



PRESIDENCY UNIVERSITY

(Established under the Presidency University Act, 2013 of the Karnataka Act 41 of 2013)

Name of the School: School of Engineering

Name of the Department: Mechanical Engineering

Area of Specialization: Material science/ Surface engineering

Name of the Faculty Member/Members: Dr. Lokesh GN

Title of the Value Added Course: Unconventional Machining

Duration: [30 hours]

Course Code: MECH/007

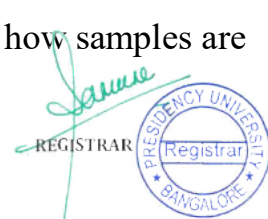
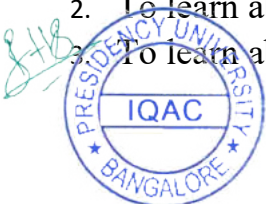
Introduction to the Course:

Unconventional machining process is a special type of machining process in which there is no direct contact between the tool and the work piece. In unconventional machining, a form of energy is used to remove unwanted material from a given work piece. In several industries, hard and brittle materials like tungsten carbide, high speed steels, stainless steels, ceramics etc., find a variety of applications. Such materials are machined with the help of conventional machining processes, either the tool undergoes extreme wear (while machining hard work piece) or the work piece material is damaged (while machining brittle work piece). This is because, in conventional machining, there is a direct contact between the tool and the work piece. Large cutting forces are involved and material is removed in the form of chips. Huge amounts of heat is produced in the work piece. This induces residual stresses, which degrades the life and quality of the work piece material. Hence, conventional machining produces poor quality work piece with poor surface finish. To overcome all these drawbacks, Advanced machining processes plays a vital role to machine hard and brittle materials in order to get better dimensional accuracy.

Prerequisites of the course: Manufacturing Process, Material science

Course Objective:

1. To learn about the various techniques used in nanofabrication and characterization
2. To learn about different imaging techniques
3. To learn about the basic function of the equipment and how samples are



prepared and measured

Course Outcomes: On successful completion of the course the students shall be able to:

1. Summarize the needs and classification of unconventional machining process.
2. Explain the working principle of energy based machining process.
3. Compare the merits, demerits and applications of unconventional machining process.
4. Select the material and tool with respect to the process and parameters.



Course Content: [Briefly mention all the important topics to be covered in this course]

Module 1:

Introduction: Limitation of conventional manufacturing processes, need of unconventional manufacturing process and its classification. Principle and working and applications of unconventional machining process

Module 2:

Mechanical energy based Unconventional machining: Abrasive jet machining (AJM), Water jet machining (WJM), Abrasive water jet machining (AWJM), Ultrasonic machining (USM).

Electro thermal energy based Unconventional machining: Electro-discharge machining (EDM), Wire- electro discharge machining (WEDM).

Module 3;

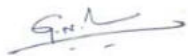
Chemical energy based: Electrochemical machining (ECM), Chemical machining,

High energy density methods: Laser beam machining (LBM), Electron beam machining (EBM), Plasma arc machining (PAM)

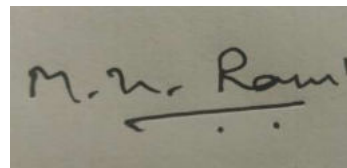
Hybrid machining: Electro chemical discharge machining (ECDM), Ultrasonic assisted EDM, Electro chemical discharge grinding, Electro discharge coating.

Micro fabrication: Lithography, Thin film deposition like oxidation, PVD, CVD etc., Etching.

Name of the Faculty Member



(Dr. Lokesh GN)



Approved by HOD



Department of Mechanical Engineering

School of Engineering

| STUDENT ID NO | STUDENT NAME | 12-09-2020 | 13-09-2020 | 14-09-2020 | 15-09-2020 | 16-09-2020 | 17-09-2020 | 18-09-2020 | 19-09-2020 | 20-09-2020 | 21-09-2020 | 22-09-2020 | 23-09-2020 | 24-09-2020 | 25-09-2020 | 26-09-2020 | Total classes | Total classes attended | Percentage attended |
|---------------|------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|---------------|------------------------|---------------------|
| | | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | | | | |
| 20171MEC0026 | ANNADURAI RAHUL | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 30 | 26.00 | 86.67 |
| 20171MEC0028 | ARIJIT JAGADISH | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 30 | 17.00 | 56.67 |
| 20171MEC0038 | BHAVANA R | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28.00 | 93.33 |
| 20171MEC0043 | C PRAMOD | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28.00 | 93.33 |
| 20181LME0018 | KUMAR M | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 26.00 | 86.67 |
| 20181MEC0031 | AVINASH | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 26.00 | 86.67 |
| 20181MEC0034 | AVULADODDI PAVAN KUMAR | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 26.00 | 86.67 |
| 20181MEC0042 | BHARGAVA S | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 30 | 26.00 | 86.67 |
| 20181Mec9029 | YASHWANTH V | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30.00 | 100.00 |
| 20191MEC0016 | ALLEN K ABRAHAM | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 26.00 | 86.67 |
| 20191MEC0070 | M U TEJAS GOWDA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 30 | 5.00 | 16.67 |
| 20191PET0036 | MOHAMMED ZAIN Y C | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 26.00 | 86.67 |



Presidency University, Bengaluru
Value Added Course Marksheet
School of Engineering

| Course Code : | | MECH007 | | Academic Year : | | | 2020-2021 | |
|---------------|--------|--------------------------|------------------------|------------------------------------|----------------------|--------------|--------------------------------------|--------|
| Course Name : | | Unconventional Machining | | Semester : | | | Odd Semester | |
| | | | | Instructor-in-Charge Name : | | | Dr. Lokesh GN | |
| | | | | Instructor-in-Charge Employee ID : | | | PUNIV00974 | |
| S. No | UID No | Roll No | Name | School (e.g. SoE/SoL etc) | Attendance (in %) | Marks (100M) | Eligible for Certificate (Y/N) | Remark |
| 1 | | 20171MEC0026 | ANNADURAI RAHUL | SoE | 87% | 72 | Y | |
| 2 | | 20171MEC0028 | ARJIT JAGADISH | SoE | 57% | 70 | Y | |
| 3 | | 20171MEC0038 | BHAVANA R | SoE | 93% | 85 | Y | |
| 4 | | 20171MEC0043 | C PRAMOD | SoE | 93% | 77 | Y | |
| 5 | | 20181LME0018 | KUMAR M | SoE | 87% | 82 | Y | |
| 6 | | 20181MEC0031 | AVINASH | SoE | 87% | 80 | Y | |
| 7 | | 20181MEC0034 | AVULADODDI PAVAN KUMAR | SoE | 87% | 73 | Y | |
| 8 | | 20181MEC0042 | BHARGAVA S | SoE | 87% | 80 | Y | |
| 9 | | 20181Mec9029 | YASHWANTH V | SoE | 100% | 78 | Y | |
| 10 | | 20191MEC0016 | ALLEN K ABRAHAM | SoE | 87% | 80 | Y | |
| 11 | | 20191MEC0070 | M U TEJAS GOWDA | SoE | 17% | 39 | Y | |
| 12 | | 20191PET0036 | MOHAMMED ZAIN Y C | SoE | 87% | 84 | Y | |
| | | | | | | | 12 | |

Name of Course Instructor 1: Dr. Lokesh GN
Employee ID of Course Instructor 1: PUNIV00974


Signature of Instructor-in-Charge





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Name of the School: School of Engineering

Name of the Department: Mechanical Engineering

Area of Specialization: Material science/ Surface engineering

Name of the Faculty Member/Members: Dr. B.S Praveen

Kumar Title of the Value Added Course: Nanotechnology

Duration: [30 hours] [From 7th Sep 2020 to 10th Dec2020]

Course Code: MECH/701

Introduction to the Course:

How can we create nano-structures that are 10,000 times smaller than the diameter of a human hair? How can we “see” at the nano-scale? Through instruction and demonstrations, in this course you will obtain a rich understanding of the capabilities of nanotechnology tools, and how to use this equipment for nano-scale fabrication and characterization. The nanoscale is the next frontier of the Maker culture, where designs become reality. To become a Nanotechnology Maker pioneer, we will introduce you to the practical knowledge, skills, and tools that can turn your nanotechnology ideas into physical form and that enable you to image objects at the nano-scale. Nano-fabrication, electron beam microscopy, and nano-characterization will be dealt.

Prerequisites of the course: Manufacturing Process, Material science

Course Objective:

1. To learn about the various techniques used in nanofabrication and characterization
2. To learn about different imaging techniques
3. To learn about the basic function of the equipment and how samples are prepared and measured.



Significance:

The knowledge in the subject may help the student to get a job in manufacturing sector, automobile sector and electronic industry. This can be further taken up as a research work in the field of nanotechnology for continuous learning.

Course Outcomes: On successful completion of the course the students shall be able to:

CO1: Identify the different nanofabrication techniques and characterization

CO2: Explain the different imaging techniques

CO3: Explain about nanoscale measurements

Course Content: [Briefly mention all the important topics to be covered in this course]

Module 1**Introduction to Nanotechnology**

Welcome to Nanotechnology! In this module, you will learn some of the basics of nanofabrication and nanocharacterization techniques as well as specific applications of nanotechnology in commercial products. You'll be able to explain why a cleanroom and vacuum environment are necessary for creating nanotechnology products. Finally, you will be able to explain how we use light, x-rays, and electron beams to characterize objects at the nanoscale

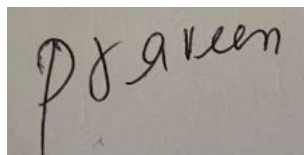
Module 2:**Nano Measurement and Characterization Tools: Scanning Electron Microscopy and Energy-Dispersive X-ray Spectroscopy**

After this module, you will be able to explain sample preparation and imaging techniques used in scanning electron microscopy. You will also be able to explain the benefits of environmental scanning electron microscopy. Furthermore, you will discover how energy-dispersive x-ray spectroscopy can be paired with scanning electron microscopy to gain elemental information about samples.

