing lowers down, it increases the rate of the production. When the production time decreases the life of the insert goes down. The insert is frequently changed, but this is overcome by the overall increased production rate of the VNC machine. The proportionality between the RPM and production is recorded down and most appropriate method of increasing production is chosen.

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INTRODUCTION

Vertical Machining has been around in its most basic form for more than 150 years. Yet, it's still one of the newest forms of machining technology (turning/lathes is the oldest). The process of "milling" entails a rotating cutter, ordrilling bit, and a movable work table, which the workpiece is affixed to.

The cutter is attached to and rotated in a housing called the "spindle." Through the sharpness of the tool and force of the table pushing the material into the cutter, the material yields and is cut or shaved away as desired. The axis of force can be up/down (referred to as the Z-Axis) left/right (referred to as the X-Axis), or front toback (referred to as the Y-Axis).

VMCs can be equipped with multiple adjustments. For example, there are many angles of approach available as well as rotary and other positioning devices up on the worktable. Later renditions of the VMC design added power and hydraulic feeding devices to make the system more automated and, eventually, computerized controls were added to allow for more automation in operation, repeatability, tool selection/changing and contour control. These new CNC's took the "milling" machine to a new level of productivity and, thus, the term VMC (Vertical Machining Center) was born.

VMCs are utilized primarily (although not solely) as metal cutting machines that remove steel, aluminum or other hard materials—thus, shaping a raw block of material into a precision formed, or "machined" surface.

VMCs can be utilized for not only cutting, but also drilling, carving, engraving, tapping, countersinking, chamfering and many other applications. Because of their versatility and relatively low cost, they are extremely popular machines that are found in shops all over the world.

CONCLUSION

The aim of the project is to reduce the job rejected during the process of manufacturing. We have taken the support rear bracket of a Navy truck and we have tried our best to minimize the number of job rejected. For this as the first step we have thoroughly analyzed the measurement of the job. The faulty parameters are noted down and is sent for correction. The process is done by the VMC machine. The VMC machine has all the needed programs to correct faulty materials and it has the opening to customize code. The G code and M codes of machining the faulty items is uploaded into the machine. The input parameters generally include size, width, length and height. The job is then loaded onto the machine and the correction process takes place. Every single step involving the process is carefully noted down for further reference. The faults occurring during the process is corrected then and there. This process has helped material from being wasted as a product due to faults that can be corrected. After the machine finishes correcting the job, once again the materials are sent for checking. The second round of testing establishes a comparison between faulty parameters before and after the correction processes. As the products are corrected, they are sent for future processing. This method enhances the process of rejection of production. And secondly, we have analyzed the production rate by increasing the RPM. Though it reduced the lifespan of the insert, in an overall concern it helps in increasing the production rate of the support rear bracket.

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RegNo.19BME4114) and SELVAKUMAR P (RegNO.19BME4112) from

Kumarasamy College Of Engineering-Thalavapalayam, Karur has successfully completed the

NDUSTRIAL PROJECT in our organization for the period from (20-02- 2023 to 15-03-2023).

ve wish him all the best for the future endeavors.

as utolec Thanking You ivision AGER HUMAN RESOURCES





FABRICATION OF AUTOMATIC TRIP HOSE WINDING MACHINE

A PROJECT REPORT

Submitted By

NAVEEN M19BME4078NISHANTH S19BME4081SANTHOSH RISHIHARAN M19BME4105

in partial fulfillment for the award of the degree of

BACHELOR OF ENGINEERING

in

MECHANICAL ENGINEERING

M.KUMARASAMY COLLEGE OF ENGINEERING, KARUR

ANNA UNIVERSITY: CHENNAI 600 025

APRIL - 2023

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M.KUMARASAMY COLLEGE OF ENGINEERING, KARUR

BONAFIDE CERTIFICATE

Certified that this Project Report **"FABRICATION OF AUTOMATIC TRIP HOSE WINDING MACHINE"** is the bonafide work of **"NAVEEN M (19BME4078),NISHANTH S (19BME4081) AND SANTHOSH RISHIHARAN M(19BME4105)"** who carried out the project work during the academic year 2022– 2023 under my supervision. Certified further, that to the best of my knowledgethe work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr.M.MOHAN PRASAD M.E.,MBA.,Ph.D., HEAD OF THE DEPARTMENT, Associate professor,

Department of Mechanical Engineering M.Kumarasamy College of Engineering, Karur -639113.

SIGNATURE Dr.K.RAJU M.E.,Ph.D., **SUPERVISOR**, Assistant professor, Department of Mechanical Engineering M.Kumarasamy College of Engineering, Karur – 639113.

This project report has been submitted for the end semester project vivavoce

Examination held on 12/04/2023

EXTERNAL

DECLARATION

We affirm that the Project report titled FABRICATION OF AUTOMATIC TRIP HOSE WINDING MACHINE being submitted in partial fulfillment for the award of Bachelor of Engineering in Mechanical Engineering, is the original work carried out by us. It has not formed the part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

STUDENT NAME NAVEEN M NISHANTH S SANTHOSH RISHIHARAN M SIGNATURE M.Name S.N.H. M. S.P.P.

Name and signature of the supervisor with date $(\mathbf{w}, \mathbf{v}, \mathbf{\mathcal{P}}, \mathbf{\mathcal{P}}, \mathbf{\mathcal{P}})$

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- 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.
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- 3. Research oriented innovative ideas and methods: To adopt modern tools, mathematical, scientific and engineering fundamentals required to solve industrial and societal problems.

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Cos	COURSESTATEMEN T	BLOOMS LEVEL	PO 1	P0 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	P0 9	PO 10	PO 11	PO 12	PS 01	PS O2	PS 03
1	Formulate a real world problem, identify the requirement and develop the design solutions.	K3	3	3	3			3	3	3	3	3			3	3	3
	Identify technical ideas, strategies and methodologies	К3	3	3	3			3	3	3	3	3			3	3	3
3	Utilize the new tools, algorithms, techniques that contribute to obtain the solution of the project	K4	3	3	3	3	3	3	3	3	3	3	. •	3	3	3	3
4	Test and validate through conformance of the developed prototype and analysis the cost- effectiveness.	K4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	Prepare report and present oral demonstration	K4	3							3	3	3		3	3		3
	Average		3	3	3	:	3	3	3	3	3	3	3	3	3	3	3

MAPPING OF PO & PSO WITH THE PROJECT OUTCOME

ABSTRACT

In the 21st-century agriculture field is growing in all countries including India like new machinery, Hybrid Seeds, etc., In India, Drip irrigation plays a major role in agriculture because it reduces water, needs low manpower, reduces weed growth, and other benefits. In drip irrigation, farms need to be plowed after the harvesting of plants which needs manpower. Nowadays few peoples are moving to cities because of white collar jobs. So farmers are moving to pieces of machinery where DC motor operated machine, hydraulically powered machine is available for winding the trip hose. Due to need of electricity to use DC motor operator machinery with heavy weight and thus battery is needed and one person who serve the wire in fields at various conditions is also needed apart from the operation. Since no suitable machines are available, farmers are in need of easy mechanism, easy operated, weightless, easy movable trip hose winding machines. Hence we come with a solution called Automatic trip hose winding machine, working is simple without electricity. Working as when we push the machine the shaft rotates the wheels rotates winding wheels also with the help of chain drive connected with the wheels. It's easy working process makes farmers easily winding the trip hose in farmland.

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INTRODUCTION

1.1. GENERAL

This project is a part of our curriculum as in step with present syllabus which uses to use our realistic information. The moto of the assignment is to assist the farmers inside the field of agricultural. it's far a winder gadget that helps the farmers to wind the trip hose. A winding machine or winder is a system for wrapping string, cord, cord, thread, yarn, rope, twine ribbon, tape, and so forth. Onto a spool, bobbin, reel, and many others., inside the contemporary world all fields are growing quicker in that agriculture subject additionally coming in contemporary technologies like new equipment, hybrid seeds and many others., amongst them in now a days a lot of farmers use journey irrigation for saving the water and different convenient types.

1.2. THEORY

A winding gadget or winder is a gadget for wrapping string, cord, cord, thread, yarn, rope, cord ribbon, tape, and many others. Onto a spool, bobbin, reel, and so on., within the contemporary global all fields are developing quicker in that agriculture discipline additionally coming in current era's like new equipment, hybrid seeds and many others., among them in now a days lots of farmers use journey irrigation for saving the water and different convenient sorts.

In that ride hose is winded whilst the garden is ploughed so that during trip hose manufacturing groups has electric kind DC motor winding machines however farmers has no machine to winding the experience hose.

Motor type winding machines are not suitable for farmers so that we include solution computerized ride hose winding system while we push the winding machine it robotically rotates the trip hose winding hose reel and trip hose is without problems winded.

4.2. PARTS OF TRIP HOSE WINDING MACHINE

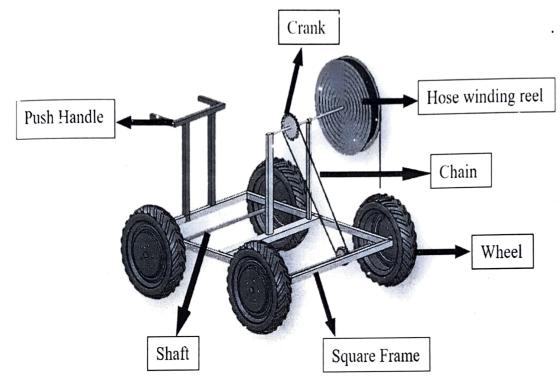


Fig .4.2 - Parts of Trip Hose Winding Machine

4.3. MAJOR COMPONENTS

- 1. DISC
- 2. SPROCKET
- 3. CHAIN SPROCKET
- 4. WHEEL
- 5. SHAFT
- 6. BALL BEARING
- 7. METAL FRAME
- 8. ROLLER CHAIN

CHAPTER 5 WORKING

1. WORKING

In this Automatic trip hose winding machine the four wheels are moving so it is suitable in all farm lands and it is simple working mechanism so it is suitable for farmers who are not well educated and there is no need to cliarging or no pull the wires to the field and DC motor winding machine can make fault when the motor is not working.

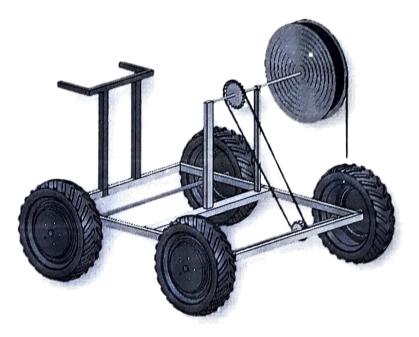


Fig. 5.1. Design of THWM

Our Automatic trip hose winding machine is made of four square frames, chain drive, driven wheel, drive wheel, winding Circle and four tyres suitable for agriculture land and other various procedures like bearings and etc in that various parts are been used the machine can built in one tyre or two tyres but the stability is not perfect when compared to four wheel balance.

RESULTS AND DISCUSSION

Our Automatic trip hose winding machine is different from DC motor operated trip hose winding machine it not need any power supply or batteries, if battery operated machine needs electricity to recharge but our machine not need electricity, and our machine need low maintenance like lubrication to bearing but DC motor operated machine needs high maintenance and that in many village areas people are not highly educated they don't know about battery maintenance like distilled water filling and etc but our machine also easy to operate by low educated people and DC motor operated trip hose winding machine has heavyweight because it needs to carry battery ,motor, gears and etc but our machine is low weight so that we can easily carry to all areas and that if DC motor operated machine needs electricity we cannot pull the wire to farm lands but thus requirement is not need in our machine, and if battery powered DC motor winding machine it need to charge daily when it used but our machine thus not need any charging procedures and cost wisely our machine was very low cost because in DC motor operated machine needs a battery, DC motor, Gears and etc,. It needs a roundly ten to fifteen thousand but our machine costs around seven thousand to eight thousand rupees and our machine can use in wet lands because of four tyres and low weight.



Fig.6.1- Photograph of fabricated THWM right view

CONCLUSION

The Automatic trip hose winding machine would allow winding the trip nose in field faster and easier it can be used by men, women, old people when we sk to farmers the available winding machine are not suitable for agriculture and here is no pull the electric wires in field and charging the battery daily, repair the notor etc and there are DC motor operated trip hose winding machine are not uitable for all farm lands and trip hose winding machine are easy to operate and rery low maintenance

We hope through our work atleast help to clarify the design of trip hose vinding machine hopefully in the modern world it is very helpful to farmers for vinding the trip hose in rural and village areas.

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THERMAL ANALYSIS OF FRICTION STIR WELDED JOINT

A PROJECT REPORT

Submitted by

PRASANTH S(19BME4090)MANOJ KUMAR P(19BME4062)MANIARASU S(19BME4059)

in partial fulfillment for the award of degree

of

BACHELOR OF ENGINEERING

in

MECHANICAL ENGINEERING

M.KUMARASAMY COLLEGE OF ENGINEERING, KARUR

ANNA UNIVERSITY : CHENNAI 600 025. APRIL – 2023

i

M.KUMARASAMY COLLEGE OF ENGINEERING,KARUR BONAFIDE CERTIFICATE

Certified that this project report **"THERMAL ANALYSIS OF FRICTION STIR WELDED JOINT"** is the bonafide work of **"PRASANTH S (19BME4090)**, **MANOJ KUMAR P (19BME4062)**, **MANIARASU S (19BME4059)"** who carried out the project work during the academic year 2022-2023 under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

12/4/2023

Dr.S.Saravanakumar M.E., Ph.D.,

Dr.M.Mohan Prasad M.E., MBA., Ph.D.,

HEAD OF THE DEPARTMENTSUPERVISORAssociate ProfessorAssistant ProfessorDepartment of Mechanical EngineeringDepartment of Mechanical EngineeringM.Kumarasamy College of EngineeringM.Kumarasamy College of EngineeringThalavapalayam, Karur-639113Thalavapalayam, Karur-639113

This project report has been submitted for the End Semester Project viva voce Examination held on 12.04.2023

EXTERN

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M.KUMARASAMY COLLEGE OF ENGINEERING DECLARATION

We affirm that the Project report titled **"THERMAL ANALYSIS OF FRICTION STIR WELDED JOINT"** being submitted in partial fulfillment for the award of Bachelor of Engineering in Mechanical Engineering, is the original work carried out by us. It has not formed the part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Student Name

Signature

1. PRASANTH S 2. MANOJ KUMAR P 3. MANIARASU S

P. nort

I certify that the declaration made above by the candidates is true to the best of my knowledge.

Name and Signature of the Supervisor with date (s. sara vara kuncur)

INSTITUTION VISION & MISSION

Vision

✤ To emerge as a leader among the top institutions in the field of technical education.

Mission

Produce smart technocrats with empirical knowledge who can surmount the global challenges.

 Create a diverse, fully-engaged, learner-centric campus environment toprovide quality education to the students.

Maintain mutually beneficial partnerships with our alumni, industry and professional associations.

DEPARTMENT VISION, MISSION, PEO, PO & PSO

Vision

To create globally recognized competent Mechanical engineers to work in multicultural environment.

Mission

- To impart quality education in the field of mechanical engineering and to enhance their skills, to pursue careers or enter into higher education in their area of interest.
- ✤ To establish a learner-centric atmosphere along with state-of-the-art research facility.
- To make collaboration with industries, distinguished research institution and to become a center of excellence.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

The graduates of Mechanical Engineering will be able to

- PEO1: Graduates of the program will accommodate insightful information of engineering principles necessary for the applications of engineering.
- ↔ PEO2: Graduates of the program will acquire knowledge of recent trends in

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technology and solve problem in industry.

- ✤ PEO3: Graduates of the program will have practical experience and interpersonal skills to work both in local and international environments.
- PEO4: Graduates of the program will possess creative professionalism, understand their ethical responsibility and committed towards society.

PROGRAM OUTCOMES

The following are the Program Outcomes of EngineeringGraduates: 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 modeling to complex engineering activities with an understanding of the limitations.
- 6. The engineer and society: Apply reasoning informed by the contextual knowledgeto assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

vi

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Cos	COURSESTATEMEN T	BLOOMS LEVEL	PO 1	P0 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	P0 9	PO 10	PO 11	PO 12	PS 01	PS O2	PS 03
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4	Test and validate through conformance of the developed prototype and analysis the cost- effectiveness.	K4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	Prepare report and present oral demonstration	K4	3							3	3	3		3	3		3
	Average		3	3	3	:	3	3	3	3	3	3	3	3	3	3	3

MAPPING OF PO & PSO WITH THE PROJECT OUTCOME

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ABSTRACT

Friction Stir Welding is a novel solid-state joining process that is both efficient, environmental friendly and versatile in its applications. Counted as one of the most significant developments in this scenario, Friction Stir Welding is used in the joining of high strength alloys which present difficulties with the conventional fusion techniques. As one most significant developments as far as metal joining is concerned, Friction Stir Welding is a solid state joining process that requires less energy as compared to conventional welding methods; no flux or gas is required hence making the Friction Stir Welding process does not involve the use of any filler metal hence any alloy can be joined without consideration of compatibility of composition as opposed to conventional welding methods where compatibility is an issue. In this study the different materials are selected for performing friction stir welding, the thermal characteristics of selected material is analyzed using ansys workbench software, from the obtained result best suitable material pair is selected for industrial applications.

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1.1 INTRODUCTION

Friction stir welding is a material joining process where two or more metal workpieces are joined by the friction heating and mixing of material in the plastic state caused by a rotating tool that traverses along the weld. FSW is considered to be the most significant development in metal joining in a decade. The friction stir welding machine is operated by a competent FSW operator who performs fully mechanized or automatic friction stir welding. The following modules main objective to give an overview of the FSW process. It starts with basic information about FSW and terminology, followed by advantages and disadvantages of this process, characterisation of welding equipment, tools and base materials. At the end of module, general concerns regarding the health and safety of the operators is described.

Friction stir welding is classified as a one of the solid-state welding techniques. It was invented and patented in 1991 by The Welding Institute (TWI) of the United Kingdom for butt and lap joining of ferrous, non-ferrous metals and plastics. It was initially applied to aluminium alloys, because of benefits, such as less sensitivity to contaminations, less distortion and improved strength and fatigue properties, compared to fusion welding. Implementation of FSW has occurred in industries such as automotive, aerospace, railway and maritime. It is being used increasingly to weld materials, which are traditionally considered to be not weldable, for example aluminium alloys 2XXX and 7XXX. Further studies aiming at widening the set of materials applicable for friction stir welding, which include Mg-, Cu-, Ti-, Al-alloy matrix composites, lead, stainless steels, thermoplastics and dissimilar materials.

The development of lightweight construction, materials, and design play important role in economy and fuel consumption. Road, railway, water and air transport is based on the use of aluminum and its alloys, because of economic and

4.6ANALYZING PROCEDURE

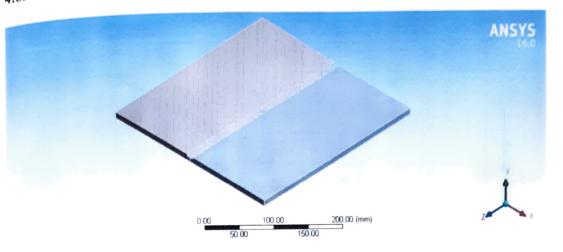


Figure .4.2.The model of weld sample is imported in ansys workbench environment

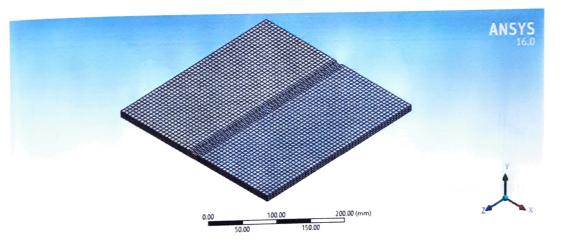


Figure .4.3. Meshed model

Nodes	39088
Elements	7448

Table .4.1.Detail of mesh

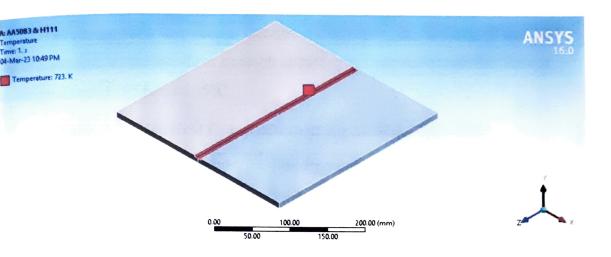


Figure .4.4.Temperature exerted during the FSW is assigned at the tool contacting region

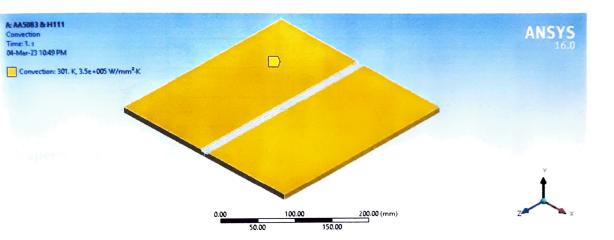


Figure .4.5.The other regions are selected and defined as convection region to transfer the heat generated to the surrounding

MATERIAL DETAILS

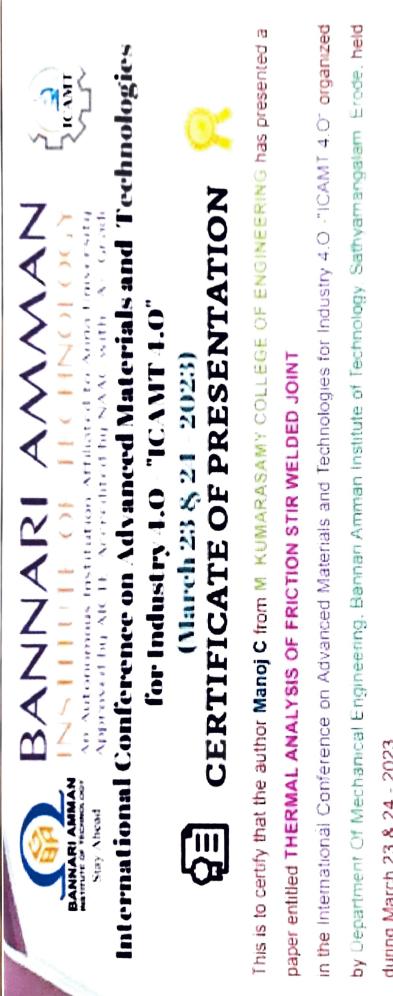
AA5083 (Aluminium alloy)

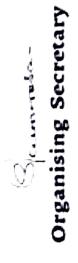
Aluminium 5083 is known for exceptional performance in extreme environments. Aluminium 5083 is highly resistant to attack by both seawater and industrial chemical environments.

CHAPTER-5

CONCLUSION

Stir Welding offers a cheap, efficient, versatile and Friction environmentally friendly option when compared to the conventional fusion echniques of welding. This paper has highlighted the mechanism of this echnique but also the critical research efforts that have imparted significantly ncreasing its application. Apart from saving the energy required for welding naterial, Friction Stir Welding also overcomes the problem of evaporation encountered during welding. Friction Stir Welding overcomes the problem of evaporation because it operates under temperatures that are well below the melting point of copper and zinc. Incorporating the component of electrical resistance will improve the quality of joints. Friction Stir Welding is performed in different material combination and process parameters including plunge rate, tool rotation speed and dwell time could be manipulated to optimize the weld strength of the weld. Friction Stir Welding of selected two dissimilar materials and standard common tool running at speed of 1000 rpm. We conducted thermal analysis on it, from the obtained results the sample AA5754 & C11000 gives better heat flux when compared to the other samples, selecting this sample for industrial application gives a better result.









Convenor

C tanking

during March 23 & 24 - 2023.





LASER WELDABILITY STUDIES ON DISSIMILAR STAINLESS STEELS

A PROJECT REPORT

Submitted by

- BARATHRAJAN K (19BME4009)
- BOOBESH M (19BME4012)

DINESH KUMAR S (19BME4024)

in partial fulfillment for the award of the

degree

of

BACHELOR OF ENGINEERING

in

MECHANICAL ENGINEERING

M.KUMARASAMY COLLEGE OF ENGINEERING, KARUR

ANNA UNIVERSITY: CHENNAI 600 025

APRIL 2023

i

M.KUMARASAMY COLLEGE OF ENGINEERING, KARUR

BONAFIDE CERTIFICATE

Certified that this project report "LASER WELDABILITY STUDIES ON DISSIMILAR STAINLESS STEELS "is the bonafide work of "BARATHAJAN K (19BME4009), BOOBESH M (19BME4012), DINESH KUMAR S (19BME4024)" who carried out the project work during the academic year 2022 – 2023 under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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INTERNAL EXAMINED

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ii

DECLARATION

We affirm that the Project titled "LASER WELDABILITY STUDIES ON DISSIMILAR STAINLESS STEELS" being submitted in partial fulfillment of for the award of Bachelor of Engineering in Mechanical Engineering, is the original work carried out by us. It has not formed the part of any other project or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Student name

Signature

- 1 BARATHRAJAN K
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- **3 DINESH KUMAR S**

4/2023 21

Name and signature of the supervisor with date $Dr. M \cdot BALAKR BHNAN$

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The graduates of Mechanical Engineering will be able to

- PEO1: Graduates of the program will accommodate insightful information of engineering principles necessary for the applications of engineering.
- ↔ PEO2: Graduates of the program will acquire knowledge of recent trends in

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technology and solve problem in industry.

- ✤ PEO3: Graduates of the program will have practical experience and interpersonal skills to work both in local and international environments.
- ✤ PEO4: Graduates of the program will possess creative professionalism, understand their ethical responsibility and committed towards society.

PROGRAM OUTCOMES

The following are the Program Outcomes of EngineeringGraduates: 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.
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- 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 modeling to complex engineering activities with an understanding of the limitations.
- 6. The engineer and society: Apply reasoning informed by the contextual knowledgeto assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

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- 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 memberor 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 amember 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 toengage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

The following are the Program Specific Outcomes of Engineering Graduates: The students will demonstrate the abilities

- Real world application: To comprehend, analyze, design and develop innovative products and provide solutions for the real-life problems.
- 2. Multi-disciplinary areas: To work collaboratively on multidisciplinary areas andmake quality projects.
- 3. Research oriented innovative ideas and methods: To adopt modern tools, mathematical, scientific and engineering fundamentals required to solve industrial and societal problems.

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Cos	COURSESTATEMEN T	BLOOMS LEVEL	PO 1	P0 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	P0 9	PO 10	PO 11	PO 12	PS 01	PS O2	PS 03
1	Formulate a real world problem, identify the requirement and develop the design solutions.	K3	3	3	3			3	3	3	3	3			3	3	3
	Identify technical ideas, strategies and methodologies	К3	3	3	3			3	3	3	3	3			3	3	3
3	Utilize the new tools, algorithms, techniques that contribute to obtain the solution of the project	K4	3	3	3	3	3	3	3	3	3	3		3	3	3	3
4	Test and validate through conformance of the developed prototype and analysis the cost- effectiveness.	K4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	Prepare report and present oral demonstration	K4	3							3	3	3		3	3		3
	Average		3	3	3	:	3	3	3	3	3	3	3	3	3	3	3

MAPPING OF PO & PSO WITH THE PROJECT OUTCOME

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ABSTRACT

Laser beam welding (LBW) is a welding technique used to join piecesof metal or thermoplastics using a laser. Joiningof steels to stainless steel can be used for producing stainless steel (430,409) bimetallic parts in a wide range of industrial areas. The purpose of this project is to study the laser weldability of dissimilar stainless steels. Stainless steels are widely used in various applications due to their excellent corrosion resistance, mechanical properties, and aesthetic appearance.

This project will focus on investigating the feasibility and quality of laser welding between different grades of stainless steels, such as different grades of ferritic stainless steels. The study will include an evaluation of the tensile, impact, bend, hardness and microstructural properties of welded joints. The aim is to determine the optimum welding parameters, including laser power, welding speed, and shielding gas, to achieve high-quality welds.

The project's outcomes will provide valuable insights into the laser weldability of dissimilar stainless steels and help to develop appropriate welding techniques and procedures for joining these materials. This research has significant implications of various testings of Tensile testing, bending test, impact test,Optical Microscopy (OM) Scanning Electron microscopy (SEM).

KEYWORDS: Laser beam welding (LBW), stainless steel (430,409), Tensile testing, bend test, impact test Optical Microscopy (OM) Scanning Electron microscopy (SEM).

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CHAPTER 1

INTRODUCTION

1.1 STAINLESS STEEL 430

Laser welding could be used to join numerous combinations of metals such as similar metals, dissimilar metals, alloys, and non-metals. In the present-day, demand of joining of dissimilar materials continuously increases due to the possibility of achieving results with extreme advantages of high tensile strength, better and lighter weldments, high precision, low residual stress and high efficiency, which would provide appropriate mechanical properties and good cost reduction. Laser welding being the non-conventional method for joining metals, with its main advantages being high spot diameter density, high heating and cooling rates which results in a minimum heat affected zone (HAZ) and low distortion. Laser welding is characterized by parallel-sided fusion zone, narrow bead, and high penetration. With no requirement of the filler metals and comparatively high cooling rate results in the formation of a fine microstructure so that can enhance material strength without undergoing any finishing operations (Palanivendhan *et.al.*, (2020)).