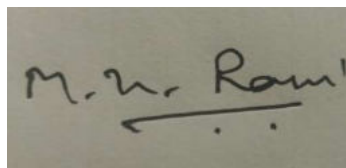
Module 3;**Nano Measurement and Characterization Tools: Transmission Electron Microscopy**

In this module, we will look at transmission electron microscopy and cryo-transmission electron microscopy. You will learn to describe the basic function of the equipment as well as how samples are prepared and imaged using these techniques.

Name of the Faculty Member



.(Praveen Kumar)



Approval by the HOD



Department of Mechanical Engineering

School of Engineering

| STUDENT ID NO | STUDENT NAME | 12-09-2020 | 13-09-2020 | 14-09-2020 | 15-09-2020 | 16-09-2020 | 17-09-2020 | 18-09-2020 | 19-09-2020 | 20-09-2020 | 21-09-2020 | 22-09-2020 | 23-09-2020 | 24-09-2020 | 25-09-2020 | 26-09-2020 | Total classes | Total classes attended | Percentage attended |
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| | | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | | | | | |
| 20191MEC9018 | ANIL H | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87 |
| 20191MEC0129 | MAHESH NAIDU | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 30 | 25 | 74 |
| 20191MEC0135 | NOOR MOHAMMAD | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 26 | 80 |
| 20181ECE0151 | RAVI BASIREDDY | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 30 | 26 | 77 |
| 20181MEC0193 | SHAMANTH BS | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87 |
| 20171MEC0167 | PULICHERLA BALA SAI SUDARSHAN REDDY | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87 |
| 20171MEC0170 | RAGHAV J A | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87 |
| 20171MEC0183 | SACHIN B R | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87 |
| 20181CSE0726 | SWATHI N | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87 |
| 20181ECE0098 | RUCHITH GURURAJ | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87 |
| 20181ECE0165 | CHALAPATI ANISH | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87 |
| 20181MEC0077 | HAREESH CHANNAPPAGOU DAR | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 28 | 87 |
| 20181MEC0081 | HEMANTHA S V | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87 |

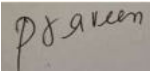


Presidency University, Bengaluru
Value Added Course Marksheet
School of Engineering

2

| Course Code : | | MECH701 | | Academic Year : | | | 2020-2021 | |
|---------------|--------|----------------|-------------------------------------|------------------------------------|----------------------|--------------|--------------------------------------|--------|
| Course Name : | | Nanotechnology | | Semester : | | | Odd Semester | |
| | | | | Instructor-in-Charge Name : | | | Dr. B.S Praveen | |
| | | | | Instructor-in-Charge Employee ID : | | | PUNIV00970 | |
| S. No | UID No | Roll No | Name | School (e.g. SoE/Sol. etc) | Attendance (in %) | Marks (100M) | Eligible for Certificate (Y/N) | Remark |
| 1 | | 20191MEC9018 | ANIL H | SoE | 87% | 82 | Y | |
| 2 | | 20191MEC0129 | MAHESH NAIDU | SoE | 74% | 84 | Y | |
| 3 | | 20191MEC0135 | NOOR MOHAMMAD | SoE | 80% | 85 | Y | |
| 4 | | 20181ECE0151 | RAVI BASIREDDY | SoE | 77% | 79 | Y | |
| 5 | | 20181MEC0193 | SHAMANTH BS | SoE | 87% | 70 | Y | |
| 6 | | 20171MEC0167 | PULICHERLA BALA SAI SUDARSHAN REDDY | SoE | 87% | 79 | Y | |
| 7 | | 20171MEC0170 | RAGHAV J A | SoE | 87% | 83 | Y | |
| 8 | | 20171MEC0183 | SACHIN B R | SoE | 87% | 77 | Y | |
| 9 | | 20181CSE0726 | SWATHI N | SoE | 87% | 85 | Y | |
| 10 | | 20181ECE0098 | RUCHITH GURURAJ | SoE | 87% | 78 | Y | |
| 11 | | 20181ECE0165 | CHALAPATI ANISH HAREESH | SoE | 87% | 74 | Y | |
| 12 | | 20181MEC0077 | CHANNAPPAGAUDAR | SoE | 87% | 78 | Y | |
| 13 | | 20181MEC0081 | HEMANTHA S V | SoE | 87% | 77 | Y | |
| | | | | | | | 13 | |

Name of Course Instructor 1: Dr. B.S Praveen
Employee ID of Course Instructor 1: PUNIV00970


Signature of Instructor-in-Charge





PRESIDENCY UNIVERSITY

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Name of the School: School of Engineering

Name of the Department: Mechanical Engineering

Area of Specialization: Thermal Engineering

Name of the Faculty Member: Dr. Devendra

Title of the Value Added Course: Computational Fluid Dynamics in ANSYS

Duration: [30 hours]

Course Code: MECV0013

Introduction to the Course:

In today's competitive world, simulation has become an important tool for design and operation control. It helps to find the quick and accurate results throughout design and manufacturing as well as during end use. ANSYS FLUENT software contains the broad physical modeling capabilities needed to model flow, turbulence, heat transfer, and reactions for industrial applications ranging from air flow over an aircraft wing to combustion in a furnace, from bubble columns to oil platforms, from blood flow to semiconductor manufacturing, and from clean room design to wastewater treatment plants. This simulation software allows you to predict, with confidence, the impact of fluid flows and heat transfer on your product..

Prerequisites of the course:

It is assumed that audiences have appreciation for physics and basic Fluid Mechanics.

Course Objective:

The objective is to prepare the audience for basic usage and explain the capabilities of the software.



Course Outcomes: On successful completion of the course the students shall be able to:

01 to understand problem and get important parameters.

02 Setup problem using different CFD tools such as Fluent, Design modeler, Ansys meshing etc.

03 Compare of experimental or analytical data or available high quality CFD data to your own CFD analysis

04 Solve any CFD problem from starting to final results

Course Content: [Briefly mention all the important topics to be covered in this course]

Module 1:

Overview of ANSYS Workbench, how to launch Workbench? Its Capabilities and file structure Workbench and DM interface details, Type of CAD modeling and GUI navigation How to set & solve Multi-physics problem (FSI)

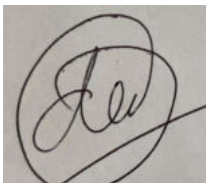
Module 2:

Concept of Plane & Sketch, sketching interface & toolbox, how to create Planes and Sketches How to Draw, Modify, Dimension and Constrain sketches How to create and modify 2D and 3D geometry

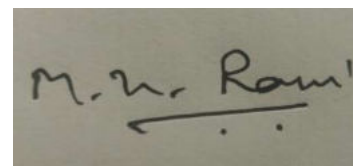
Module 3;

What is the ANSYS Meshing? How to launch ANSYS Meshing? Overview on Meshing methods & Mesh controls ANSYS Meshing graphics user interface. Algorithms for Tetrahedral Meshing. Difference between Patch dependent and Patch conformal Different methods for Hex Meshing (Sweep and Multizone) How to create Structured mesh

Name of the Faculty Member



(Dr. Devendra)



Approved by HOD



Department of Mechanical Engineering

School of Engineering

| STUDENT ID NO | STUDENT NAME | 12-09-2020 | 13-09-2020 | 14-09-2020 | 15-09-2020 | 16-09-2020 | 17-09-2020 | 18-09-2020 | 19-09-2020 | 20-09-2020 | 21-09-2020 | 22-09-2020 | 23-09-2020 | 24-09-2020 | 25-09-2020 | 26-09-2020 | Total classes | Total classes attended | Percentage attended |
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| 20171MEC0002 | AALDERIK JUDE J | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 100 |
| 20171MEC0009 | ADARSH BHAT | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 100 |
| 20171MEC0018 | AKSHATH KR | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 29 | 96 |
| 20171MEC0020 | AMARNATH GOWDA C | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 90 |
| 20171MEC0041 | BURRAMSETTY JAYANT | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 100 |
| 20171MEC0044 | CHAITANYAA K K | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 100 |
| 20171MEC0045 | CHANDAN K R | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 100 |
| 20171MEC0047 | CHANDRASHEKAR A | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 29 | 96 |
| 20171MEC0084 | KARTHICK S | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 30 | 28 | 90 |
| 20171MEC0091 | KOLLI SURYA TEJA | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 100 |
| 20171MEC0099 | SRIKANTH MS | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 100 |
| 20171MEC0131 | MOHAMMED SAFWAN | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 100 |



Presidency University, Bengaluru
Value Added Course Marksheet
School of Engineering

4

| Course Code : | | MECV0013 | | | Academic Year : | | | 2020-2021 | |
|---------------|--------|---------------------------------------|--------------------|-------------------------------|------------------------------------|--------------|--------------------------------------|--------------|--|
| Course Name : | | Computational Fluid Dynamics in ANSYS | | | Semester : | | | Odd Semester | |
| | | | | | Instructor-in-Charge Name : | | | Dr. Devendra | |
| | | | | | Instructor-in-Charge Employee ID : | | | PUNIV00835 | |
| S. No | UID No | Roll No | Name | School (e.g. SoE/Sol. etc) | Attendance (in %) | Marks (100M) | Eligible for Certificate (Y/N) | Remark | |
| 1 | | 20171MEC0002 | AALDERIK JUDE J | SoE | 100% | 76 | Y | | |
| 2 | | 20171MEC0009 | ADARSH BHAT | SoE | 100% | 72 | Y | | |
| 3 | | 20171MEC0018 | AKSHATH KR | SoE | 96% | 77 | Y | | |
| 4 | | 20171MEC0020 | AMARNATH GOWDA C | SoE | 90% | 83 | Y | | |
| 5 | | 20171MEC0041 | BURRAMSETTY JAYANT | SoE | 100% | 70 | Y | | |
| 6 | | 20171MEC0044 | CHAITANYAA K K | SoE | 100% | 78 | Y | | |
| 7 | | 20171MEC0045 | CHANDAN K R | SoE | 100% | 76 | Y | | |
| 8 | | 20171MEC0047 | CHANDRASHEKAR A | SoE | 96% | 71 | Y | | |
| 9 | | 20171MEC0084 | KARTHICK S | SoE | 90% | 77 | Y | | |
| 10 | | 20171MEC0091 | KOLLI SURYA TEJA | SoE | 100% | 73 | Y | | |
| 11 | | 20171MEC0099 | SRIKANTH MS | SoE | 100% | 74 | Y | | |
| 12 | | 20171MEC0131 | MOHAMMED SAFWAN | SoE | 100% | 73 | Y | | |
| | | | | | | | 12 | | |

Name of Course Instructor 1: Dr. Devendra
Employee ID of Course Instructor 1: PUNIV00835


Signature of Instructor-in-Charge





PRESIDENCY UNIVERSITY

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Name of the School: School of Engineering

Name of the Department: Mechanical Engineering

Area of Specialization: Material science/ Surface engineering

Name of the Faculty Member/Members: Mr. Narendra Singh

Title of the Value Added Course: Aptitude

Duration: [30 hours] **Course Code:** MECV0033

Introduction to the Course:

An aptitude is a component of a competence to do a certain kind of work at a certain level. Outstanding aptitude can be considered "talent." An aptitude may be physical or mental. Aptitude is inborn potential to do certain kinds of work whether developed or undeveloped.

Prerequisites of the course: Basic Maths

Course Objective:

1. To learn about the various techniques used in nanofabrication and characterization
2. To learn about different imaging techniques
3. To learn about the basic function of the equipment and how samples are prepared



Course Outcomes: On successful completion of the course the students shall be able to:

CO1: Identify different types of numbers i: e real number, complex number, integers, rational number,irrational numberetc.

CO2: Explain the importance of percentage, Profit and loss and learn how to work with it.

CO3: Discuss the role of time and work, simple and compound interest in the daily life and how to solve problem.

Course Content: [Briefly mention all the important topics to be covered in this course]

Module 1

Number system

The number system or the numeral system is the system of naming or representing numbers. We know that a number is a mathematical value that helps to count or measure objects and it helps in performing various mathematical calculations.

Module 2:

Profit and loss

After this module, you will be able to explain sample preparation and imaging techniques used in scanning electron microscopy. You will also be able to explain the benefits of environmental scanning electron microscopy. Furthermore, you will discover how energy-dispersive x-ray spectroscopy can be paired with scanning electron microscopy to gain elemental information about samples.

Module 3;

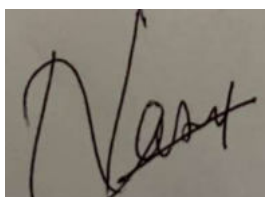
Profit and loss

An income statement or profit and loss account[1] (also referred to as a profit and loss statement (P&L), statement of profit or loss, revenue statement, statement of financial performance, earnings statement, statement of earnings, operating statement, or statement of operations)[2] is one of the financial statements of a company and shows the company's revenues and expenses during a particular period.[1]

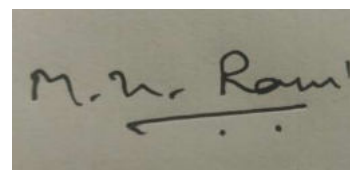
It indicates how the revenues (also known as the “top line”) are transformed into the net income or net profit (the result after all revenues and expenses have been accounted for). The purpose of the income statement is to show managers and investors whether the company made money (profit) or lost money (loss) during the period being reported.

An income statement represents a period of time (as does the cash flow statement). This contrasts with the balance sheet, which represents a single moment in time.

Name of the Faculty Member



Mr. Narendra singh



Approval by the HOD



Department of Mechanical Engineering

School of Engineering

| STUDENT ID NO | STUDENT NAME | 12-09-2020 | 13-09-2020 | 14-09-2020 | 15-09-2020 | 16-09-2020 | 17-09-2020 | 18-09-2020 | 19-09-2020 | 20-09-2020 | 21-09-2020 | 22-09-2020 | 23-09-2020 | 24-09-2020 | 25-09-2020 | 26-09-2020 | Total classes | Total classes attended | Percentage attended |
|---------------|---------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|---------------|------------------------|---------------------|
| | | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | | | | |
| 20181MEC0060 | Dileep L | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 88 |
| 20181MEC0098 | Komma Venkatesh Sai | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87 |
| 20181MEC0136 | Niranjan S M | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 88 |
| 20181MEC0164 | Raghavendra K | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 30 | 24 | 87 |
| 20181MEC0172 | Rohit G | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 30 | 26 | 87 |
| 20181MEC0216 | Sudheer Kumar | 2 | 2 | 2 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 26 | 80 |

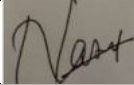


Presidency University, Bengaluru
Value Added Course Marksheet
School of Engineering

5

| Course Code : | | MECV0033 | | Academic Year : | | | 2020-2021 | |
|---------------|--------|--------------|---------------------|------------------------------------|----------------------|--------------|--------------------------------------|--------|
| Course Name : | | Aplitude | | Semester : | | | Odd Semester | |
| | | | | Instructor-in-Charge Name : | | | Mr. Narendra Singh | |
| | | | | Instructor-in-Charge Employee ID : | | | PUNIV00866 | |
| S. No | UID No | Roll No | Name | School (e.g. SoE/SoL etc) | Attendance (in %) | Marks (100M) | Eligible for Certificate (Y/N) | Remark |
| 1 | | 20181MEC0060 | Dileep L | SoE | 88% | 79 | Y | |
| 2 | | 20181MEC0098 | Komma Venkatesh Sai | SoE | 87% | 84 | Y | |
| 3 | | 20181MEC0136 | Niranjan S M | SoE | 88% | 79 | Y | |
| 4 | | 20181MEC0164 | Raghavendra K | SoE | 87% | 74 | Y | |
| 5 | | 20181MEC0172 | Rohit G | SoE | 87% | 77 | Y | |
| 6 | | 20181MEC0216 | Sudheer Kumar | SoE | 80% | 70 | Y | |
| | | | | | | | 6 | |

Name of Course Instructor 1: Mr. Narendra Singh
Employee ID of Course Instructor 1: PUNIV00866


Signature of Instructor-in-Charge





PRESIDENCY UNIVERSITY

(Established under the Presidency University Act, 2013 of the Karnataka Act 41 of 2013)

Name of the School: School of Engineering.

Name of the Department: Mechanical Engineering

Area of Specialization: Thermal engineering

Name of the Faculty Member/Members: Mr. Prashant SP

Title of the Value Added Course: Introduction to phase change materials

Course Code: MECV023

Course Duration: [30 hours]

Introduction to the Course:

This course is designed to give in depth view of PHASE CHANGE MATERIALS (PCM). It is used for thermal energy transferring, storing and releasing. In the area of energy sector, storing and transferring the thermal energy without loss is a vital factor. From the earlier days there has been good number of techniques been used such as heat exchangers, chemicals etc., to overcome this issue. As the industries and researchers progress they came across the new composed materials called PCM's, which revealed to be unique for storing and transferring the energy, but since it possesses low thermal conductivity, modifications based on utilization were applied in the form of active and passive techniques to overcome this problem

Course Outcomes: On successful completion of the course the students shall be able to:

CO 01: To explain the characteristics of PCM and classify them.

CO 02: To define thermodynamic properties of PCM

CO 03: To explain applications of PCM

CO 04: To analyse latent heat thermal energy storage system using PCM.



Course Content:

Module-1:

INTRODUCTION: This lecture covers the following topics: course outline relevance of phase transformation materials tetrahedron. In the area of energy sector, storing and transferring the thermal energy without loss is a vital factor. From the earlier days there has been good number of techniques been used such as heat exchangers, chemicals etc., to overcome this issue.

Module-2:

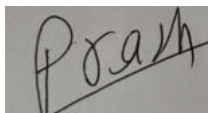
This module covers the following topics: 1. stability of phases in heterogeneous systems 2. G vs X for isomorphous systems. The PCM is broadly classified under organic and non-organic materials. The prominent PCM materials such as Cu, Al₂O₃, Au, SiC, SiO₂, and TiO₂ are considered for an improved rate of heat transfer. Further, by utilizing various geometries of shells and tubes the heat transfer rate is enhanced.

Module-3

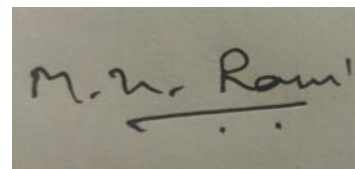
Thermal energy basics and heat transfer processes, thermistors, thermo devices, thermo couple, micro machined thermo couple probe, Effect of interfaces on the stability Derivation for equilibrium interfaces on equilibrium Various stages during solidification of materials Homogeneous and Heterogeneous nucleation. Nucleation in pure metals 2- Derivation of homogeneous nucleation 3-Free energy change associated with homogeneous nucleation of sphere "r"

Module-4

Equilibrium Solidification No diffusion in solid , perfect mixing in solid No diffusion in solid, diffusional mixing in liquid Scheil equation. Origin of constitutional supercooling Cellular and dendritic solidification Introduction of eutectic solidification. Ingot structure Introduction of solid to solid transformation Name of the Faculty Member



(Mr. Prashant SP)



Approval by the HOD



Department of Mechanical Engineering

School of Engineering

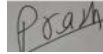
| STUDENT ID NO | STUDENT NAME | 06-09-2020 | 07-09-2020 | 08-09-2020 | 09-09-2020 | 10-09-2020 | 11-09-2020 | 12-09-2020 | 13-09-2020 | 14-09-2020 | 15-09-2020 | 16-09-2020 | 17-09-2020 | 18-09-2020 | 19-09-2020 | 20-09-2020 | Total classes conducted | Total classes attended | Percentage attended |
|---------------|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------------------|------------------------|---------------------|
| | | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | | | | |
| 20171MEC0209 | SHREYAS U | 2 | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87 |
| 20171MEC9013 | Sagar S | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 74 |
| 20171MEC9016 | Gagan | 2 | - | 2 | 2 | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 80 |