1.2 STAINLESS STEEL 409

Welding is a process of joining the surfaces of two workpieces (usually metals) through localized coalescence. It is a precise, reliable, cost-effective, and high-tech. method for joining materials. No other technique is as widely used by manufacturers to join metals and alloys efficiently and to add value to their products.

CHAPTER 5

RESULTS AND DISCUSSION

5.1 RESULTS AND DISCUSSION

All the samples resulted from the Auto cad design were butt-welded using laser beam welding and the following tests were performed to evaluate the mechanical properties of the same.

- 1. Tensile test
- 2. Bend Test
- 3. Impact test

From investigating the mechanical properties of the butt-welded specimens of SS430 and SS 409, results of tensile test, bend test and Impact test were summarized.

5.2 TENSILE TEST

The test was conducted on the 6 samples with process parameters taken. Eachsample (the butt-welded joints of SS430 and SS409) was undergone by this testing. The joints were assessed for their mechanical characteristics using the tensile strength test. It was conducted on all the specimens using UTM (Universal TestingMachine) machine. A malleable test helps deciding the tensile properties, for example, modulus of elasticity, yield strength, percentage of reduction in area, tensile strength and percentage of elongation.

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Types oftest	Identification	Thickness mm	Width mm	Area mm²	Tensile test N/ mm ²	Notch Stength ratio	Types of facture and location
	T1	1.98	19.59	38.788	252.654		PM-409
Smooth	Т3	1.94	19.59	37.946	236.650		PM-409
tensile	Т5	1.83	19.58	35.831	271.270		PM-409
	T2	1.85	9.71	17.964	482.089	1.9	PM-409
Notch	T4	1.84	9.58	17.627	493.55	1.94	PM-409
tensile	T6	1.83	9.6	17.568	497.495	1.96	PM-409

Table 5.1 Result of smooth and notch tensile

5.2.1 SMOOTH TENSILE TEST



Fig 5.1 Smooth tensile tested specimen

CHAPTER 6

6 CONCLUSIONS

It is noted that the highest percentage of contribution tensile test, bend and impact test is frequency, hence it is an important factor for the welding of these specimens and this fact leads to the conclusion that slightest change in the frequency will cause major changes in the mechanical properties of the welded joint. The conclusion of a laser weldability study on dissimilar stainless steels will depend on the specific materials used and the parameters of the welding process. However, here are some general conclusions that can be drawn: Laser welding is a viable method for joining dissimilar stainless steels. It offers several advantages over traditional welding methods, including precise control over the heat input and the ability to produce narrow and deep welds. The selection of laser welding parameters such as power, speed, and focus position can greatly influence the quality of the weld. The optimal parameters depend on the specific materials being joined and must be determined through experimentation. The choice of filler material is also important in laser welding dissimilar stainless steels. Filler materials with a similar composition to the base materials are preferred, but other factors such as corrosion resistance and mechanical properties must also be considered. The formation of ductile intermetallic phases can be a concern in laser welding dissimilar stainless steels, particularly when joining materials with significantly different compositions. However, careful selection of welding parameters and filler material can help minimize the formation of these phases. Overall, laser welding is a promising method for joining dissimilar stainless steels, but careful consideration must be given to material selection, welding parameters, and filler material to ensure high-quality welds.

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Criterion 1: Curricular Aspects

1.3 Curriculum Enrichment

1.3.4.1: Number of students undertaking field projects / internships / student projects

Programme Name: B.E Mechanical Engineering.

Minor Projects Proof





AUTOMATIC SHORT CIRCUIT RECTIFIER

A MINOR PROJECT III REPORT

Submitted by

MAHESHWARAN R	(20BME4047)
MOOGITH S	(20BME4053)
NITHISH T	(20BME4058)

in partial fulfillment for the award of the degree

BACHELOR OF ENGINEERING

In

MECHANICAL ENGINEERING

M.KUMARASMY COLLEGE OF ENGINEERING, KARUR

ANNA UNIVERSITY : CHENNAI 600 025

DEC - 2022

M.KUMARASAMY COLLEGE OF ENGINEERING,KARUR BONAFIDE CERTIFICATE

Certified that this project report AUTOMATIC SHORT CIRCUIT RECTIFIER is bonafide Work of MAHESHWARAN (20BME4047), MOOGITH S(20BME4053), AND NITHISH T (20BME4058) who carried out the project work during the academic year 2022 – 2023 under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of anyother project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate

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MR.MOHAN PRASAD, ME, MBA, (Ph.D.),

PROJECT SUPERVISORHEAD OF THE DEPARTMENTDEPARTMENT OF MECHANICAL ENGINEERING,DEPARTMENT OF MECHANICAL ENGINEERING,M.KUMARASAMY COLLEGE OF ENGINEERING,M.KUMARASAMY COLLEGE OF ENGINEERING,THALAVAPALAYAM, KARUR-639113.THALAVAPALAYAM, KARUR-639113.

This project report has been submitted for the end semester project viva voce

Examination held on _26]12] 2022

RNAL EXAMINER

DECLARATION

We affirm that the Project titled AUTOMATIC SHORT CIRCUIT RECTIFIER being submitted in partial fulfillment off or the award of Bachelor of Engineering in Mechanical Engineering is the original work carried out by us. It has not formed the part of any other project or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

NAME OF THE STUDEN	Г	SIGNATURE OF STUDENT
MR.MAHESHWARAN.R	(20BME4047)	R Mahishwaran
MR.MOOGITH.S	(20BME4053)	
MR.NITHISH.T	(20BME4058)	T.U.L

NAME AND SIGNATURE OF THE SUPERVISOR (WITH DATE) Pr. S. Otarabalan

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Words are boundless to thank **Our Parents and Friends** for their constant encouragement to complete this project successfully.

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4	Test and validate through conformance of the developed prototype and analysis the cost- effectiveness.	K4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
5	Prepare report and present oral demonstration	K4	3							3	3	3		3	3		3
	Average		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

ABSTRACT

In particle accelerators, rectifiers are used to convert the AC voltage into DC or low-frequency AC to supply loads like magnets or klystrons. Some loads require high currents, others high voltages, and others both high current and high voltage. This presentation deals with the particular class of line commutated rectifiers (the switching techniques are treated elsewhere). The basic principles of rectification are presented. The effects of real world parameters are then taken into consideration. Some aspects related to the filtering of the harmonics both on the DC side and on the AC side are presented. Some protection issues associated with the use of thyristors and diodes are also treated. An example of power converter design, referring to a currently operating magnet power supply, is included. An extended bibliography (including some internet links) ends this presentation...

Keywords: AC &DC power supply, diode, resister.

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CHAPTER 1

1 Introduction

In particle accelerators, electrons or other charged particles are forced to move along orbits or trajectories by means of magnetic fields. The intensity of the magnetic fields needed to obtain the desired effects is related to the energy of the particles. Electromagnets, conventional hot ones or superconducting ones, are normally used. The excitation current in the magnets can range from some amperes for small orbit correction coils to some hundreds or thousands of amperes (see, for example, Refs. [1] and [2]). The power converters needed to cover such a wide current range have widely differing structures and characteristics and, for the same power requirement, several solutions areoften possible.

In this paper I show the topologies and the characteristics of a particular class of rectifiers—the line commutated ones—that was and still is widely used in particle accelerator facilities. Even today, in the 'PWM Era', line commutated rectifiers are operating. Moreover, Switch Mode Power Supplies (SMPS) very often include in their structure 'conventional' rectifiers as input or output stages or both.

Since the currents in the magnets have either to be varied according to the energy (or the required changes in the orbit) of the particles or at least have to be ramped from the turn on values to their final values (this is quite important if the time constant of the load — a magnet string — is high), the rectifiers use thyristor-based structures or mixed ones (diodes and thyristors or diodes/thyristors and transistors).

The effects on the rectifier behaviour of the inductive components of the load and of the AC line will be investigated. The use of passive filters to reduce the harmonic content (ripple) of the voltage and current at the output of the rectifier will be discussed.

Even if this is not a specific topic for this lecture, some protection issues related to the components (snubber and bucket circuits) and to the converter as a whole will be briefly mentioned.

6.2.5 Rectifier structure

In Section 6.2 we discussed how to protect the devices (diodes or thyristors). Here I am considering the rectifier structure. Adequate cooling is a very important issue. Thermal switches (connected to an interlock) have to trip if the temperature of the heat-sinks is too high. Flow switches should monitor the flow of water or of forced air used to cool the heat-sinks.

Normally, there is a passive filter cascaded to the rectifier, which, as presented in Section 5.2, usually includes an inductance. To avoid overvoltages on the output of the rectifier structure when the rectified current is suddenly interrupted (opening of the main switch, thyristors' trigger pulses disabled, etc.) a so-called 'freewheeling diode' is connected in anti-parallel to the rectifier structure.

6.2.6 Passive filter

A malfunction in the rectifier structure—for example a broken thyristor that does not turn on— increases the ripple content in the rectified voltage. This leads to a great increase in the ripple current through the capacitors of the passive filter. The capacitors have to be protected with properly sized fuses or thermal contactors, or both. The magnetic components—the inductance—have to sustain the whole rectified current (i.e., the DC component with the ripple current on it). Besides being

adequately dimensioned in order to avoid saturation, they have to be properly cooled. Thermal switches and—if water or forced air is used—flow switches have to be planned for.

6.2.7 Load

Protections for the load are also included in the converter's structure. If the load has a high inductive component, a freewheeling diode is normally connected at the output of the converter in anti-parallel to the load. The freewheeling diode has to be able to withstand the peak load current.

project And model

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I would like to thank my colleagues R.Maheshwaran,S.Moogith and T.Nithish for the helpful discussions we had and for their comments on the topics presented in or related to this paper.

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"SMART DUSTBIN"

A MINOR PROJECT III REPORT

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We glad to thank all the **Teaching and Non teaching** Faculty Members of Department of Mechanical Engineering for extending a warm helping hand and valuable suggestions throughout the project.

Words are boundless to thank **Our Parents and Friends** for their constant encouragement to complete this project successfully.

IV

ABSTARCT

Technology always help mankind in making life easier. Now presenting an innovative way which revolutionize the trash management system through this we are taking a step towards clean India. Present scenario in the public places where proper disposal is not being done because of which we come across overflow dustbins. Even the private areas which are clean enough failed to utilize the resources efficiently. To properly manage the waste it has to be handled, segregated, transported and disposed so as to reduce the risks to the public lives and sustainable environmental There is a rapid increase in capacity and categories of solid waste as a result of urbanization, constant economic growth, and industrialization. Global Waste Management Market reported that the amount of waste generated worldwide produced is 2.02 billion tones. This method is easy and simple solution of segregation of three types of wastes dry, metal and wet. It is designed to sort the trash into metallic waste, wet waste and dry waste ready to be processed separately for the next process of operation for this. Using Embedded technology to continuous monitoring the dustbin in order to check whether dustbin is full or not. Wireless sensors sense the amount of waste in the containers if it reached the maximum container capacity, sends instant messages to the trash management department which deploy them to collect the garbage in no time. By implementing this product at different location, instead of driving blindly on the static routes, we can optimize the collection schedule.

Keyword: - Waste segregation, Smart dustbin, Sensor alert.

VIII

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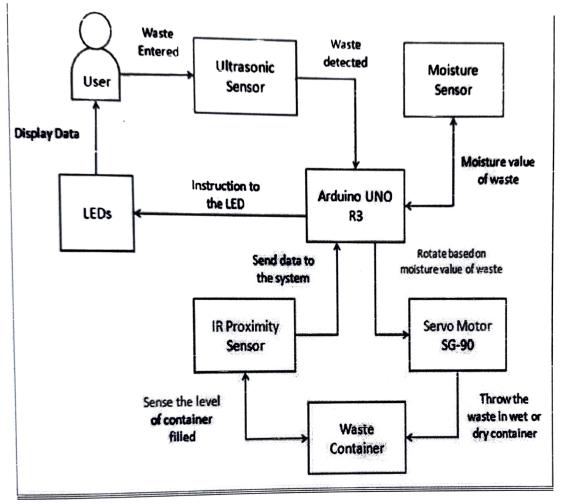
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IX

<u>CHAPTER 1</u> INTRODUCTION

In recent times, garbage disposal has become a huge cause for concern in the world. A voluminous amount of waste that is generated is disposed by means which have an adverse effect on the environment. The common method of disposal of the wasteis by unplanned and uncontrolled open dumping at the landfill sites. This method isinjurious to human health, plant and animal life. This harmful method of waste disposal can generate liquid leachate which contaminate surface and ground waterscan harbor disease vectors which spread harmful diseases and can degrade aesthetic value of the natural environment and it is an unavailing use of land resources. In India, rag pickers play an important role in the recycling of urban solid waste. Rag pickers and conservancy staff have higher morbidity due to infections of skin, respiratory, gastrointestinal tract and multisystem allergic disorders, in addition to ahigh prevalence of bites of rodents, dogs and other vermin. In human life, trash is aproblem that has not been handled properly. There are so many processes in humanactivities that generate trash so the number continues to increase every time. In his everyday life, every human being produces a number of garbage in the solid form of1-3 kg. Untreated trash can cause problems and should be overcome. The amount ofwaste can be overcome by recycling. To recycle, trash must be sorted first. The sorting process is useful for separating trash by type. To distinguish the type of trash, often the sorting process is done manually by using human power. Humans will sort the type of trash as with a predetermined category. That way, the waste can be reprocessed into useful goods and have economic value. But along with the development of the age and the growing rate of increasing trash, the sorting of waste by manual method becomes not optimal. Lack of human resources in the process of sorting waste and the amount of waste that must be sorted, making a lot of trash that

CHAPTER.4



DESIGN AND DIAGRAM

FIGURE .1 SYSTEM ARCHITECTURE

CHAPTER.7 RESULT

Every component as explained earlier is interfaced with Arduino UNO microcontroller. The representation of the whole setup . We use Arduino IDE software to program this system and results are found to be accurate. i.e., accurately detecting the type of waste as it is thrown in the dustbin and dumping it into corresponding container .Waste segregation In this, we try to differentiate between different types of wastesuch as dry waste and wet waste. We use moisture sensor along with IR sensor to differentiate between the type of waste present and a gear motor to segregate into respective dustbin. IR sensor detects the presence of an object and moisture sensor detects the type of waste by the amount of moisture content present in thatobject. As soon as the moisture senor detects the type of waste, gear motor turns clockwise or anticlockwise for wet waste and dry waste respectively. In dry waste dumping is depicted as the motor turns in anticlockwise direction. waste dumping is depicted as the motor turns in clockwise direction. rest positionis depicted indicating that waste is not detected by the Ultrasonic sensor on the top right of the model indicating no waste is present for segregation. Thus the whole system is automated and human interventionis reduced. It is an efficient system which makes collection of waste convenient by alerting the municipal groups when required and also helps in achieving a healthier and environment. The result of testing for waste segregation is shown in figure 8 below, through the serial monitor of Arduino IDE software using two type of waste viz. piece of paper as dry waste and an organic solid waste for wet waste.