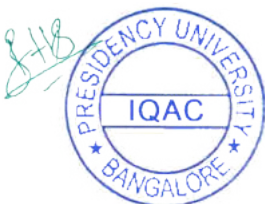
**Presidency University, Bengaluru
Value Added Course Marksheet
School of Engineering**

| Course Code : | | MECV023 | | | Academic Year : | | | #N/A | |
|---------------|--------|---------------------|-----------|-------------------------------|------------------------------------|--------------|--------------------------------------|-----------------|--|
| Course Name : | | Thermal engineering | | | Semester : | | | #N/A | |
| | | | | | Instructor-in-Charge Name : | | | Mr. Prashant SP | |
| | | | | | Instructor-in-Charge Employee ID : | | | PUNIV00026 | |
| S. No | UID No | Roll No | Name | School (e.g. SoE/SoL, etc) | Attendance (in %) | Marks (100M) | Eligible for Certificate (Y/N) | Remark | |
| 1 | | 20171MEC0209 | SHREYAS U | SoE | 87% | 72 | Y | | |
| 2 | | 20171MEC9013 | Sagar S | SoE | 74% | 84 | Y | | |
| 3 | | 20171MEC9016 | Gagan | SoE | 80% | 75 | Y | | |
| | | | | | | | 3 | | |

Name of Course Instructor 1: Mr. Prashant SP
Employee ID of Course Instructor 1: PUNIV00026



Signature of Instructor-in-Charge





PRESIDENCY UNIVERSITY

(Established under the Presidency University Act, 2013 of the Karnataka Act 41 of 2013)

Name of the School: School of Engineering

Name of the Department: Mechanical Engineering

Area of Specialization: Material science/ Surface engineering

Name of the Faculty Member/Members: Mr Srinivas HT

Title of the Value Added Course: Lean Manufacturing

Duration: [30 hours] **Course Code:** MECV026

Introduction to the Course:

Lean manufacturing is particularly related to the operational model implemented in the post-war 1950s and 1960s by the Japanese automobile company Toyota called "The Toyota Way" or the Toyota Production System (TPS).[2][3] Toyota's system was erected on the two pillars of just-in-time inventory management and automated quality control. The seven "wastes" ("muda" in Japanese), first formulated by Toyota engineer Shigeo Shingo, are the waste of superfluous inventory of raw material and finished goods, the waste of overproduction (producing more than what is needed now), the waste of over-processing (processing or making parts beyond the standard expected by customer), the waste of transportation (unnecessary movement of people and goods inside the system), the waste of motion (mechanizing or automating before improving the method), the waste of waiting (inactive working periods due to job queues), and the waste of making defective products (reworking to fix avoidable defects in products and processes).

Prerequisites of the course: Manufacturing Process, Material science

Course Objective:

1. To learn about the various techniques used in nanofabrication and characterization
2. To learn about different imaging techniques
3. To learn about the basic function of the equipment and how samples are prepared and measured.



Significance:

The knowledge in the subject may help the student to get a job in manufacturing sector, automobile sector and electronic industry. This can be further taken up as a research work in the field of nanotechnology for continuous learning.

Course Outcomes: On successful completion of the course the students shall be able to:

CO1: Identify the different nanofabrication techniques and characterization

CO2: Explain the different imaging techniques

CO3: Explain about nanoscale measurements

Course Content: [Briefly mention all the important topics to be covered in this course]

Module 1**Introduction to Nanotechnology**

Welcome to Nanotechnology! In this module, you will learn some of the basics of nanofabrication and nanocharacterization techniques as well as specific applications of nanotechnology in commercial products. You'll be able to explain why a cleanroom and vacuum environment are necessary for creating nanotechnology products. Finally, you will be able to explain how we use light, x-rays, and electron beams to characterize objects at the nanoscale

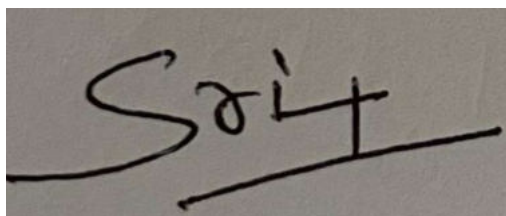
Module 2:**Nano Measurement and Characterization Tools: Scanning Electron Microscopy and Energy-Dispersive X-ray Spectroscopy**

After this module, you will be able to explain sample preparation and imaging techniques used in scanning electron microscopy. You will also be able to explain the benefits of environmental scanning electron microscopy. Furthermore, you will discover how energy-dispersive x-ray spectroscopy can be paired with scanning electron microscopy to gain elemental information about samples.

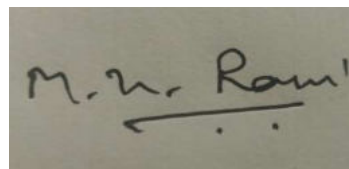
Module 3;**Nano Measurement and Characterization Tools: Transmission Electron Microscopy**

In this module, we will look at transmission electron microscopy and cryo-transmission electron microscopy. You will learn to describe the basic function of the equipment as well as how samples are prepared and imaged using these techniques.

Name of the Faculty Member



Mr. Srinivas HT



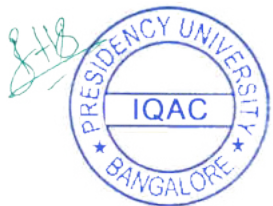
Approved by HOD



Department of Mechanical Engineering

School of Engineering

| STUDENT ID NO | STUDENT NAME | 12-09-2020 | 13-09-2020 | 14-09-2020 | 15-09-2020 | 16-09-2020 | 17-09-2020 | 18-09-2020 | 19-09-2020 | 20-9-2020 | 21-09-2020 | 22-09-2020 | 23-09-2020 | 24-09-2020 | 25-09-2020 | 26-09-2020 | Total classes | Total classes attended | Percentage attended |
|---------------|----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|---------------|------------------------|---------------------|
| | | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | | | | |
| 20191MEC0008 | AKARSH L S L S | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87 |
| 20191MEC0004 | ABHISHEK B | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 30 | 25 | 74 |

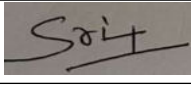


**Presidency University, Bengaluru
Value Added Course Marksheet
School of Engineering**

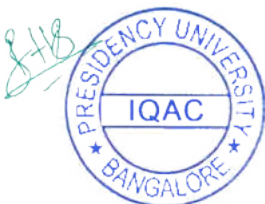
12

| Course Code : | | MECV026 | | Academic Year : | | | 2020-2021 | |
|---------------|--------|--------------------|------------|------------------------------------|----------------------|--------------|--------------------------------------|--------|
| Course Name : | | Lean Manufacturing | | Semester : | | | Odd Semester | |
| | | | | Instructor-in-Charge Name : | | | Mr Srinivas HT | |
| | | | | Instructor-in-Charge Employee ID : | | | PUNIV00400 | |
| S. No | UID No | Roll No | Name | School (e.g. SoE/SoL. etc) | Attendance (in %) | Marks (100M) | Eligible for Certificate (Y/N) | Remark |
| 1 | | 20191MEC0008 | AKARSH L S | SoE | 87% | 71 | Y | |
| 2 | | 20191MEC0004 | ABHISHEK B | SoE | 74% | 83 | Y | |
| | | | | | | | 2 | |

Name of Course Instructor 1: Mr Srinivas HT
Employee ID of Course Instructor 1: PUNIV00400



Signature of Instructor-in-Charge





PRESIDENCY UNIVERSITY

(Established under the Presidency University Act, 2013 of the Karnataka Act 41 of 2013)

Name of the School: School of Engineering.

Name of the Department: Mechanical Engineering

Area of Specialization: Mechatronics

Name of the Faculty Member/Members: Mr. Muralidhar

Title of the Value Added Course: Introduction to MEMS (Micro Electro mechanical systems)

Course Code: MECV029

Course Duration: [30 hours]

Introduction to the Course:

Micro electro Mechanical systems: MEMS has been identified as one of the most promising technologies for the 21st Century and has the potential to revolutionize both industrial and consumer products by combining silicon-based microelectronics with micromachining technology. Its techniques and microsystem-based devices have the potential to dramatically effect of all of our lives and the way we live. This course is designed to describe an overview of MEMS and microsystems with an emphasis on its commercial applications and device fabrication methods. This course also describes the range of MEMS sensors and actuators, the phenomena that can be sensed or acted upon with MEMS devices, and outlines the major challenges facing the industry.

Course Outcomes: On successful completion of the course the students shall be able to:

CO 01: Understand the definition, physics and miniaturization issues of MEMS

CO 02: Apply fabrication methods to understand the manufacturing process.

CO 03: Design and analyze the various MEMS transducers.

CO 04: Apply the principles and know the future of MEMS



Course Content:

Module-1:

INTRODUCTION: Definition of MEMS, MEMS history and development, micro machining, lithography principles & methods, structural and sacrificial materials, thin film deposition, impurity doping, etching, surface micro machining, wafer bonding, LIGA.

Module-2:

MECHANICAL SENSORS AND ACTUATORS: Principles of sensing and actuation: beam and cantilever, capacitive, piezo electric, strain, pressure, flow, pressure measurement by micro phone, MEMS gyroscopes, shear mode piezo actuator, gripping piezo actuator, Inchworm technology.

Module-3

THERMAL SENSORS AND ACTUATORS: Thermal energy basics and heat transfer processes, thermistors, thermo devices, thermo couple, micro machined thermo couple probe, Peltier effect heat pumps, thermal flow sensors, micro hot plate gas sensors, MEMS thermo vessels, pyro electricity, shape memory alloys (SMA), U-shaped horizontal and vertical electro thermal actuator, thermally activated MEMS relay, micro spring thermal actuator, data storage cantilever.

Module-4

MICRO-OPTO-ELECTRO MECHANICAL SYSTEMS: Principle of MOEMS technology, properties of light, light modulators.

MAGNETIC SENSORS AND ACTUATORS: Magnetic materials for MEMS and properties, magnetic sensing and detection, magneto resistive sensor

Muralidhar

Name & Signature of the Faculty Member
(Mr. Muralidhar)

Approval by the HOD.