CHAPTER.8 CONCLUSION

The Automatic waste management system may be a leap forward to create the manual assortmentand segregation of wastes automatic in nature. The developed system would pioneer work for selidwaste management and segregation processes. This proposal for the management of wastes is economical associate degree time saving method than the presently using methodology within which involved municipal worker 101 must seek for the crammed waste bins manually across totally different spots in an area/street for checking often whether or not the waste bin is crammedor not, that is advanced and time taking. This automation of waste conjointly reduces the human effort and consequently the price of the entire method. This technique will be enforced at anywherewith ease and among affordable quantity of your time. The implementation prices for the automation are additionally reasonable. The general methodology for the detection andmanagement of waste becomes economical and intelligent. We have shown the appliance and implementation of the above system. This planned system wouldn't solely operate for grouping and change knowledge mechanically and timely, however conjointly it might analyze and use knowledge showing intelligence. The planned system would solve loads of downside concerning solid waste assortment, monitoring, minimizing value and accelerate the management. The Trash management system may be a leap forward to create the manual assortment and detection of wastes automatic in nature. It might pioneer work for solid waste assortment, observance and management processes. This project for the management of wastes is economical and time saving method than the presently using methodology within which involved municipal worker must seek for the stuffed waste bins manually across totally different spots in an area/street for checking often whether or not the waste bin is stuffed or not.

CHAPTER.9 REFERENCE

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AUTOMATIC HAND BRAKE RELEASE

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ABSTRACT

An automatic brake system for a vehicle consists of an electric motor, related to the motor for transmission motion from the motor to a brake lever that pushes the restraint. This project provides a brand new idea style of the EMPB (electro mechanical parking brakes) system that has straightforward and cheap characteristics. This project deals with coming up with and fabrication of EMPB system. Mechanical device hand brake system conjointly remarked as brake by-wire, replace typical parking braking systems with a totally electrical part system. This happens by replacement typical linkages with electrical motor-driven units. The braking force is generated directly at every wheel by high performance electrical motors and automobile management, that area unit controlled by an ECU. The electronic hand brake replaces the traditional handbrake. It's operated by a switch within the center console.

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CHAPTER 1 INTRODUCTION

In cars, the hand brake (also known as the emergency brake, e-brake, or parking brake) is a latching brake usually used to keep the car stationary. Automobile e-brakes usually consist of a cable (usually adjustable for length) directly connected to the brake mechanism on one end and to some type of mechanism that can be actuated by the driver on the other end. The mechanism is often a hand-operated lever (hence the *hand brake* name), on the floor on either side of the driver, or a pull handle located below and near the steering wheel column, or a (foot-operated) pedal located far apart from the other pedals.

Although sometimes known as an emergency brake, using it in any emergency where the footbrake is still operational is likely to badly upset the brake balance of the car and vastly increase the likelihood of loss of control of the vehicle, for example by initiating a rear-wheel skid. Additionally, the stopping force provided by using the handbrake instead of or in addition to the footbrake is usually small and would not significantly aid in stopping the vehicle, again because it usually operates on the rear wheels; they suffer reduced traction compared to the front wheels while braking. The emergency brake is instead intended for use in case of mechanical failure where the regular footbrake is inoperable or compromised, hopefully with opportunity to apply the brake in a controlled manner to bring the vehicle to a safe, if gentle halt before seeking service assistance. Modern brake systems are typically very reliable and engineered with failsafe (e.g. dual-circuit hydraulics) and failure-warning (e.g. low brake fluid sensor) systems, meaning the handbrake is no longer often called on for its original purpose.

CHAPTER 4

DESIGN OF EQUIPMENT AND DRAWING

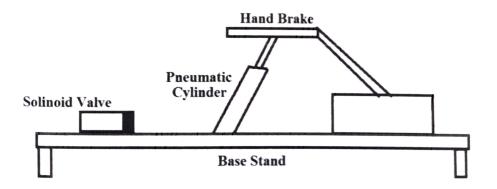
4.1 PNEUMATIC COMPONENTS AND ITS SPECIFICATION

The automatic hand brake release is consists of the following components to

full fill the requirements of complete operation of the machine.

- 1. Double acting pneumatic cylinder
- 2. Limits switch
- 3. Compressor
- 4. Control unit

4.3 DRAWING FOR AUTOMATIC HAND BRAKE RELEASE



CHAPTER 9

CONCLUSION

The project carried out by us made an impressing task in the field of automobile manufacturing industries. It is very useful for the workers work in the lath and small scale industries.

This project will reduce the cost involved in the concern. Project has been designed to perform the entire requirement task at the shortest time available.

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DESIGN AND ANALYSIS OF HEAT DISSIPATING SYSTEM BY LIQUID COOLING FOR BATTERIES OF ELECTRIC VEHICLE

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ABSTRACT

The Growth of Electric vehicles is increasing in day-to-day life. To make eco-friendly transport, many industries have been working very hard on Electric vehicle projects. Many users start to use electric vehicles to minimize the pollution caused by fuel-based vehicles and the cost of the fuels has been increasing day by day. Even though the electric vehicle is a boon to people and society, the major problem faced by the electrical vehicle is the battery. Due to the usage of the battery for several periods, the temperature of the battery is increasing in over time. Battery packs are essential parts of electric cars. They are made to last throughout their intended life cycles. Batteries performance and lifespan are impacted by temperature. One of the major elements in extending the lifespan of battery packs is to maintain stable and uniform temperatures throughout all modules and battery cells within the working temperature range. Due to this lack of proper heat deception, the blast of batteries, or many accidents, efficiency drops have been occurring lately after a few months of electric vehicle usage. So we initiated to solve this problem by referring to various journals, works of literature, and various technical analyses

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LIST OF SYMBOLS

 α (alpha) Angle, kinetic energy correction factor

 β (beta) Angle, momentum correction factor

y (gamma) Specific (or unit) weight

 δ (delta) Boundary layer thickness

 Δ (delta) Flow correction term

ε (epsilon) Surface roughness

 η (eta) Eddy viscosity

 θ (theta) Any angle

 μ (mu) Absolute viscosity

v (**nu**) Kinematic viscosity

 π (pi) Dimensionless parameter

 ρ (rho) Density

 σ (sigma) Surface tension, intensity of tensile stress

 τ (tau) Shear stress

 φ (phi) Speed factor, velocity potential, ratio

 ψ (**psi**) Stream function

ω (omega) Angular velocity

XIII

LIST OF UNIT CONVERSIONS

	British	Engineering	Inter	rnational	System	to
Parameter	System to I	nternational	Briti	sh	Engineer	ing
	System		Syste	em		
Length	1 in = 0.025	1 in = 0.0254 m		1 m = 39.37 in		
	1 ft = 0.3048 m		1m=3.281ft			
Mass	1 slug = 14.	59 kg	1 kg	1 kg = 0.06854 slug		
Force	1 lb = 4.448	N	1 N =	= 0.2248 i	b	
Time	lsec=1s		1 s =	l sec		
Specific (or	$1 \ 1b/ft3 = 1.$	57 _. / N/m3	1 N/1	1 N/m3 = 0.006366 1b/ft3		
unit) weight						
	1 slug/ft3 = 515.2 kg/m3		1	kg/m3 =	0.0019	941
Mass density			slug/ft3			
Specific	Same dimer	nsionless value	Same dimensionless value			
gravity	in both syste	ems	in both systems			
Dynamic	1 lb-sec/	47.88	1 N	$V \cdot s/m2 =$	0.02089	1b-
viscosity	viscosity N·s/m2		sec/ft2			
Kinematic 1 ft2/sec = 0.09290 m2/s		1 m2/s = 10.76 ft2/sec				
viscosity						
Pressure	ressure 1 1b/ft2 = 47.88 Pa		$1 Pa = 0.02089 \ 1b/ft2$			
	1 1b/in2 = 6.895 kPa		1 kPa = 0.1450 1b/in2			
Surface	1 lb/ft = 14.59 N/m		1 N/m = 0.06853 lb/ft			
tension						

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CHAPTER 1

INTRODUCTION

EV Batteries have specific operating ranges, which are critical for the battery life and performance. They are designed to operate at ambient temperature, which is between 68°F and 77°F (20°C and 25°C). A better control over the battery temperature improves their performance and life.

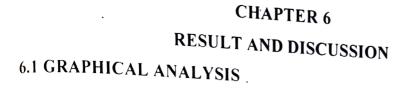
During operation, they can withstand temperature between - $22^{\circ}F$ and $140^{\circ}F$ (-30°C and 50°C)

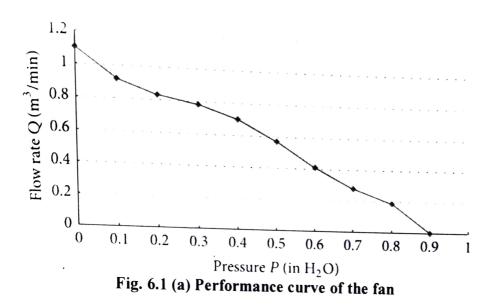
During recharges, they can withstand temperatures between 32°F and 122°F (0°C and 50°C)

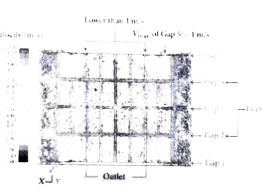
Batteries generate a lot of heat during operation and their temperature must be brought down within operating ranges. At high temperatures (between 158°F and 212°F, or 70°C and 100°C), thermal runaways can occur, causing a chain reaction that destroys the battery pack. During fast charges, batteries must be cooled down. This is because the high current going into the battery produces excess heat that must be extracted to preserve the high charging rate and not overheat the battery.

They sometimes also need to be heated up when the temperature is too low or to boost performances. For example, cells cannot be charged below $32^{\circ}F$ (0°C). Or, companies like Tesla offer battery preheating in some models to reach high performances, going from 0 to 60 mph in less than 2 seconds.

1







Velocity (III.)

Fig. 6.1 (b) Top View

Fig. 6.1 (c) ISO View

CHAPTER 7 CONCLUSION

IFR26650 lithium-ion battery is selected as the object of study. In order to solve the battery heat problem, the influence of temperature on the battery capacity and internal resistance is analyzed. In order to get good battery performance, the ideal operating temperature range of the lithium ion battery is $20-45^{\circ}$ C, and the temperature difference between the batteries should be controlled within 5°C.

The three-dimensional thermal model of lithium-ion battery is established by theoretical calculation of thermal physical parameters needed for the simulation of lithium-ion battery. The discharge experiment of single cell is carried out, and the simulation results show that the model has practical value.

A power cell grouping module with an upper and lower layered structure is designed, and the optimized reciprocating flow heat dissipation scheme is selected. The maximum temperature and the temperature difference of the battery can be well controlled so as to meet the requirement of heat radiation management. This research has only analyzed the heat dissipation of the battery in the high temperature environment, and the low temperature has great influence on the performance of the battery.

Throughout the study, the inside of the battery is treated as a homogeneous heater, and each component is an independent heat source. Therefore, the next step should establish a fine thermal model to analyze the impact of low temperature on the performance of the battery. Based on this, the thermal management of the power battery in the full temperature range can be achieved.

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M.KUMARSAMY COLLEGE OF ENGINEERING, KARUR

BONAFIDE CERTIFICATE

Certified that this project report "RECLAIMING BRAKE SHOES" is bonafide Work of SHANKARA NARAYANAN V R(20BME4072), SIBI M (20BME4074) PARTHASARATHY T(20BME4059) who carried out the project work during the academic year 2022 - 2023 under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr.S.DHANABALAN M.Tech, Ph.D SUPERVISOR

Department of Mechanical Engineering, M.Kumarasamy College of Engineering, Thalavapalayam, Karur-639113



Dr.M.MOHAN PRASAD M.E, MBA, Ph.D HEAD OF THE DEPARTMENT Department of Mechanical Engineering, M.Kumarasamy College of Engineering, Thalavapalayam, Karur-639113

This project report has been submitted for the end semester project viva voce Examination held on 24.122022

INTERNAL EXAMINER

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DECLARATION

We affirm that the Project titled "RECLAIMING BRAKE SHOES " being submitted in partial fulfillment of for the award of Bachelor of Engineering in Mechanical Engineering, is the original work carried out by us. It has not formed the part of any other project or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Student name

Signature

1 SHANKARA NARAYANAN V R (20BME4072)2 SIBI M(20BME4074)3 PARTHASARATHY T(20BME4059)

fName and signature of the supervisor with date

iii

ABSTRACT

The main contribution of this project is reusing of brake shoes. An air brake, a compressed air brake system, is a type of friction braking for vehicles in which compressed air pressing on a piston is used to apply the pressure to the brake shoe needed to stop the vehicle. A brake shoe is the part of braking system which carries the brake lining in the drum brakes used on automobiles. Brake shoe carries the brake lining, which is glued to the shoe, when the brake is applied the shoes moves and presses the lining against the inside of drum. The friction between lining and drum provides the braking effort. Energy is dissipated as heat. Due to wear and tear stress. there is a depreciation in the brake shoe lining.

After this depreciation we usually dispose the brake shoe and install the new brake shoe. But, the main objective of this project is reusing of the brake shoe. Hence, the project is titled as "RECLAIMING BRAKE SHOES". The two used brake linings over the brake shoes are attached together and fixed inside the brake drum. The brake shoes which are roughly semicircular are made to contact the inside surface of the brake drum. While the driver applies the brake the brake shoes make contact with the brake drum to stop the vehicle.

The scope of the project is RRR- (Reuse, Reduce, Recycle). The reusing of brake shoes it cost very low comparing to the installation of new brake shoes. The output of the new brake shoes and reclaimed brake shoes are same.

Keywords: Reusing brake shoes, double lining.