M. N. Ram

| Presidency University, Bengaluru | | | | | |
|--|---------------|---------------------------|-----------------|-----------------|-----------------|
| Department of Mechanical Engineering | | | | | |
| School of Engineering | | | | | |
| VAC DETAILS | | | | | |
| Total number of hours:30 | | | | | |
| Value added Course(VAC) Name and Code: Introduction to MEMS, MECV029 | | | | | |
| Name of the Instructor: Mr. Muralidhar | | | | | |
| S.No. | STUDENT ID NO | STUDENT NAME | 5-Oct-2020 | 6-Oct-2020 | 7-Oct-2020 |
| | | | 5:30 to 7:30 PM | 5:30 to 7:30 PM | 5:30 to 7:30 PM |
| 1 | 20191MEC0098 | ROSIGARI VARSHITH PRADHAN | 2 | 2 | 2 |

| 8-Oct-2020 | 9-Oct-2020 | 12-Oct-2020 | 13-Oct-2020 | 14-Oct-2020 | 15-Oct-2020 | 16-Oct-2020 | 18-Oct-2020 | 19-Oct-2020 | 20-Oct-2020 | 21-Oct-2020 | 22-Oct-2020 | 23-Oct-2020 | Total classes conducted | Total classes attended | % Attended |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------|-------------------------|------------------------|------------|
| 5:30 to 7:30 PM | 5:30 to 7:30 PM | 5:30 to 7:30 PM | 5:30 to 7:30 PM | 5:30 to 7:30 PM | 5:30 to 7:30 PM | 5:30 to 7:30 PM | 5:30 to 7:30 PM | 5:30 to 7:30 PM | 5:30 to 7:30 PM | 5:30 to 7:30 PM | 5:30 to 7:30 PM | | | | |
| AB | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 27 | 89 |

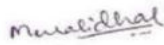
Muralidhar



**Presidency University, Bengaluru
Value Added Course Marksheet
School of Engineering**

| Course Code : | | MECV029 | | Academic Year : | | | 2020-2021 | |
|---------------|--------|----------------------|---------------------------|------------------------------------|----------------------|--------------|--------------------------------------|--------|
| Course Name : | | Introduction to MEMS | | Semester : | | | Odd Semester | |
| | | | | Instructor-in-Charge Name : | | | Mr.Muralidhar | |
| | | | | Instructor-in-Charge Employee ID : | | | PUNIV00342 | |
| S. No | UID No | Roll No | Name | School (e.g. SoE/SoL. etc) | Attendance (in %) | Marks (100M) | Eligible for Certificate (Y/N) | Remark |
| 1 | | 20191MEC0096 | Rosigari Varshith Pradhan | SoE | 89% | 77 | Y | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| | | | | | | | 1 | |

Name of Course Instructor 1: Mr.Muralidhar
Employee ID of Course Instructor 1: PUNIV00342



Signature of Instructor-in-Charge





PRESIDENCY UNIVERSITY

(Established under the Presidency University Act, 2013 of the Karnataka Act 41 of 2013)

Name of the School: **School of Engineering**

Name of the Department: **Mechanical Engineering**

Area of Specialization: **Product Design**

Name of the Faculty Member: **Mr Kunwar Chandra**

Title of the Value Added Course: **Introduction to Fault tree analysis and Criticality Analysis**

Course Duration: **[30 hours] from 5/9/2020 to 5/12/2020**

Course Code: MECV-040

Skill prerequisites:

The students should have a basic knowledge of design of machine elements and mathematics distribution.

Introduction to the Course:

The purpose of the course is to expose the students to the various aspects of Industrial Design so as to develop new products considering ergonomics, environment and other human factors. Industrial designers create and produce designs for commercial, medical and industrial products. They also make models and prototypes of these designs for mass production. The products that industrial designers create cover a wide range of manufactured goods, from toys and toasters to furniture and heavy machinery. Some work is carried out on the development of new products. Other work is related to updating and improving the design of existing products. The risk assessment also plays an important role in the design development of the products and thus it must be considered and the course lays an inclination towards the risk Assessment tools used in the development phases of the product and outlines its importance to the students.

Course Outcomes: On successful completion of the course the students shall be able to :



C01: Understand the types of failure distribution,

C02: Analyze different models and faults in systems.,

C03: Design Fault tree and carry out CAPA for upgrade in design.,

C04: Design a sub system Fault tree on various distribution and MTTF.

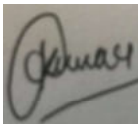
Course Content: [Briefly mention all the important topics to be covered in this course]

Overview on failure and causes Systems: Components of a product design System, Types of design processes and failures in Systems Fault Tree Analysis: components of fault tree, Application of normal and beta distribution in fault tree analysis,

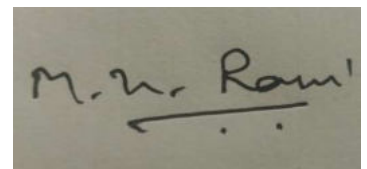
Analysis of real failures in design phases. Product Design Phases: Fundamentals of Product design Phases, Analysis of failures in different layers in product development phases, Mean time to failure, criticality analysis.

Corrective Action and Preventive Action: Fundamentals of Corrective Action and Preventive Action on Fault Tree Analysis, Application of CAPA Analysis of functions: Fundamentals of functional sub Systems and analysis of its change after FTA developments on product.

Name &Signature of the Faculty Member



Mr. Kunwar Chandra Singh

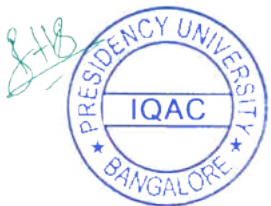


Approval by the HOD.



Presidency University, Bengaluru
Department of Mechanical Engineering
School of Engineering
VAC DETAILS
Total number of hours:30
Value added Course(VAC) Name and Code: Introduction to Fault tree analysis and Criticality Analysis MECV040
Name of the Instructor: Kunwar Chandra Singh

| S.No. | STUDENT ID NO | STUDENT NAME | 5/9/20 | 5/9/20 | 6/9/20 | 6/9/20 | 12/9/20 | 12/9/20 | 19/9/20 | 19/9/20 | 26/9/20 | 26/9/20 | 10/10/20 | 10/10/20 | 17/10/20 | 17/10/20 | 24/10/20 | 24/10/20 | 25/10/20 | 25/10/20 | 7/11/20 | 7/11/20 | 12/11/20 | 12/11/20 | 19/11/20 | 19/11/20 | 21/11/20 | 21/11/20 | 4/12/20 | 4/12/20 | 5/12/20 | 5/12/20 | Total classes conducted | Total classes attended | Percentage attended | | |
|-------|---------------|----------------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|----------|----------|----------|----------|---------|---------|-----------|----------|----------|----------|----------|----------|---------|---------|---------|---------|-------------------------|------------------------|---------------------|--------|------|
| | | | 6-7pm | 7-8pm | 8-9 am | 9-10am | 6-7pm | 7-8pm | 5-6pm | 6-7pm | 6-7pm | 7-8pm | 7-8pm | 6-7pm | 7-8pm | 9-10am | 10-11am | 6-7pm | 7-8pm | 5-6pm | 6-7pm | 10-11am | 11-12noon | 6-7pm | 7-8pm | 6-7pm | 7-8pm | 4-5pm | 5-6pm | 6-7pm | 7-8pm | 8-9am | | | | 9-10am | |
| 1 | 20171ME C0011 | ADITHYA H R | P | P | P | P | P | P | P | P | P | A | P | P | P | P | P | P | A | P | P | P | A | P | P | P | P | P | P | P | P | P | P | 30 | 27 | 90% | |
| 2 | 20171ME C0228 | UJJAWAL SHARMA | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | P | A | P | P | P | P | P | P | 30 | 28 | 93% |
| 3 | 20181ME C0055 | DADAPEER H M | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 | 30 | 100% |
| 4 | 20181ME C0062 | EFRAYAM B | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 | 30 | 100% |
| 5 | 20191ME C0062 | KULSUM ALAM | P | P | P | P | P | P | P | P | P | P | P | A | P | P | P | A | P | P | A | P | P | P | P | P | P | P | P | P | P | P | P | P | 30 | 27 | 90% |



Presidency University, Bengaluru
Value Added Course Marksheet
School of Engineering

| Course Code : | | MECV-040. | | | Academic Year : | | 2020-2021 | |
|---------------|--------|--|----------------|-------------------------------|------------------------------------|--------------|--------------------------------------|--------|
| Course Name : | | Introduction to Fault tree analysis and Criticality Analysis | | | Semester : | | Odd Semester | |
| | | | | | Instructor-in-Charge Name : | | Mr Kunwar Chandra | |
| | | | | | Instructor-in-Charge Employee ID : | | PUNIV00922 | |
| S. No | UID No | Roll No | Name | School (e.g. SoE/SoL. etc) | Attendance (in %) | Marks (100M) | Eligible for Certificate (Y/N) | Remark |
| 1 | | 20171ME C0011 | ADITHYA H R | SoE | 90% | 85 | Y | |
| 2 | | 20171ME C0228 | UJJAWAL SHARMA | SoE | 93% | 85 | Y | |
| 3 | | 20181ME C0055 | DADAPEER H M | SoE | 100% | 83 | Y | |
| 4 | | 20181ME C0062 | EFRAYAM B | SoE | 100% | 77 | Y | |
| 5 | | 20191ME C0062 | KULSUM ALAM | SoE | 90% | 79 | Y | |
| | | | | | | | 5 | |

Name of Course Instructor 1: Mr Kunwar Chandra
Employee ID of Course Instructor 1: PUNIV00922



Signature of Instructor-in-Charge





PRESIDENCY UNIVERSITY

(Established under the Presidency University Act, 2013 of the Karnataka Act 41 of 2013)

Name of the School: School of Engineering

Name of the Department: Mechanical Engineering

Area of Specialization: Production/Manufacturing

Name of the Faculty Member: Dr. Satish Babu

Title of the Value Added Course: Product Life Cycle Management

Duration: [30 hours]

Course Code: MECV-407

Introduction to the Course:

PLCM is an outcome of 'Lean manufacturing'. It is the activity of managing companies' product all the way across their life cycle (imaginary phase till retirement) in the most effective way. PLM is able to raise the bar on productivity because it allows for the complete integration of everything related to the product or service both internal and external into the organization producing it. It uses information organizational practices and processes to improve the efficiency both within and across functional areas, by dividing the complete work along the functional areas such as engineering, manufacturing, inventory, sales and services etc. It can help to gain productivity in organizations as functional areas benefit from shared base information. PLM is a complete business activity addressing many components such as products, organizational structure, working methods, processes, people, and information structure and information systems. It's a new paradigm, a new way of looking at the world.