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07 CONSTRUCTION OF DOUBLE LINING 15 BRAKE SHOE

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CHAPTER 1 INTRODUCTION

Brake drum was invented by Louis Renault in 1902. He used woven asbestos lining for the brake drum lining as no alternative dissipated heat like the asbestos lining, though Maybach has used a less sophisticated brake drum. In the first brake drums, levers and rods or cables operated the shoes mechanically. From the mid-1930's, oil pressure in a small wheel cylinder and pistons operated the brakes, though small vehicles continued with purely mechanical systems for decades. Some designs have two wheel cylinders. The shoes in brake drums wear thinner, and brakes required regular adjustment until the introduction of self-adjusting brake drums in 1950's. The brake drum is used widely on road vehicles and consists of a drum attached to the rotating wheel. The drum has an internal machined cylindrical surface. Inside the drum and protected from the environment are two shoes lined with friction material which can be pivoted to make a forced contact with the internal cylindrical surface. A drum brake unit consists of two brake shoes mounted on a stationary backing plate. When the brake pedal is pressed, a hydraulically activated wheel cylinder pushes the shoes out to contact a rotating drum which creates friction and slows the vehicle. As the pedal is released, return springs retract the shoes to their original position. Drum brakes were the first types of brakes used on motor vehicles. Nowadays, over 100 years after the first usage, drum brakes are still used on the rear wheels of most vehicles. The drum brake is used widely as the rear brake particularly for small car and motorcycle. The leading-trailing shoe design is used extensively as rear brake on passenger cars and light weight pickup trucks. Most of the front-wheel-drive vehicles use rear leading-trailing shoe brakes. A drum brake is a brake that uses friction caused by a set of shoes or pads that press against a rotating drum shaped part called a brake drum. The brake drum is generally made of cast iron that rotates with the wheel. When a driver applies

1

CHAPTER 3 PARAMETERS TO BE ANALYSED

	Drum diameter	d _T =630mm
-	Drum thickness 1	t _T =30mm
Geometry drum	Drum width	b _T =236mm
	Drum thickness 2	t _s =30mm
	Drum surface	$A_{\rm T}=0,467{\rm m}^2$
	Lining thickness	t _B =12mm
	Lining width	b _B =225mm
Geometry lining	Lining length	l _B =400mm
	Lining angle	α _B =70°
	Lining surface (total)	$A_{Bges}=0,18m^2$
	Density drum	$\rho_T = 7850 \text{kg/m}^3$
Material properties drum	Heat conductivity drum	$\lambda_T = 50 W/(mK)$
	Heat capacity drum	$c_T = 465 J/(kgK)$
	Density lining	$\rho_{\rm B}=2000 \rm kg/m^3$
Material properties lining	Heat conductivity lining	$\lambda_B=0.9W/(mK)$
	Heat capacity lining	c _B =1000J/(kgK)

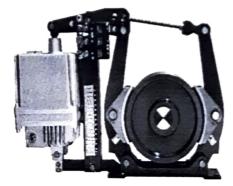


Figure 1. Drum brake according to DIN 15435 [2]

CHAPTER 10

RESULTS AND DISSCUSIONS

The research results indicate that the materials of brakes component have a great influence on drum brake dynamic stability, where the friction coefficient is the most influential parameter. The aim of improving the performance of the drum brake and the stability of squeal based on dynamics properties and brake torque investigation.

This practice was controversial however, as it removed friction material from the brakes, reduced the life of the shoes and created hazardous asbestos dust. The current design theory was altered, to use shoes for the proper diameter drum, and to simply replace the brake drum when necessary, rather than rearc the shoes.

Mostly, the brakes will cause squeaking and become less smooth which is the main reason proper attention has to be paid to brake linings because if not taken care of they can cause more expensive damage to the engine of the car. Hence, in a very simple language, it is very much important to get them repaired at the same time when any issue is there. This concept will very well help to make sure that there is a high level of consistency throughout the braking systems.

The best part associated with the brake lining that it will help in converting the motion of the car into the heat when the brakes will be creating the pressure. Hence, the linings should be made up of that particular material which can produce very powerful friction levels and the cases in of drum brakes the component called brake linings are also known as shoes which have to be placed inside the metal are called a drum. Whenever the pedal

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Criterion 1: Curricular Aspects

1.3 Curriculum Enrichment

1.3.4.1: Number of students undertaking field projects / internships / student projects

Programme Name: B.E Mechanical Engineering.

Industrial Visit Proof

M.KUMARASAMY COLLEGE OF ENGINEERING

(Autonomous) Karur - 639 113.

INDUSTRIAL VISIT / CULTURAL VISIT / FIELD TRIP /SPORTS MEET APPROVAL FORM

Department	Name of the Applicant	Date
Mechanical	Saravanakumar S	15.09.22 to 18.9.22
Mechanica	Jaravanananar o	

Kindly read the Guidelines before fill the form

1	Type of Visit	:	Industrial Visit
2	Date & Time of Departure	:	15.09.2022 & 10.30 p.m
3	Date & Time of Arrival	:	18.09.2022 & 08.30 a.m
4	Address & Phone Nos. (for contact)	:	Saravanakumar S (8754256821) & Emmanual L (9952622709)
5	Mode of Travel	:	Train/Bus/Other Mode Specify (Enclose details in Annexure 1)
6	Copy of Approval letter from Industry	:	Yes/Ne (Enclose details in Annexure 2)
7	Accompanying Faculty Details and Undertaking Letter	:	Yes/Ne (Enclose details in Annexure 3)
8	List of Students Male/Female	:	Yes/Ne (Enclose details in Annexure 4)
9	Accommodation Details with Confirmation letter	:	Yes/Ne (Enclose details in Annexure 5)
1 0	• Undertaking Letter From Students	:	Yes/Ne (Enclose details in Annexure 6) Dr. M. MOHAN PRASAD, M.E., M.B.A., Ph.D Dr. M. MOHAN PRASAD, M.E., M.B.A., Ph.D
11	Approval from HoD	:	Head of the Department of Mechanical Engineerin
12	Approval from Dean	:	(Sign with Seal) M.Kumarasamy Concesson KARUR - 639 113, Tamil Nadu.
			PRINCIPAL,

PRINCIPAL, M. Kumarasamy Colleganos Engineering, THALAVAPALAYAM, KARUR - 639 113.

Note: The Form should be submitted two weeks prior to the departure

Approval after checking (Check List)



MKCE

.

Mode of Travel

Annexure 1

SI.No	Details	Mode of Travel	Travel Details * with Phone number of Agent and Driver Phone Number	Responsible Person Handling
1.	From MKCE to Vagamon, Kerala	Bus	The Royal travels , pollachi. Senthil kumar (9080381330)	Saravanakumar S (8754256821)
2.	From Vagamon to Industry(cochin), Kerala	Bus	The Royal travels , pollachi. Senthil kumar (9080381330)	Saravanakumar S (875425 6 821)

* If Travel by outside MKCE bus, FC copy of the bus should be attached

Annexure 2

Copy of the Approval Letter from Industry

- Should contain clear date, time and number of days of Visit Letter should be by the authenticated person from the Industry minimum at Manager Level with seal.

Accompanying Faculty

6

0

Annexure 3

SI.No	Name of the Faculty/ Designation	Male/Female	Contact Mobile Number and Email	Alternate Contact In case of Emergency
• •	Saravanakumar S(1131056) Asst Prof / Mechanical	Male	8754256821 (saravanramech9029@gmail.com)	7868804898
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3.	Saravanakumar S(1131507) Asst.Prof / Mechanical	Male	9789475770 (saravananmeksr@gmail.com)	9994181550
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UNDERTAKING LETTER - FACULTY

We here-by undertake that the Industrial Visit/Cultural Visit/ Field Trip is purely academic related and at any case.

We shall undertake full responsibility of the student's actions and behavior at all times during the course of Industrial Visit/Cultural Visit/ Field Trip/ Sports meet. We further undertake not to breach the safety guidelines of MKCE at any cost.

SLNo	• Name	Designation/ Dept.	Signature *
1.	Saravanakumar S	Asst.Prof / Mechanical	5.31
2.	Manikandan 🤾	Asst.Prof / Mechanical	prisal
3.	Emmanuel L	Asst.Prof / Mechanical	2 2 mm Jul
4.	Saravanakumar S	Asst.Prof/ Mechanical	8. Samking

Annexure 4

List of Students Details

8

SI.No	Reg.No. & Name	Mobile Number	Parents Number	Blood Group
1	20BME4001-ABHINIVESH S	9600822817	6385846639	A+
2	20BME4002-AJAY SRINATH G	7305537427	98949 28148	A1+
3	20BME4003-AKASH B	9600433187	9894535585	B+
4	20BME4004-AKIL R	9123524850	9952257981	O+
5	20BME4005-ARAVIND S	9790328101	9442914363	B+
6	20BME4006-ARUNKUMAR S	8072535635	9942737235	0+
7	20BME4007-ASHWIN M	9360224766	9865203380	0+
8	20BME4008-AVINASH A	9629881655	9489426496	0+
9	20BME4009-AVINASHRAM V	7010279450	9940120952	A1+
10	20BME4010-BALAMURUGAN S R	9043493175	7806937720	B+
11	20BME4011-BHARATHIKANNAN S	8940976382	9843855844	0+
12	20BME4012-CHANDRAKANTH P K	8523967770	9842350203	B+
13	20BME4013-DEEPANRAJ P	9976787881	9080330906	A1+
14	20BME4014-DHARSHAN S	7708063166	7708063166	B+
15	20BME4016-DHARUN G K	9790486707	9788014253	A1B+
16	20BME4017-DHARUNKUMAR R K	6385844376	9444798378	B+
17	20BME4018-DHARUN R	7904876622	9976185633	B+
18	20BME4019-DHINESHKUMAR S	9361013366	9952567203	0+
19	20BME4020-DIVAKAR N	8825454461	8825454461	A+
20	20BME4021-GEORGE STEWARD S P	9361251828	9787553935	0+
21	20BME4022-GIRIPRASATH R	9345588910	9894852147	B+
22	20BME4023-GOKUL A	9585193587	9976393587	0+
23	20BME4024-GOKUL S	9597931466	6383 285 189	0+
24	20BME4025-GOWSICK S	9345881914	9790557251	A1+
25	20BME4026-GUHANESH THIRUKKAIVEL S	6369765763	9659679789	A+

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33	20BME4035-KARTHICK M	7358991363	9486092539	0+
34	20BME4038-KIRUBA SHANKAR M	9486155130	9942255130	B+
35	20BME4039-KIRUBANITHI S	9629210397	9442210397	0+
36	20BME4040-KISHOR KUMAR K	9080602012	9942049790	0+
37	20BME4041-KISHORE G	9025228046	9442386507	0+
38	20BME4042-KISHORE KUMAR S	9345332488	9942942354	A+
39	20BME4043-KISHORE S	9566881129	9655728202	B+
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62	20BME4048-MANGUDI K	9360186168	9786762044	B+
63	20BME4049-MANOJ S T	9597534875	9597534875	0+
64	20BME4051-MOHANAPRASAD A T	7904957513	9443027150	A1+
65	20BME4053-MOOGITH S	8870353839	9443690275	0+
66	20BME4054-MUTHUKUMAR R	7339005681	9677305681	A+
	20BME4059-PARTHASARATHI T	8489429762	9442749099	A1+
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69	20BME4061-PRADEEP P	9566847937	9789681272	0+
70	20BME4064-ROSHAN RAJKUMAR S	9677440741	9894606919	0+
71	20BME4066-SABAREESWARAN K	7339361460	9715261460	0+
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74	20BME4070-SANJAY S	9894984133	9943743359	A+
75	20BME4072-SHANKARANARAYANAN V R	9597104068	9245195620	B+
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81	20BME4080-SUGUMAR N	8870625670	8760030880	B+
82	20BME4082-TAMILSELVAN L	7708364772	9942576992	A+
83	20BME4083-TAMILSELVAN R	9443669805	9442851616	B+
84	20BME4084-THANGAPRANESH R	6381055083	9865176404	A1+
85	20BME4085-UDHAYANARAYANAN J	7868940716	9976935983	В-
86	20BME4088-YASWANTH M	9940753815	9976791821	A1+
87	20BME4326-MATHISOORYAN S	9791387888	9041605888	0+
88	20BME4327-MOHAMMED ABU MASOOTH M	8220805272	8778121513	O+
89	20BME4328-MOUNIKANNAN	6374616317	9442620641	B+
90	20BME4329-MUKESH G	8098884282	9344048361	0+
91	20BME4332-NAGALINGAM C	6380690355	9842320539	B+
92	20BME4333-NAVEEN J	9003622829	9842721743	B+
93	20BME4334-NAVIN N	• 6369600836	9364201244	0+
94	20BME4335-NITHISH KUMAR R	9787719502	7010689372	0+
95	20BME4337-SANJAY S	9677323447	9789717434	B+
96	20BME4338-SANTHOSH KUMAR G	6382950897	9578109894	0+
97	20BME4339-SHANDEEP S	9944103097	9865271574	A-
98	20BME4340-SHIVA SABARIEESH L	8056792300	8248641558	0+
99	20BME4341-SIRANJEEVI S	9345349447	8300684165	A1+
100	20BME4343-SRIDHAR B	9047470350	9943440464	O+
101	20BME4344-SRIRAM P R	9443184570	7010706946	0+
102	20BME4346-SUDHARSHAN S	7639939866	7639939866	0+
103	20BME4347-THOUFICK AHAMED S	6381977454	9865669844	0+
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106	20BME4351-KAVIIN RAJ M	6380550935	9698249933	B+
107	20BME4322-LOGESH S	6380118209	6369725727	O-
108	20BME4078-SUDEEP P	8610693055	9080887910	A+

GUIDELINES TO GET FINAL APPROVAL FOR INDUSTRIAL VISIT/ CULTURAL VISIT/ SPORTS MEETS/ FIELD TRIP

- The Dean approving the Industrial Visit/Field Trip etc., shall ensure and endorse that the faculty members attached to the tour submit an undertaking stating that the tour is arranged only for Industrial Visit/ Field Trip connected to academics, and students will not be taken or allowed to mountain areas, rivers, canals, beaches, water parks, reservoirs, forest areas etc.,; and, they are personally liable and answerable for any such untoward incident taking place during the tour.
- Places with potential hazards, such as political unrest, negligent security, disease outbreaks, threats of earthquake or frequent occurrence of Cyclone and flood, should be avoided.
- If the mode of transport is by bus, overnight travel is strictly not permitted. Any travel requiring more than 24 hours should not be by road (Preferable mode of Transport is Train).
- Faculty/staff arranged students' un-official tours shall be treated as violation of MKCE Rules and the individuals
 organizing or arranging to organize such tours shall be subjected to appropriate disciplinary action.
- The capability of the participants to take part meaningfully in the activity must be taken into consideration when deciding the destination, itinerary and duration of the tour.
- The detailed tour schedule shall be submitted well in advance mentioning the date, time and place of departure and arrival, mode of travel (Bus/Train/Air/Ship/Other Modes), outstation accommodation arrangement details, list of important telephone numbers and addresses of the locations where the team is visiting including the phone-fax numbers of the hotel and local transport details.
- If Travel by outside bus, FC copy of the bus should be produced with request form.
- Each study tour should maintain student faculty ratio of 40 : 1.
- Lady faculty member should accompany girl students (It is applicable even if only one girl student is going for a trip)
- The Accompanying faculties should submit the undertaking letter
- All students should get approval from their Counselor/Class Advisor and parents.
- The faculty members accompanying the group may be mix of multiple languages talented in order to manage tour affairs confidently and successfully.
- Faculty should authorize the complete schedule
- Club coordinator should accompany in case of representing any club
- List of students with details (Male / female) to be submitted.
- At least one faculty member (either male or female) of the group needs to be fully acquainted with the touring stations so that they can guide and instruct students in an appropriate way accordingly to see that the students are not getting into any unforeseen incident or accident. Information relevant to the itinerary, such as the addresses and telephone numbers of the lodging places, location of the local police stations, hospitals, clinics or first-aid units as well as the emergency call numbers en route, should be collected. Such information should be given to the parents and the responsible person in the school before the trip for emergency needs.
- It is preferable to arrange two students (of same gender) or more to live in a room when allocating
 accommodation. This will facilitate provision of support to fellow members. Once the arrangement for
 accommodation is finalized, no student should be allowed to make any change without a proper reason so as
 to avoid causing confusion.

- No student shall be compelled to participate or to contribute money for any kind of tour just for the sake of fund
 management during the tour. In case of any such compulsion, the student(s) can report to the Faculty Incharge.
- The parents/guardians of the students (those who are participate in the tour) may be asked to submit an
 undertaking (by mail or fax or hard copy) stating that the parent is permitting their ward to participate in the tour
 with their knowledge and at their own risk. Students if they are hostellers, they should get special leave approval
 from their respective Hostel authorities.
- Exit and Entry should be at MKCE (Faculty and Students joining the group from their hometowns and leaving to their hometowns after the tour is not permitted under any circumstances.)
- Before leaving for Industrial Visit/ Sports Meet / Field Trip / Cultural trip etc., concerned faculty organizer shall arrange to procure adequate and proper FIRST AID KIT if necessary. The faculty members shall accompany the students throughout the tour/trip and shall stay along with the students.
- No faculty member attached to the tour shall alternate or replace other faculty/staff member on his/her behalf without prior proper approval of the HoD/Dean.
- It is advisable that at least one of the faculty or participants should know first aid and use of Fire extinguishers.
- Students should be reminded of the need to follow the Faculty instructions and observe all the safety
 regulations throughout the trip.
- After checking in a local hotel, the students should first find out where the "fire escape" is. They should
 also acquaint themselves with the exit direction, the escape route and the place of assembly in case of
 emergency.
- Faculty accompanying should pay attention to the weather forecasts and news broadcasts of the place of visit. If there is any change in weather or other conditions, a contingency plan should be worked out as soon as possible.
- The faculty should have full knowledge of the health condition of each participant in order to determine whether specific participant(s) should not be allowed to take part in the activities of the day. He/she should take timely and appropriate action having regard to the circumstances of individual cases.
- The faculty should also arrange for any sick member to see the doctor immediately and to take effective
 preventive measures according to the doctor's advice. If necessary, the faculty should inform the parents
 and the department regarding the students' health conditions as soon as possible.
- The faculty should bring along with him/her the necessary safety equipment for the tour, for example, a first
 aid box, communications equipment (mobile phones), torches, medicines, etc.
- The faculty should monitor the speed of the vehicle (bus) in which they are traveling to ensure it is within safety limits. He/she should remind the driver or the reception personnel of the importance of road safety when necessary.
- After returning from the tour, the concerned faculty team shall submit a BRIEF ARRIVAL REPORT to the HoD/Dean.
- Students attending the IV should submit an observation report.



M.KUMARASAMY COLLEGE OF ENGINEERING AnA: According humananana 1.2.18 alayam, Karur - 639 113

Department of mechanical engineering Industrial Visit Schedule III Year Boys (BATCH 2020 -2024)

Departure from college to kerala(Vagamon)	
Departure from conege to kerala vagamon)	10:30PM
Reach to vagamon	5:30AM
Refreshment	6:00 - 8:30AM
Break fast	8:30- 9:30AM
Kottamala view point 🦿	9:30-11:00Am
	11:00-12:30Am
Lunch	12:30-1:30Pm
Tunnel	1:30-2:30Pm
	2:00-4:30Pm
Tree house	4:30-5:30Pm
sucide point	5:30-6:30Pm
River crossing area	6:30-7:30Pm
Dinner	7:30-8:30Pm
stay at hotel	8:30Pm
Travel to cochin	5:30-8:00AM
Break fast	8:00-9:00Am
Company visit (2 companies)	9:00-12:00Pm
Lunch	12:30-1:30Pm
Boating with DJ	2:00-4:00Pm
Lulu mall &dinner	5:00-9:00pm
Arrival to college	7:30AM
	Reach to vagamon Refreshment Break fast Kottamala view point Idukki dam back side view point Lunch Tunnel Water falls Tree house sucide point River crossing area Dinner stay at hotel Travel to cochin • Break fast • Company visit (2 companies) Lunch Boating with DJ Lulu mall & dinner

dinator

0)

HOD

Principal

Dr. M. MOHAN PRASAD, M.E., M.B.A., Ph.D., Head of the Department Department of Mechanical Engineering

KARUR - 639 113, Tamil Nadu.

PRINCIPAL, M. Kumarasamy College of Engineering, THALAVAPALAYAM, M.Kumarasamy College of Engineering, KARUR - 639 113

- Letter of Undertaking for industrial tour given by Parents/Guardian

To,

Date: 31 16 21

The Principal M.Kumarasamy College of Engineering Karur-639113

Dear Sir,

SUB: Submission of "Industrial Tour Undertaking"--- Reg.

 We, Mr.
 Manickam
 Mrs.
 Gattya
 parent's

 of
 M. Dhanush
 bearing Register number
 92.7621800 0001

 studying in III -Semester, Department of Mechanical Engineering in M.Kumarasamy College of Engineering, Karur. Herewith voluntarily submitting the under taking.

We, the undersigned parents/guardian are aware that, our son/daughter is participating in the industrial tour organized by the Institute scheduled during 27.10.21 to 30.10.21 with our full acceptance and will be bearing all the expenditure incurred for the Industrial tour towards travel and other expenses from our end.

We shall ensure that our son/daughter shall abide by the college terms and conditions for industrial tour. We, hereby declare and confirm that the college shall not be held responsible in the event of any misfortune or accidents and/or personal injuries whether fatal or otherwise involving our son/daughter.

We shall undertake full responsibility of all the consequences should any other person or body suffer such accidents and/or personal injuries and/or damage to property as a result of our son/daughter negligent act during the period of industrial tour.

We further confirm that the college shall not be held responsible for our son/daughter misconduct or unlawful activity at all times during the period of industrial tour and shall obey the instructions of the faculty members who are accompanying during the industrial tour.

Yours truly,

Manickan (Parents/Guardian's Signature with date) Signature of the student Name of the Father / Guardian: Manickam Name of the Mother: Sattya Contact Address: 77/a, Amnar Nagan 3rd Cross, Kolanthanoor, Granthigram. Contact Phone No: 9500 350260

Letter of Undertaking for industrial tour given by Parents/Guardian

To,

Date: 21/10/22

The Principal M.Kumarasamy College of Engineering Karur-639113

Dear Sir,

SUB: Submission of "Industrial Tour Undertaking"-- Reg.

We, Mr. <u>S. Murugesan</u> Mrs. <u>MJ. Prabha</u> parent's of <u>NJ. Dharshan</u> bearing Register number <u>927621BME011</u> studying in III -Semester, Department of Mechanical Engineering in M.Kumarasamy College of Engineering, Karur. Herewith voluntarily submitting the under taking.

We, the undersigned parents/guardian are aware that, our son/daughter is participating in the industrial tour organized by the Institute scheduled during 27 to 30 with our full acceptance and will be bearing all the expenditure incurred for the Industrial tour towards travel and other expenses from our end.

We shall ensure that our son/daughter shall abide by the college terms and conditions for industrial tour. We, hereby declare and confirm that the college shall not be held responsible in the event of any misfortune or accidents and/or personal injuries whether fatal or otherwise involving our son/daughter.

We shall undertake full responsibility of all the consequences should any other person or body suffer such accidents and/or personal injuries and/or damage to property as a result of our son/daughter negligent act during the period of industrial tour.

We further confirm that the college shall not be held responsible for our son/daughter misconduct or unlawful activity at all times during the period of industrial tour and shall obey the instructions of the faculty members who are accompanying during the industrial tour.

Yours truly,

S. Morugeson

NJ. Warderel

Signature of the student

(Parents/Guardian's Signature with date) Name of the Father / Guardian: BS. Murugesan. Name of the Mother: NJ. Prabha Contact Address: EA-10, Rani Meyyammai nagar colony, Karikali, Dindugal. Contact Phone No: 9894590908.

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M.KUMARASAMY COLLEGE OF ENGINEERING NAAC Accredited Autonomous Institution Approved by ACTE & Antiated to Ana University 50 0001 2013 6 60 1400 2415 Certified Institution Thalavaoadware, Karur - 639 113.

DEPARTMENT OF MECHANICAL ENGINEERING REPORT OF INDUSTRIAL VISIT 2022-SHIPYARD

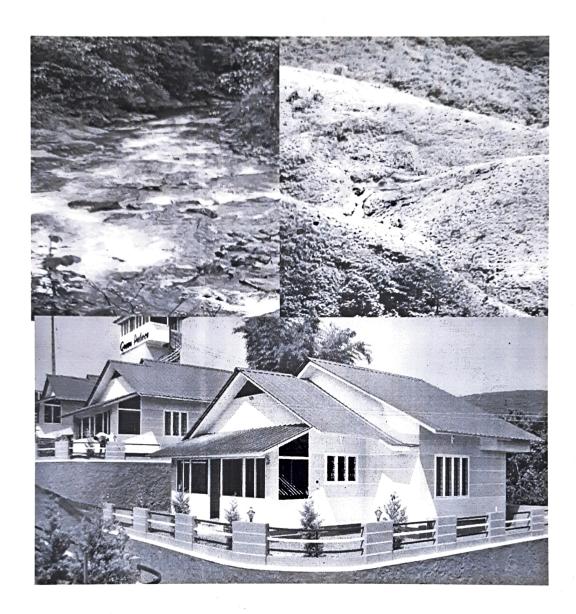
A day in Vagamon(15-09-2022):

We should sharply depart by 9.00pm from our college and start our journey to Vagamon via Dindugal road and we reach vagamon first for our refreshment and reach our favourite restaurant "Green Palace", Vagamon is a hill station located in Kottayam- Idukki border of Kerala. It has a cool climate with the temperature between 10-23°C during a summer midday. It is situated 1,100 metres above sea level.



Vagamon is a tiny plantation township in Central Travancore, Vagamon has an overtone of green. With a never-ending line of lush green hills, breathtaking ravines and meandering rivulets. A perfect tourist place situated 1200 meters above the sea level spot surrounded by the greenery of tea gardens , Fresh cool air, murmuring Pine forest ,small waterfalls , attractive meadows inviting you to vagamon.Reaching Vagamon itself is an extraordinary experience. The meandering road to Vagamon is cut in solid rock lined with pine forests. And as you wind your way through green capped hills, the rolling plains come into view thousands of feet below you.

This tourist place also has to offer Thangal Para, the Indo-Swiss Project and Kurisumala Ashram. Welcome to a land which would make you come back



For a paradise experience, for an unpolluted waft of fresh air, for a blissful moment to mingle with nature, to get inspired and to fill life with more joy and peace, come to Green Palace Residency, Vagamon. Known for its salubrious climate year round, Vagamon is carpeted in misty meadows, gurgling rivulets, tea gardens and bordered by forests. A lazy, slow, sleepy town devoid of the rush and bustle of a tourist destination, Vagamon's essential laid back atmosphere characterizes the Green Palace.

PINE FOREST

At a distance of 6 km from Vagamon Bus Stop, Vagamon Pine Forest is a manmade forest located at Vedikuzhi in the quaint hill town of Vagamon, Kerala. Situated on Vagamon - Elappara Road, it is one of the top places to visit in Vagamon.

Vagamon Pine Forest is a vast region occupied by lofty Pine trees thriving in the environment on steep slopes. It is a man-made forest created during the British regime of India, which still stands overlooking the enchanting Vagamon Valley. Towering over the valleys and meadows is the Vagamon Pine Forest, whose beauty has turned it into a popular and favorite location for filmmakers.

Vagamon Pine Forest is a must-visit destination in Vagamon and a paradise for nature lovers. The majestic pine trees on the slopes create an incredible view and also offers travelers some wonderful private moments amidst great natural surroundings. Te view is not only captivating but also quite awe-inspiring. Walking through the forest is like a therapeutic experience, and fills you with awe. Seldom crowded, visitors feel a sense of calm in the forest as they're far away from the hustle and bustle of the city.



And on the next day we move to kochin to make an industrial experience.

A Day in Kochin(17-09-2022):

I just had a week holiday trip to Kochi, the business capital of Kerala. The best way to enjoy always take the travel by water. Reach Marine drive and from there you have KTDC boats that will take you through the various islands in Kochi. The first one being the Willington Island, you can see lots of Bungalows which were build by Britishers. In the next Island have a Jewish Synagogue. I attaching the photo of it. There is famous Biriyani Hotel in Mattanchery, it is called as Kaikka's Biriyani. But we missed it since it gets over very fast and it is made in limited quantity. Moreover you can go for a boat ride in the Backwaters which is very much refreshing to the mind. Other places we went were there is a famous palace called Hill Palace near a place called Tripunithura. It is very large palace and lot of things to see. It even have a Deer park inside. Then we went to Kumbalangi there we get to know the real cultural and traditional food of Kerala. We get variety of fish dishes like Karemmen Polichathu, konju fry etc;- which all were delicious.