In over all, PLM not only improves the productivity, quality and efficiency but also increases the revenue for the organization by controlling all the aspect of the product throughout its life cycle

Prerequisites of the course: Manufacturing Process, Material science

Course Objective:

1. To learn about the various techniques used in nanofabrication and characterization
2. To learn about different imaging techniques
3. To learn about the basic function of the equipment and how samples are prepared and measured.



Significance:

The knowledge in the subject may help the student to get a job in manufacturing sector, automobile sector and electronic industry. This can be further taken up as a research work in the field of nanotechnology or continuous learning.

Course Outcomes

On successful completion of the course the students shall be able to:

- outline the basic of Product life management system
- Explain the concept, process and workflow of PLM & PDM system
- Discuss the collaborative product development with virtual testing
- Describe Digital manufacturing using PLM system
- Express different PLM strategy & assessment of current system

- **Course Content:**

Module 1

Introduction to Product Life Cycle Management (PLM): Definition, PLM Lifecycle model, Threads of PLM, Need for PLM, Opportunities and benefits of PLM, Views, Components and Phases of PLM, PLM feasibility study, PLM visioning.

Module:2

PLM Concepts, Processes and Workflow: Characteristics of PLM, Environment driving PLM, PLM Elements, Drivers of PLM, Conceptualization, Design, Development, Validation, Production, Support of PLM.

Module – 3

Product Data Management (PDM) Process and Workflow: PDM systems and importance, reason for implementing a PDM system, financial justification of PDM implementation. Versioning, check-in and checkout, views, Metadata, Lifecycle, and workflow. Applied problems and solution on PDM processes and workflow.

Module – 4

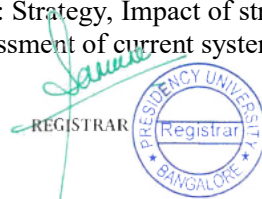
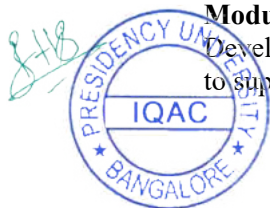
Collaborative Product Development: Engineering vaulting, product reuse, smart parts, engineering change management, Bill of materials and process consistency, Digital mock-up and prototype development, design for Environment, virtual testing and validation, marketing collateral

Module – 5

Digital Manufacturing – PLM: Digital manufacturing, benefits manufacturing, manufacturing the first-one, Ramp up, virtual learning curve, manufacturing the rest, production planning.

Module – 6

Developing a PLM strategy and conducting a PLM assessment: Strategy, Impact of strategy, implementing a PLM strategy, PLM initiatives to support corporate objectives. Infrastructure assessment, assessment of current systems and applications.



Dr. Satish Babu Boppana

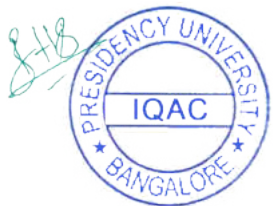
Approval by the HOD

Name & Signature of the Faculty Member

Course Content: [Briefly mention all the important topics to be covered in this course]

| Department of Mechanical Engineering | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|---------------|------------------------|---------------------|
| School of Engineering | | | | | | | | | | | | | | | | | | | |
| STUDENT ID NO | STUDENT NAME | 12-09-2020 | 13-09-2020 | 14-09-2020 | 15-09-2020 | 16-09-2020 | 17-09-2020 | 18-09-2020 | 19-09-2020 | 20-09-2020 | 21-09-2020 | 22-09-2020 | 23-09-2020 | 24-09-2020 | 25-09-2020 | 26-09-2020 | Total classes | Total classes attended | Percentage attended |
| | | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | | | |
| 20191LME0043 | RITESH GOWDA B | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87% |
| 20171MEC0208 | SHREYAS S S | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 30 | 25 | 85% |
| 20171MEC0235 | VINAYAKA C H | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 26 | 97% |
| 20171MEC0238 | VISHAL K | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 26 | 85% |
| 20171MEC9011 | SIDHANTH K | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 86% |
| 20181LME0004C | ANIRUDH N | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 82% |
| 20181LME0010 | DAYANANDA T | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 28 | 83% |

| | | | | | | | | | | | | | | | | | | | | |
|--------------|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|-----|
| 20181LME0011 | MANJUNATH U H | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87% |
| 20181LME0027 | PAVANKUMAR R | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 86% |
| 20181LME0028 | VINAY C | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 83% |
| 20181LME0030 | GIRIDHAR M V | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 90% |
| 20181LME0036 | MANJUNATH S | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 91% |
| 20181LME0039 | ANVITH K S | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 84% |
| 20181LME0040 | KARTHIK KUMAR K G | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 28 | 75% |
| 20181LME0040 | KARTHIK KUMAR K G | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 30 | 25 | 82% |
| 20181LME0041 | HEMANTH H M | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 26 | 85% |
| 20181LME0043 | SANJAY Y ARKASALI | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 30 | 26 | 87% |
| 20181LME0044 | B T PRUTHVI | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 86% |
| 20181LME0045 | SIDDHARTH VASUDEV GHADI | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 92% |
| 20181LME0046 | VIJAYKUMAR T MIRASHI | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 85% |
| 20181LME0047 | MITHUN L H | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 92% |
| 20181LME0048 | GAUTHAM R | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 84% |
| 20181LME0050 | ROHIT PAYAS | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 88% |
| 20181LME0051 | SANTHOSHA N | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 84% |
| 20181LME0052 | M NAGARAJ | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 90% |
| 20181LME0053 | VINODREDDY | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 85% |
| 20181LME9005 | SRINATH S | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 88% |
| 20181LME9006 | RAVINDRA REDDY | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 25 | 84% |
| 20191LME0001 | KISHORE MURUGAN K | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 30 | 26 | 84% |
| 20191LME0028 | KARTHIK C | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 26 | 85% |
| 20191LME0029 | NUTHAN MANOJ KUMAR B | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 88% |
| 20191LME0030 | SAI JAYANTH K | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 84% |
| 20191LME9002 | S DINESH RAJ | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87% |
| 20181LME0040 | KARTHIK KUMAR K G | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 85% |



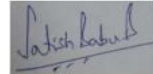
Presidency University, Bengaluru
Value Added Course Marksheet
School of Engineering

21

| Course Code : | | MECV-407 | | Academic Year : | | | 2020-2021 | |
|---------------|--------|-------------------------------|-------------------------|------------------------------------|----------------------|--------------|--------------------------------------|--------|
| Course Name : | | Product Life Cycle Management | | Semester : | | | Odd Semester | |
| | | | | Instructor-in-Charge Name : | | | Dr. Satish Babu | |
| | | | | Instructor-in-Charge Employee ID : | | | PUNIV01057 | |
| S. No | UID No | Roll No | Name | School (e.g. SoE/Sol. etc) | Attendance (in %) | Marks (100M) | Eligible for Certificate (Y/N) | Remark |
| 1 | | 20191LME0043 | RITESH GOWDA B | SoE | 87% | 75 | Y | |
| 2 | | 20171MEC0208 | SHREYAS S S | SoE | 85% | 70 | Y | |
| 3 | | 20171MEC0235 | VINAYAKA C H | SoE | 97% | 82 | Y | |
| 4 | | 20171MEC0238 | VISHAL K | SoE | 85% | 78 | Y | |
| 5 | | 20171MEC9011 | SIDHANTH K | SoE | 86% | 82 | Y | |
| 6 | | 20181LME0004 | ANIRUDH N | SoE | 82% | 70 | Y | |
| 7 | | 20181LME0010 | DAYANANDA T | SoE | 83% | 70 | Y | |
| 8 | | 20181LME0011 | MANJUNATH U H | SoE | 87% | 81 | Y | |
| 9 | | 20181LME0027 | PAVANKUMAR R | SoE | 86% | 80 | Y | |
| 10 | | 20181LME0028 | VINAY C | SoE | 83% | 79 | Y | |
| 11 | | 20181LME0030 | GIRIDHAR M V | SoE | 90% | 72 | Y | |
| 12 | | 20181LME0036 | MANJUNATH S | SoE | 91% | 76 | Y | |
| 13 | | 20181LME0039 | ANVITH K S | SoE | 84% | 79 | Y | |
| 14 | | 20181LME0040 | KARTHIK KUMAR K G | SoE | 82% | 76 | Y | |
| 15 | | 20181LME0041 | HEMANTH H M | SoE | 85% | 80 | Y | |
| 16 | | 20181LME0043 | SANJAY Y ARKASALI | SoE | 87% | 85 | Y | |
| 17 | | 20181LME0044 | B T PRUTHVI | SoE | 86% | 72 | Y | |
| 18 | | 20181LME0045 | SIDDHARTH VASUDEV GHADI | SoE | 92% | 83 | Y | |
| 19 | | 20181LME0046 | VIJAYKUMAR T MIRASHI | SoE | 85% | 84 | Y | |
| 20 | | 20181LME0047 | MITHUN L H | SoE | 92% | 85 | Y | |
| 21 | | 20181LME0048 | GAUTHAM R | SoE | 84% | 80 | Y | |
| 22 | | 20181LME0050 | ROHIT PAYAS | SoE | 88% | 72 | Y | |
| 23 | | 20181LME0051 | SANTHOSHA N | SoE | 84% | 82 | Y | |
| 24 | | 20181LME0052 | M NAGARAJ | SoE | 90% | 71 | Y | |
| 25 | | 20181LME0053 | VINODREDDY | SoE | 85% | 77 | Y | |
| 26 | | 20181LME9005 | SRINATH S | SoE | 88% | 76 | Y | |
| 27 | | 20181LME9006 | RAVINDRA REDDY | SoE | 84% | 72 | Y | |
| 28 | | 20191LME0001 | KISHORE MURUGAN K | SoE | 84% | 70 | Y | |
| 29 | | 20191LME0029 | NUTHAN MANOJ KUMAR B | SoE | 88% | 84 | Y | |
| 30 | | 20191LME0030 | SAI JAYANTH K | SoE | 84% | 73 | Y | |
| 31 | | 20191LME9002 | S DINESH RAJ | SoE | 87% | 80 | Y | |
| 32 | | 20181LME0040 | KARTHIK KUMAR K G | SoE | 85% | 72 | Y | |

32

Name of Course Instructor 1: Dr. Satish Babu
Employee ID of Course Instructor 1: PUNIV01057



Signature of Instructor-in-Charge





PRESIDENCY UNIVERSITY

(Established under the Presidency University Act, 2013 of the Karnataka Act 41 of 2013)

Name of the School: School of Engineering

Name of the Department: Mechanical Engineering

Area of Specialization: Production Engineering

Name of the Faculty Member: Dr.G.N.LOKESH

Title of the Value Added Course: Modern Machining Techniques (MECV005)

Course Duration: [30 hours] [From 15-6-2021 to 1-08-2021]

Course Code: MECV005

Introduction to the Course:

Unlike Conventional Machining process, Unconventional machining process is a special type of machining process in which there is no direct contact between the tool and the work piece. In unconventional machining, a form of energy is used to remove unwanted material from a given work piece. In several industries, hard and brittle materials like tungsten carbide, high speed steels, stainless steels, ceramics etc., find a variety of applications. Such materials are machined with the help of conventional machining processes, either the tool undergoes extreme wear or the work piece material is damaged. This is because, in conventional machining, there is a direct contact between the tool and the work piece. Large cutting forces are involved and material is removed in the form of chips. Huge amounts of heat is produced in the work piece. This induces residual stresses, which degrades the life and quality of the work piece material. Hence, conventional machining produces poor quality work piece with poor surface finish. To overcome all these drawbacks, Modern Machining Techniques plays a vital role to machine hard and brittle materials in order to get better dimensional accuracy.

Prerequisites of the course: Manufacturing Process, Machining and Machine Tools Technology.

Objective: To learn about various Unconventional machining process, the various process parameters and their influence on performance and their applications.

Course Outcomes: On successful completion of the course the students shall be able to:

CO1: Explain the need for unconventional machining processes and its classification

CO2: Compare various thermal energy and electrical energy based unconventional machining processes.

CO2: Summarize various chemical and electro-chemical energy based unconventional machining processes.

CO4: Distinguish various recent trends based unconventional machining processes.

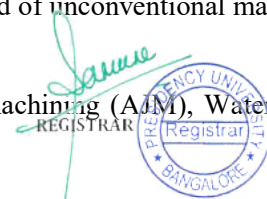
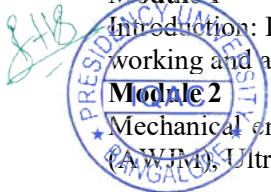
Course Content:

Module 1

Introduction: Limitation of conventional manufacturing processes, need of unconventional manufacturing process and its classification. Principle and working and applications of unconventional machining process.

Module 2

Mechanical energy based Unconventional machining: Abrasive jet machining (AJM), Water jet machining (WJM), Abrasive water jet machining (AWJM), Ultrasonic machining (USM).



Module 3

Electro thermal energy based Unconventional machining: Electro-discharge machining (EDM), Wire- electro discharge machining (WEDM).

Module 4

Chemical energy based: Electrochemical machining (ECM), Chemical machining, Maskants, Etching. Hybrid machining: Electro chemical discharge machining (ECDM), Ultrasonic assisted EDM, Electro chemical discharge grinding, Electro discharge coating.

Module 5

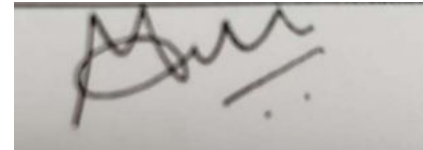
High energy density methods: Laser beam machining (LBM), Electron beam machining (EBM), Plasma arc machining (PAM)

Methodology: Lectures & discussions.

Name & Signature of the Faculty Member

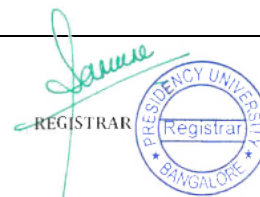
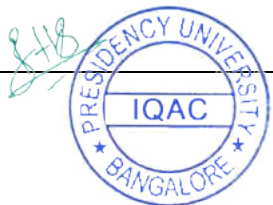


Dr.G.N.LOKESH



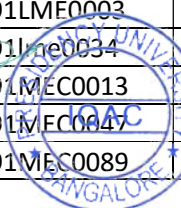
Approval by the HOD

Department of Mechanical Engineering



School of Engineering

| STUDENT ID NO | STUDENT NAME | 15-06-2021 | 16-06-2021 | 17-06-2021 | 18-06-2020 | 19-06-2021 | 20-06-2021 | 21-06-2021 | 22-06-2021 | 23-06-2021 | 24-06-2021 | 25-06-2021 | 26-06-2021 | 27-06-2021 | 28-06-2021 | 29-06-2021 | Total classes | Total classes attended | Percentage attended |
|---------------|----------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|---------------|------------------------|---------------------|
| | | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | | | | |
| 20191LME0006 | CHETAN C | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87% |
| 20181MEC9028 | SHREYAS U | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 30 | 25 | 85% |
| 20181MEC0008 | ADARSH PATIL | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 30 | 26 | 97% |
| 20181MEC0034 | AVULADODDI PAVAN KUMAR | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 30 | 26 | 85% |
| 20181MEC0061 | DINESH A | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 86% |
| 20181MEC0079 | HARSHIT R | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 82% |
| 20181MEC0083 | J D ANSHO JERFIN SINGH | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 83% |
| 20181MEC0095 | KEVIN VINODH | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87% |
| 20181MEC0103 | LAKSHAN R | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 86% |
| 20181MEC0110 | MANISH J | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 30 | 28 | 83% |
| 20181MEC0124 | MOHAMMED MUAZZAM AFRID M A | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 90% |
| 20181MEC9002 | N. KIRAN KUMAR REDDY | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 30 | 28 | 91% |
| 20181MEC9005 | SACHIN H B | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 84% |
| 20181MEC9011 | HAMAAD AJAZ KHAN | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 30 | 28 | 75% |
| 20181MEC9012 | LOKIT R NAIDU | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 30 | 25 | 82% |
| 20181Mec9029 | Yashwanth V | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 30 | 26 | 85% |
| 20191LME0003 | ASHWINI S | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 26 | 87% |
| 20191LME0034 | Nishanth R | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 86% |
| 20191MEC0013 | AKASH S | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 92% |
| 20191MEC0047 | IGOUSE AZAM | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 28 | 85% |
| 20191MEC0089 | PAVAN KUMAR N | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 30 | 28 | 92% |



| | | | | | | | | | | | | | | | | | | | |
|--------------|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|-----|
| 20191MEC0116 | VARUN R | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 84% |
| 20191LME0006 | CHETAN C | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 88% |
| 20181MEC9028 | SHREYAS U | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 30 | 28 | 84% |
| 20181MEC0008 | ADARSH PATIL | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 28 | 90% |
| 20181MEC0034 | AVULADODDI PAVAN KUMAR | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 85% |
| 20181MEC0061 | DINESH A | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 30 | 28 | 88% |
| 20181MEC0079 | HARSHIT R | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 30 | 25 | 84% |
| 20181MEC0083 | J D ANSHO JERFIN SINGH | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 30 | 26 | 84% |
| 20181MEC0095 | KEVIN VINODH | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 30 | 26 | 85% |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87% |
| | | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 85% |



Presidency University, Bengaluru
Value Added Course Marksheet
School of Engineering