Then we take our studenst to sea blue shipyard private limited and Sea Blue Shipyard Ltd. is an ISO 9001-2015 certified Shipyard based in Kochi established in 2003, registered under the Companies Act. 1956. Our yard is built up in 4 acres of land in Vypin. Presently we are having three slipways ideal for hauling up and launching of medium type vessels and with wharfage for afloat repairs of vessels up to 120 metres long and 6.0 metres draft. The SBSL is located just opposite to the Vallarpadam International Container Transshipment Terminal. It is close to Cochin shipyard Ltd., Cochin Port Trust, International Ship repair Complex, Single Point Mooring Project and International Bunkering

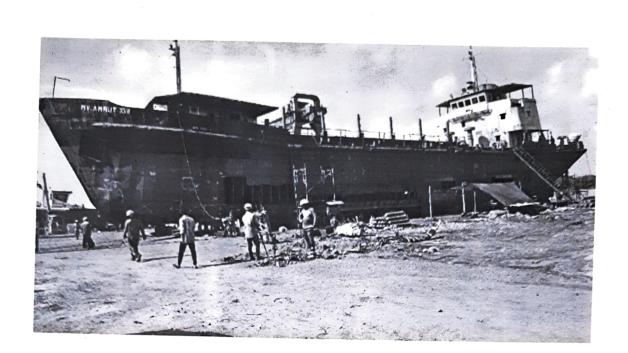


Terminal. All these are situated within a radius of 3km.

The Cochin Shipyard Limited is one of the best performing public sector companies in India. Set up in 1976 in the heart of the city, the company hit its first major milestone in a matter of four years, when it built Rani Padmini, a giant oil tanker in January 1980. Today, the shipyard is known for building the largest ships in the country and has proved its mettle by building tankers, bulkcarriers, tugs, patrol vessels, passenger vessels and so on.



The experts make a Good place to train your mind and job, work with your confidence, while doing the job you can train your skills by the experienced working methods of the workers.



A voyage on a leaf in the rippling back waters of Kerala. The rising sun bathes this paradise in golden hue and pours sparkling wine at dusk. This emerald bejewelled land truly is God's own country, and Grandeur, His favourite sail! Grandeur is the most luxurious house boats. It is especially made for loving couples. It has been meticulously designed and equipped for giving you utmost comfort. As you lie in your spacious bedroom, you can gaze at the sky through the glass ceiling or feel one with the nature around through the wall-less glass that ensconces you, made reflective for your privacy. You could snuggle in a large whirlpool in the bathroom as the boats pass by, oblivious of your frolicking behind the reflective glass window! The study offers TV/ games, entertainment and books. This converts into a children's room in case you are accompanied by them.

LULU MALL FINALLY:

Lulu Mall is the largest mall in India regarding total retail space of 1.7 million square feet. Situated in Edapally, Kochi, the mall sprawls over an extensive area of 17 acres with 215 outlets of restaurants, multiplex, food courts, entertainment zones, bowling alley, money exchange centres, arcade games and 5D cinema.With a parking space that can accommodate 3500 vehicles, the mall houses an ice skating rink of 5000 sq.ft. which is the largest in south India. Lulu mall has the largest central atrium with a translucent glass roof. Lulu mall was a maiden retail venture of Lulu group in India. The mall is a retail hallmark at the junction of two national highways NH 66 and NH 554. It

is a leading tourist attraction in Kochi. Apart from this, the mall created an Asia Book of Records in an attempt to pledge solidarity to Indian Soldiers. 5509 employees lit Deepavali lamps in the mall premises to deliver the message



SUBMITTED BY !. SABAREESHWARAN K (20BMEGO66).



M.KUMARASAMY

COLLEGE OF ENGINEERING

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Thalavapalayam, Karur - 639 113.

INDUSTRIAL VISIT STUDENTS FEED BACK

DEPARTMENT OF MECHANICAL ENGINEERING

Name of the Student (Optional)	ASHWIN M	Batch	: 2020-2024
Reg No. (Optional)	20BME 4007	Year / Sem	: 10 (7
Company Visited	: Sea Blue Shipyard 1+d	Date of Visit	: 17.09.2022

S.No	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Does the Industrial Visit matches with your Core Branch		5			
2	Explanation provided on the working Processes in the Industry					5
3	Did you understand the practical application of theories that you learned in lecture class	in				
4	Does the Trip Provide Opportunities to Learn New Technologies			~		
5	Improvement in academic performance after Industrial Visit			~		
6	Coordination of the Industrial visit was appropriate	5	· .			,
7	Are you satisfy with Travel, Boarding and Lodging Facilities					\sim
8	Overall I am happy with this Industrial visit				5	

Other comments / suggestions:

8 Student Signature (Optional)



h

M.KUMARASAMY

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Thalavapalayam, Karur - 639 113.

DEPARTMENT OF MECHANICAL ENGINEERING

INDUSTRIAL VISIT STUDENTS FEED BACK

Name of the Student (Optional)	AKILR	Batch	: 2020 - 2024
Reg No. (Optional)	20BtAEL oolp	Year / Sem	: 11 / 2
Company Visited	Sea Blue Shipyard Itd	Date of Visit	: 17.09.2022

S.No	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Does the Industrial Visit matches with your Core Branch					5
2	Explanation provided on the working Processes in the Industry					5
3	Did you understand the practical application of theories that you learned in lecture class	~				
4	Does the Trip Provide Opportunities to Learn New Technologies				5	
5	Improvement in academic performance after Industrial Visit				5	
6	Coordination of the Industrial visit was appropriate		5			
7	Are you satisfy with Travel, Boarding and Lodging Facilities	N				
8	Overall I am happy with this Industrial visit			~		

Other comments / suggestions:

Student Signature (Optional)

M.KUMARASAMY COLLEGE OF ENGINEERING

(Autonomous) Karur-639113.

INDUSTRIALVISIT/ CULTURAL VISIT/ FIELDTRIP/SPORTS MEET APPROVAL FORM

Department	Nameof theApplicant	Date
Mechanical	SaravanakumarS	27.10.22to30.10.22

Kindly readtheGuidelinesbefore filltheform

1	Typeof Visit	:	IndustrialVisit	
•			27 10 20228 10 202	
2	Date & Time of Departure	:	27.10.2022&10.30p.m	-
3	Date & Time of Arrival	:	30.10.2022 &08.30a.m	
4	Address & Phone Nos.(forcontact)	:	Karthick R (9159594640) &EmmanualL(9952622709)	
5	ModeofTravel	:	Train/Bus/OtherMode-Specify(EnclosedetailsinAnnexure1)	
6	Copy of Approval letter fromindustry	:	Yes/No(EnclosedetailsinAnnexure2)	
7	Accompanying Faculty Detailsand UndertakingLetter	:	Yes/No(EnclosedetailsinAnnexure3)	
8	ListofStudentsMale/Female	:	Yes/No(EnclosedetailsinAnnexure4)	
9	Accommodation Details withConfirmationletter	:	Yes/No(EnclosedetailsinAnnexure5)	
10	Undertaking Letter	:	Yes/No(EnclosedetailsinAnnex	
	FromStudents	•	IL IMIL	
11	Approval from HoD	•		
		•	Dr. M. MOHAN PRASAD, M.E., M.B.A., PL.D., Head of the Department	
	•		Department of Mechanical Engineering	
12	Approval from Dean	:	M.Kumarasamy College of Engineering,	
			KARUR - 639 113, Tamil Nadu.	
	WY COLL	GE OF	V V	
			Circuitheast 21 Sh	
		MOUS)		
		15	College of En	jineering,
Note	: TheFormshouldbesubmittedtwo	aspri	M. Kumarasamy Cong ortothedeparture THALAVAPALAYAM,	
			VADUR - 639 113	

KARUR - 639 113

Approvalafterchecking(CheckList)



ModeofTravel

Annexure1

SI.No	Details	ModeofTravel	Travel Details * withPhonenumber ofAgentand Driver Phone Number	ResponsiblePer sonHandling
1.	FromMKCEtoMysore	Bus	The Royal travels ,pollachi.Senthil kumar(9080381330)	Saravanakumar S(8754256821)
2.	From Coorg to MKCE	Bus	The Royal travels ,pollachi.Senthil kumar(9080381330)	Saravanakumar S(8754256821)

* If Travel by outside MKCE bus, FC copy of the bus should be attached.

Annexure2

Copyofthe ApprovalLetterfromIndustry

- Shouldcontaincleardate, time and number of days of Visit
- Letter shouldbebytheauthenticatedpersonfromtheIndustryminimumatManagerLevelwithseal.



HOD MECH <hodmech@mkce.ac.in>

Seeking Permission to Visit your esteemed organisation - Regd.

HOD MECH <hodmech@mkce.ac.in> To: "hrvijaysteel@gmail.com" <hrvijaysteel@gmail.com> Thu, Oct 20, 2022 at 1:34 PM

Warm Greetings from MKCE!

Dear Sir/Madam,

The M.Kumarasamy College of Engineering (Autonomous), Karur (TN), supports the cause of value based education, offering education ranging from Under graduate program including Management, Engineering. Seeks permission for the 2nd year B.E. - Mechanical Engineering students (Batch 2021-2025) to Visit your esteemed organization.

As part of the curriculum of 2nd year student industrial visit is mandatory, so as to provide with them the real insight of the working procedure of an esteemed organization such as yours and to fulfill the curriculum demand, we request you for the industrial visit. Kindly accord Permission to Visit your esteemed organization for a team of 60 Nos (58 Students & 2 Faculty) in the forenoon session as on

date of 28th October 2022 (Friday).

Your coordination in this regard will not only help the cause of education but will also strengthen the youth of the nation.

Waiting with Anticipation.

With Regards,

Dr.M.MOHAN PRASAD *M.E., MBA., Ph.D.* Head of the Department (In-Charge), Department of Mechanical Engineering, **M.K**umarasamy College of Engineering (Autonomous), Thalavapalayam - Post | KARUR - 639 113 | Tamil Nadu.



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Thalavapalayam, Karur - 639 113.



** Our Department Vision:

To create globally recognized competent Mechanical engineers to work in multicultural environment**

10/20/22, 4 11 PM



HOD MECH <hodmech@mkce.ac.in>

Seeking Permission to Visit your esteemed organisation - Regd.

HR Vijay Steel <hrvijaysteel@gmail.com> To: HOD MECH <hodmech@mkce.ac.in>

Thu, Oct 20, 2022 at 2:11 PM

To

Dr. M. Mohan Prasad,

Head, Department of Mechanical,

M. Kumarasamy College of Engineering,

Thalavapalayam, Karur - 639 001.

Respected Sir,

With Regards to your letter we wish to inform you that as requested we permit your II - B.E. Mechanical Engineering Students (58 no's) to have industrial visit on 28th October 2022.

Thanking you,

With Regards,

HR.

VIJAY STEELS N FORGINGS,

Metagalli Industrial Estate,

Mudran Nagar,

Shyadanahally,

Karnataka 570003

Dr. M. MOHAN PRASAD, M.E. M.B.A., Ph.D., Head of the Department Department of Mechanical Engineering Uepartment of Mechanical Engineering Department of Mechanical Engineering M.Rumachamicasamy College of Engineering N.Rumachamicasamy College of Engineering

On Thu, Oct 20, 2022, 1:34 PM HOD MECH Warm Greetings from MKCE!

Dear Sir/Madam,

The M.Kumarasamy College of Engineering (Autonomous), Karur (TN), supports the cause of value based education, offering education ranging from Under graduate program including Management, Engineering. Seeks permission for the 2nd year B.E. - Mechanical Engineering students (Batch 2021-2025) to Visit your esteemed organization.

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Your coordination in this regard will not only help the cause of education but will also strengthen the youth of the nation.

//mail.oconte.com/mail/u/1/2ik=109560007e&view=nt&search=all&nerminsaid=msn.@43A174710F2625020404284

Annexure3

Accompanying Faculty

SI.No	Name of the Faculty/Designation	Male/Female	Contact Mobile Number and Email	Alternate Contact In case of Emergency
1.	KARTHICK R	Male	9159594640	8754256821
2.	EMMANUAL L	Male	9952622709	7868804898

UNDERTAKINGLETTER-FACULTY

We here-by undertake that the Industrial Visit/ Cultural Visit/Field Trip is purely academic related and at any case.

We shall undertake full responsibility of the student's actions and behavior at all times during the course of Industrial Visit/Cultural Visit/ Field Trip/ Sports meet. We further undertake not to breach the safety guide lines of MKCE at any cost.

SI.No	Name	Designation/Dept.	Signature
1.	KARTHICK R	Asst.Prof/Mechanical	Apelut
2.	EMMANUAL L	Asst.Prof/Mechanical	temm fui
			20

1		tudents Details		Annexure4
2	Akash.M(927621BME001)	9345816442	9489826235	B+
3	Athish.N(927621BME006)	9791357598	9442223805	B+
	Baranikarthik.M(92761BME007)	6374577113	9788057745	B-
4	Dhanush.M(927621BME009)	9003889427	9500350260	A1+
5	Dharshan.M(927621BME011)	8668064472	9894590908	
6	Dinakar.K(927621BME013)	9789688622		A+
7	Gokulhasan.P(927621BME015)	9585610849	770868264	0+
8	Guhalselvan.G(927621BME018)		9944978905	0+
9	Gunasekaran.J(927621BME019)	9751992419	9751027918	B+
10		6383372401	9943910743	B+
11	Hariharasivaraman N(927621BME020)	9123542872	9665984239	0+
12	Imayavan.I(927621BME022)	9080506697	9781228549	A+
13	Kamesh.M.P(927621BME023)	9585514143	8760332646	B+
	Kavin.A(927621BME025)	8838916122	9080117651	0+
14	Kowshik.V(927621BME028)	7358806805	9789176601	• A+
15	Lokeshnath.M(927621BME029)	9345566582	8838148509	
16	Madhankumar.G(927621BME032)	8825845531	9750045280	B+
17	Malaravan.S(927621BME033)	8903475541		B+
18	Manoj.M.S(927621BME034)	9003800905	9965184141	0+
19	Muthusethupathi.S(927621BME036)		9788295588	0+
20	Muthukumar.S(927621BME038)	9500426379	9095950037	B+
21	,	8438046978	7639063665	0+
22	Prakash.M (927621BME041)	6369533455	9487203204	O+
23	Praneeth R(927621BME042)	9449572455	8248822826	A1+
4	Rajesh.M(927621BME046)	81108866666 -	9629875777	· 0+
	Sathivel.R(927621BME049)	9790640249	9787870964	В+
5	Samiyulla.V(927621BME050)	9360635388	9952504645	

SI.No	Reg.No.&Name	MobileNumber	ParentsNumber	Blood Group
26	Santhosh S V(927621BME053)	8667457536	9443189575	O+
27	Saranraj.R(927621BME054)	9080161546	8760389890	B+
28	Sasidharan.r(927621BME056)	8438320020		
29	SethumathavanM(927621BME057)	7339642585	9791778265	0+
30	Silambarasan.D(927621BME058)	9791708711	9842190711	B+
31	Sivasamy.P(927621BME059)	9940957398	8220168480	O+
32	Sriram.T(927621BME061)	7826941531	6380859520	B+
33	Sudeshkumar.J(927621BME062)	8072974093	9942302768	0+
34	Suguvanan.R(927621BME063)	6384212707	9443053742	0+
35	STRAJUDEEN H (221MED18)	8610855676	7845207771	0+
36	Tamilselvan V(927621BME065)	9025782836	9566386472	B+
37	Thiyaneshwar Ashoka.N (927621BM066)	9087591235 •	9843591235	O+
38	Vetrivel.S (927621BME067)	8248026829	8838540399	O+
39	Vigneshkarthikeyan.K (927621BME068)	6374325485	638136300	B+
40	Vimal Velan.S (927621bme069)	8870032873	7010951349	B+
41	Vimalkumar.R(927621BME070)	9080628476	9943350541	0+
42	Vishnudhar V(927621BME071)	9342909799	9751815599	A1B
43	Yugeshwaran S (927621BME074)	9786697005	9786602346	A+

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S.No	Name	Mobile No.	Parents Number	Blood Group
45	Gowsikan.R.S(22LME001)	7708595975	6383381793	A1+
46	Surya.c(22LME04)	6380297931	9943527744	O+
47	Prasanna K(22LME005)	7708200470	770864990	B+
48	Sukanth.M (22LME09)	6369252010	8838646451	O+
49	Nidish.M(22LME010)	7708894639	96773520199	B+
50	Surendar M (22LME012)	9629395963	9655931984	B+
51	Chandra prasaad.M (22LME017)	9677618578	7708595975	B+
52	Varadharaj B (22LME019)	8012710688	6380297931	O+
53	Abikkumar (22LME020)	9944768813	9851323149	O+
54	Sanjay.R (22LME026)	7708165735	9788857899	A1+
55	Santhosh Sivan.M (22LME032)	9043207010	9159456636	B+
56	Vishnu.R (22LME042)	7448462013	9789351091	B+

Annexure6

Accommodation

S.No	Name of the Hotel	Address and phone numbers	Responsible Person Handling	Remarks
1.	SK RESIDENCY	Harsha Road , Near Woodland Theathre,Mysore.	9080381330	Nil

UNDERTAKINGLETTER-STUDENTS

Wethestudentsof<u>**IIYearMechanicaldepartment</u>of<u>M.KumarasamyCollegeofEngineering,Karur** 639113</u>dohere-byundertakethatwearegoingonIndustrialVisit/CulturalVisit/FieldTripto<u>MYSORE</u>-organizedon Date<u>27.10.2022</u> departure date <u>27.10.2022</u> time <u>10.30p.m</u>.from MKCE and arrival on date<u>30.10.2022</u> time <u>08.00a.m</u> At MKCE_Faculty and staff of MKCE wil I not be held responsible for any mishap / eventualities during the trip.</u>

SI.No	Reg.No	Name	Signature
1	927621BME001	AKASH M	M. Mat
2	927621BME006	ATHISH N	N. Ahr
3	927621BME007	BARANI KARTHIK M	M. Baran Kan
4	927621BME009	DHANUSH M	M. Duhm.
5	927621BME011	DHARSHAN M	M. dharpm.
6	927621BME013	DINAKAR K	K. Dinakar.
7	927621BME015	GOKULHASAN P	P. Grokhand
8	927621BME018	GUHALSELVAN G	G. hilm
9	927621BME019	GUNASEKARAN J	Ce. Nr
10	927621BME020	HARIHARASIVARAMAN N	havitan
11	927621BME022	IMAYAVAN D	To-f-
12	927621BME023	KAMESH M P	Khunha
13	927621BME025	KAVIN A	Ry-
14	927621BME028	KOWSHIK V	Kalla
15	927621BME029	LOKESHNATH M	newpy -
16	927621BME032	MADHANKUMAR G	Medhén kunar
17	927621BME033	MALARAVAN S	R M
18	927621BME034	MANOOJ M S	B

19	927621BME036	MUTHU SETHUPATHY S	1.7
			and -
20	927621BME038	MUTHUKUMAR S	Muthit
21	927621BME041	PRAKASH M	Protech
22	927621BME042	PRANEETH R	CB-6-
23	927621BME046	RAJESH M	M. Que
24	927621BME049	SAKTHIVEL R	Safethivel_
25	927621BME050	SAMIYULLA V E	Sand
26	927621BME053	SANTHOSH S V	S.Y. Samt.
27	927621BME054	SARANRAJ R	Same R
28	927621BME056	SASITHARAN R	R. S.A.
29	927621BME057	SETHU MADHAVAN M	M. Luhm.
30	927621BME058	SILAMBARASAN D	P. Silanker.
31	927621BME059	SIVASAMY P	Sul 2
32	927621BME061	SRIRAM T	T. Srivan.
33	.927621BME062	SUDESH KUMAR J	Sudhup .
34	927621BME063	SUGUVANAN R	R Lighan.
35	22LME 018	SIRAJUDEEN H	Supan
36	927621BME065	TAMILSELVAN V	V. Tanker
37	927621BME066	THIYANESHWAR ASHOKA N	N. All
38	927621BME067	VETRIVEL S	Vetrivett
39	927621BME068	VIGNESH KARTHIKEYAN K	Katt
40	927621BME069	VIMAL VELAN S	S Phil
41	927621BME070	VIMALKUMAR R	the
42	927621BME071	VISHNU DHAR D	anhab
43	927621BME074-	YUGESHWARAN S	5 yugash
44	22LME001	GOWSIKAN R S	RS
45	22LME004	SURYA C	C. Swye.

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46	22LME005	PRASANNA K	Prose
47	22LME009	SUKANT K	Suket
48	22LME010	NIDISH M	funderha
49	22LME012	SURENDAR M	and -
50	22LME017	CHANDRA PRASAAD M	Chade Re
51	22LME019	VARADHARAJ B	Varado
52	22LME020	ABIK KUMAR V	Abite
53	22LME026	SANJAY R	R. SANTOY
54	22LME032	SANTHOSH SIVAN M	Santo b
55	22LME042	VISHNU R	R vish_

GUIDELINES TO GET FINAL APPROVAL FOR INDUSTRIAL VISIT/CULTURALVISIT/SPORTSMEETS/FIELDTRIP

- The Dean approving the Industrial Visit/Field Trip etc., shall ensure and endorse that the faculty members attached to the tour submit an undertaking stating that the tour is arranged only for Industrial Visit/ Field Trip connected to academics, and students will not be take nor allowed to mountain areas, rivers, canals, beaches, water parks, reservoirs, forest areas etc.,; and, they are personally liable and answerable for any such untoward incident taking place during the tour.
- Places with potential hazards, such as political unrest, negligent security, disease outbreaks, threatsofearthquakeorfrequentoccurrenceofCycloneandflood, should be avoided.
- If the mode of transport is by bus, overnight travel is strictly not permitted. Any travel requiring more than 24hoursshouldnotbebyroad(Preferable mode of Transport is Train).
- Faculty/staff arranged students' un-official tours shall be treated as violation of MKCE Rules and the individualsorganizingorarrangingtoorganizesuchtoursshallbesubjectedtoappropriatedisciplinaryaction.
- The capability of the participants to take part meaningfully in the activity must be taken into consideration when deciding the destination, it I nerary and duration of the tour.
- The detailed tour schedule shall be submitted well in advance mentioning the date, time and place of departure
 and arrival, mode of travel (Bus/Train/Air/Ship/Other Modes), outstation accommodation arrangement details, list
 of important telephone numbers and addresses of the locations where the team is visiting including thephonefax numbers of the hotel and local tran sport details.
- IfTravelbyoutsidebus,FCcopyofthebusshould beproduced withrequestform.
- Eachstudytourshouldmaintainstudentfaculty ratioof40:1.
- Lady faculty member should accompany girl students (It is applicable even if only one girl student isgoingforatrip)
- TheAccompanyingfacultiesshouldsubmittheundertakingletter
- AllstudentsshouldgetapprovalfromtheirCounselor/ClassAdvisorandparents.
- The faculty members accompanying the group may be mix of multiple languages talented in order to MKCE

should be given to the parents and the responsible person in the school before the trip foremergencyneeds.

- Itispreferabletoarrangetwostudents(ofsamegender)ormoretoliveinaroomwhenallocatingaccommodation. This
 willfacilitate provisionofsupporttofellow members. Once the arrangement foraccommodation is finalized,no
 student should be allowed to make any change without a proper reason so asto avoidcausingconfusion.
- No student shall be compelled to participate or to contribute money for any kind of tour just for the sake of fundmanagementduringthetour Incaseofanysuchcompulsion, the student(s) can report to the FacultyIncharge.
- The parents/guardians of the students (those who are participate in the tour) may be asked to submit
 anundertaking (by mail or fax or hard copy) stating that the parent is permitting their ward to participate in the
 tourwith their knowledge and at their own risk. Students if they are hostellers, they should get special leave
 approvalfromtheirrespectiveHostelauthorities.
- Exitand Entry should beat MKCE (Faculty and Students joining the group from their hometowns and leavingtotheirhometownsafterthetouris notpermittedunderanycircumstances)
- Before leaving for Industrial Visit/ Sports Meet / Field Trip / Cultural trip etc., concerned faculty organizer shallarrange to procure adequate and properFIRST AID KIT if necessary. The faculty members shall accompanythestudentsthroughoutthetour/tripandshall stayalongwiththestudents.
- No faculty member attached to the tour shall alternate or replace other faculty/staff member on his/her behalf without prior proper approval of the HoD /Dean.
- ItisadvisablethatatleastoneofthefacultyorparticipantsshouldknowfirstaidanduseofFireextinguishers.
- Studentsshouldberemindedoftheneedtofollowthe Faculty instructions and observe all the safetyregulationsthroughout thetrip.
- Afterchecking in a localhotel, the students should first findout where the "fire escape" is. They should also acquaint
 themselves with the exit direction, the escape route and the place of assembly in case of emergency.
- Faculty accompanyingshouldpayattentiontotheweatherforecastsandnewsbroadcastsof the place ofvisit. If there is any change in weather or other conditions, a contingency plan should be worked out assoon aspossible.
- The faculty should have full knowledge of the health condition of each participant in order to determinewhether specific participant(s) should not be allowed to take part in the activities of the day. He/she shouldtaketimelyandappropriateactionhavingregardtothecircumstancesofindividualcases.
- The faculty should also arrange for any sick member to see the doctor immediately and to take
 effectivepreventive measuresaccordingtothedoctor'sadvice. If necessary, the faculty should inform the
 parentsandthedepartment regarding the students' health conditions as soon as possible.
- The faculty should bring along with him/herthe necessary safety equipmentforthe tour, for example, a first aid box, communications equipment (mobile phones),torches, medicines, etc.
- The faculty should monitor the speedof the vehicle (bus) in which they are traveling to ensure it is withinsafety
 limits. He/she should remind the driver or the reception personnelofthe importance of road
 safetywhennecessary.
- After returning from the tour, the concerned faculty team shall submit a BRIEF ARRIVAL REPORT to the HoD/Dean:
- StudentsattendingthelVshouldsubmitanobservationreport.

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Industrial Visit Report-JK Tyres, Mysore

Dear Sir / Madam,

We have visit to JK Tyres Company in Mysore on 28 October 2022. It was an Industrial visit for the students of 2nd year B.E., Mechanical Engineering. The Students are very excited about the visit as they would be able to see the manufacturing process of tyres and also get an insight about the working of the industries. The visit started with a safety briefing by the JK Tyres team.

They explained to us the importance of safety in the industry and how we should follow the safety rules while we are inside the factory. After the briefing, we were taken to the different sections of the factory where we saw the process of tyre manufacturing. We were also shown the process of vulcanization and testing of tyres. The students were very impressed by the working of the factory and the way the tyres were manufactured.

After the factory visit, we were taken to the JK tyres office where we were shown a presentation about the company and its products. We were also given a tour of the office and shown the different departments. The students were very impressed by the working of the company and the way it manufactures its products. Overall, it was a very informative and enjoyable visit for the students. They learnt lot of things there.

Also there we have seen the production of tyres and we have known in that place that they have given a large sized tyres for our Indian Army about 40 Lakhs. The manufacturing of tyres was amazing and wonderful. It is so secure and safely they manufactured tyres by machines. The machines was too big and also they show that the Kneadable Rubber material that have been blended in a mixer is



M.KUMARASAMY

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Thalavapalayam, Karur - 639 113.

DEPARTMENT OF MECHANICAL ENGINEERING

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INDUSTRIAL VISIT STUDENTS FEED BACK

Name of the Student (Optional)	M HANUSH M	Batch	: 2021 - 2025
Reg . No. (Optional)	927621 BMEDII	Year / Sem	: 11 / 10
Company Visited	JK TUYES, MUCOVA	Date of Visit	: 28.10.2022

IK Types, Mysore

S.No	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Does the Industrial Visit matches with your Core Branch	~				
2	Explanation provided on the working Processes in the Industry	~				
3	Did you understand the practical application of theories that you learned in lecture class			~		
4	Does the Trip Provide Opportunities to Learn New Technologies		,	~		
5	Improvement in academic performance after Industrial Visit	~				
6	Coordination of the Industrial visit was appropriate			~		
7	Are you satisfy with Travel, Boarding and Lodging Facilities			5		
8	Overall I am happy with this Industrial visit	0				

Other comments / suggestions:

Student Signature (Optional)



M.KUMARASAMY COLLEGE OF ENGINEERING

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Thalavapalayam, Karur - 639 113.

DEPARTMENT OF MECHANICAL ENGINEERING

INDUSTRIAL VISIT STUDENTS FEED BACK

Name of the Student (Optional)	SRIRAM T	Batch	: 2021 - 2025
Reg . No. (Optional)	987681BME061	Year / Sem	: 1/11
Company Visited	JK TYRES, MYSORE	Date of Visit	: 28.10.2022

S.No	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Does the Industrial Visit matches with your Core Branch	N				
2	Explanation provided on the working Processes in the Industry					
3	Did you understand the practical application of theories that you learned in lecture class				~	
4	Does the Trip Provide Opportunities to Learn New Technologies				~	
5	Improvement in academic performance after Industrial Visit	V				
6	Coordination of the Industrial visit was appropriate				~	
7	Are you satisfy with Travel, Boarding and Lodging Facilities		~			
8	Overall I am happy with this Industrial visit				~	

Other comments / suggestions:

Stikay. T

Student Signature (Optional)