6

| Course Code : | | MECV005 | | Academic Year : | | | 2020-2021 | |
|---------------|--------|-----------------------------|----------------------------|------------------------------------|----------------------|--------------|--------------------------------------|--------|
| Course Name : | | Modern Machining Techniques | | Semester : | | | Even Semester | |
| | | | | Instructor-in-Charge Name : | | | Dr.G.N.LOKESH | |
| | | | | Instructor-in-Charge Employee ID : | | | PUNIV00974 | |
| S. No | UID No | Roll No | Name | School (e.g. SoE/Sol. etc) | Attendance (in %) | Marks (100M) | Eligible for Certificate (Y/N) | Remark |
| 1 | | 20191LME0006 | CHETAN C | SoE | 87% | 76 | Y | |
| 2 | | 20181MEC9028 | SHREYAS U | SoE | 85% | 76 | Y | |
| 3 | | 20181MEC0008 | ADARSH PATIL | SoE | 97% | 70 | Y | |
| 4 | | 20181MEC0034 | AVULADODDI PAVAN KUMAR | SoE | 85% | 79 | Y | |
| 5 | | 20181MEC0061 | DINESH A | SoE | 86% | 74 | Y | |
| 6 | | 20181MEC0079 | HARSHIT R | SoE | 82% | 82 | Y | |
| 7 | | 20181MEC0083 | J D ANSHO JERFIN SINGH | SoE | 83% | 70 | Y | |
| 8 | | 20181MEC0095 | KEVIN VINODH | SoE | 87% | 76 | Y | |
| 9 | | 20181MEC0103 | LAKSHAN R | SoE | 86% | 72 | Y | |
| 10 | | 20181MEC0110 | MANISH J | SoE | 83% | 72 | Y | |
| 11 | | 20181MEC0124 | MOHAMMED MUAZZAM AFRID M A | SoE | 90% | 74 | Y | |
| 12 | | 20181MEC9002 | N. KIRAN KUMAR REDDY | SoE | 91% | 77 | Y | |
| 13 | | 20181MEC9005 | SACHIN H B | SoE | 84% | 76 | Y | |
| 14 | | 20181MEC9011 | HAMAAD AJAZ KHAN | SoE | 75% | 80 | Y | |
| 15 | | 20181MEC9012 | LOKIT R NAIDU | SoE | 82% | 72 | Y | |
| 16 | | 20181MEC9029 | YASHWANTH V | SoE | 85% | 82 | Y | |
| 17 | | 20191LME0003 | ASHWINI S | SoE | 87% | 71 | Y | |
| 18 | | 20191ME0034 | Nishanth R | SoE | 86% | 83 | Y | |
| 19 | | 20191MEC0013 | AKASH S | SoE | 92% | 73 | Y | |
| 20 | | 20191MEC0047 | GOUSE AZAM | SoE | 85% | 78 | Y | |
| 21 | | 20191MEC0089 | PAVAN KUMAR N | SoE | 92% | 80 | Y | |
| 22 | | 20191MEC0116 | VARUN R | SoE | 84% | 85 | Y | |
| 23 | | 20191LME0006 | CHETAN C | SoE | 87% | 76 | Y | |
| 24 | | 20181MEC9028 | SHREYAS U | SoE | 85% | 76 | Y | |
| 25 | | 20181MEC0008 | ADARSH PATIL | SoE | 90% | 77 | Y | |
| 26 | | 20181MEC0034 | AVULADODDI PAVAN KUMAR | SoE | 85% | 79 | Y | |
| 27 | | 20181MEC0061 | DINESH A | SoE | 88% | 81 | Y | |
| 28 | | 20181MEC0079 | HARSHIT R | SoE | 84% | 71 | Y | |
| 29 | | 20181MEC0083 | J D ANSHO JERFIN SINGH | SoE | 84% | 71 | Y | |
| 30 | | 20181MEC0095 | KEVIN VINODH | SoE | 85% | 79 | Y | |
| | | | | | | | 30 | |

Name of Course Instructor 1: Dr.G.N.LOKESH
Employee ID of Course Instructor 1: PUNIV00974



Signature of Instructor-in-Charge





PRESIDENCY UNIVERSITY

(Established under the Presidency University Act, 2013 of the Karnataka Act 41 of 2013)

Name of the School: School of Engineering

Name of the Department: Mechanical Engineering

Area of Specialization: Supply Chain

Name of the Faculty Member/Members: Dr. Jothi Basu

Title of the Value Added Course: Global Supply Chain Management

Duration: [30 hours] **Course Code:** MECV010

Introduction to the Course:

In today's industrial and business setting, the role of Supply Chain Management (SCM) is critical for achieving operational efficiency. The concept of SCM can be diversely applied to customer satisfaction & company success. Because of this vital role played by SCM personnel in organizations, employers wanting to have the right talent in house seek employees with a decent level of SCM skills and knowledge. Supply chain management courses that deliver these cutting edge skills sets are thus critical to business operations & success. Through these supply chain management courses an individual gets to understand the various business processes in an organization.

Prerequisites: Basic knowledge in manufacturing and business operations.

Objective: The objective is to develop the supply chain and logistics management related skills among the students.

Course Outcomes: On successful completion of the course the students shall be able to:

1. Demonstrate purchasing methods and techniques on supplier management and supply in specific business contexts.
2. Explain the strategic importance of logistic elements and describe how they affect supply chain management.
3. Advise management of the organization on the use of different supply chain related strategies for the success of the business.
4. Analyze the creation of future of supply chain technologies.

Course Content: 1. Key Concepts of Supply Chain Management – Understanding Supply Chain – Objectives,



Importance and Decision phases in Supply Chain, Process and Cycle view, Examples of Supply Chain. Supply Chain Performance – Achieving strategic fit, Supply Chain Drivers – Various drivers, Framework for structuring drivers.

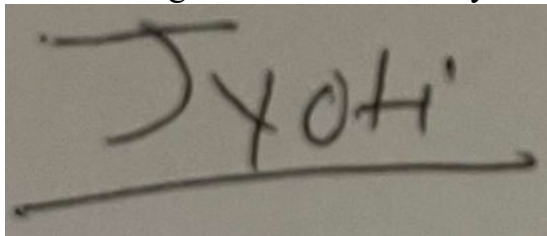
2. Designing distribution network – The Role of Distribution in the Supply Chain, Factors Influencing Distribution Network Design and Distribution Networks in Practice. Network Design in the Supply Chain. Designing Global Supply Chain Networks - The Impact of Globalization on Supply Chain Networks - Risk Management in Global Supply Chains, Evaluating Network Design Decisions Using Decision Trees and Making Global Supply Chain Design Decisions under Uncertainty in Practice.

3. Planning and Coordinating Demand and Supply – Demand forecasting, Aggregate Planning in Supply Chain, Coordination in Supply Chain. Managing economies of scale in a supply chain: Cycle inventory, Managing Uncertainty in a Supply Chain: Safety Inventory, Determining the Optimal Level of Product Availability.

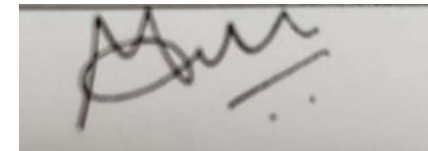
4. Designing and Planning Transportation Networks – Transportation In a Supply Chain - The Role of Transportation in a Supply Chain, Modes of Transportation and Their Performance, Trade-Offs in Transportation Design, Tailored Transportation, The Role of IT in Transportation. Managing CrossFunctional Drivers in a Supply Chain - Sourcing Decisions In a Supply Chain, The Role of Sourcing in a Supply Chain, Third- and Fourth-Party Logistics Providers, Supplier Selection—Auctions and Negotiations.

5. Future Technologies in Supply Chain –The Role of IT in a Supply Chain, The Supply Chain IT Framework, Customer Relationship Management, Internal Supply Chain Management, Supplier Relationship Management. The Future Technologies in the Supply Chain – AI, Additive Manufacturing, Driverless Vehicles, IoT, Block Chain Technologies, Wearable Devices

Name & Signature of the Faculty Member



Dr. R. Jothi Basu



Approval by the HOD.



Department of Mechanical Engineering

School of Engineering

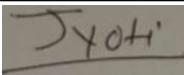
| STUDENT ID NO | STUDENT NAME | 15-06-2021 | 16-06-2021 | 17-06-2021 | 18-06-2020 | 19-06-2021 | 20-06-2021 | 21-06-2021 | 22-06-2021 | 23-06-2021 | 24-06-2021 | 25-06-2021 | 26-06-2021 | 27-06-2021 | 28-06-2021 | 29-06-2021 | Total classes | Total classes attended | Percentage attended |
|---------------|------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|---------------|------------------------|---------------------|
| | | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | | | | |
| 20181MEC0009 | ADITYA KUMAR | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 29 |
| 20171MEC0041 | BURRAMSETTY JAYANTH | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 29 |
| 20181MEC0061 | DINESH A | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 29 |
| 20181MEC0083 | J D ANSHO JERFIN SINGH | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 28 |
| 20181MEC0241 | PRAMOD R | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 28 |
| 20171MEC0176 | RAKSHITH RAY B H | 2 | 2 | 2 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 28 |
| 20171MEC0181 | S NAVANEETHAKRISHN AN | | | | | | | | | | | | | | | | | | |
| 20201LME0008 | SANKET DILIP INGALE | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 29 |
| 20181MEC0197 | SHEIK SULAIMAN | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 29 |
| 20171MEC9020 | SUJITH A | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 29 |
| 20181MEC0206 | SUHAS S | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 28 |
| 20191LME0016 | VINEETH S JADHAV | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 28 |
| 20181LME0015 | YASHASWINI K B | 2 | 2 | 2 | 2 | 0 | 2 | 2 | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 28 |
| 20191LME0023 | DARSHAN M | | | | | | | | | | | | | | | | | | |
| 20201LME0018 | HARISHA H | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 29 |
| 20191LME0034 | NISHANTH R | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 30 | 29 |

Presidency University, Bengaluru
Value Added Course Marksheet
School of Engineering

8

| Course Code : | | MECV010 | | Academic Year : | | | 2020-2021 | |
|---------------|--------|--------------------------------|------------------------|------------------------------------|----------------------|--------------|--------------------------------------|--------|
| Course Name : | | Global Supply Chain Management | | Semester : | | | Even Semester | |
| | | | | Instructor-in-Charge Name : | | | Dr. Jothi Basu | |
| | | | | Instructor-in-Charge Employee ID : | | | PUNIV01165 | |
| S. No | UID No | Roll No | Name | School (eg. SoE/Sol. etc) | Attendance (in %) | Marks (100M) | Eligible for Certificate (Y/N) | Remark |
| 1 | | 20181MEC0009 | ADITYA KUMAR | SoE | 29% | 35 | Y | |
| 2 | | 20171MEC0041 | BURRAMSETTY JAYANTH | SoE | 29% | 37 | Y | |
| 3 | | 20181MEC0061 | DINESH A | SoE | 29% | 36 | Y | |
| 4 | | 20181MEC0083 | J D ANSHO JERFIN SINGH | SoE | 28% | 27 | N | |
| 5 | | 20181MEC0241 | PRAMOD R | SoE | 28% | 29 | N | |
| 6 | | 20171MEC0176 | RAKSHITH RAY B H S | SoE | 28% | 40 | Y | |
| 7 | | 20171MEC0181 | NAVANEETHAKRISHNAN | SoE | 28% | 33 | Y | |
| 8 | | 20201LME0008 | SANKET DILIP INGALE | SoE | 29% | 36 | Y | |
| 9 | | 20181MEC0197 | SHEIK SULAIMAN | SoE | 29% | 35 | Y | |
| 10 | | 20171MEC9020 | SUJITH A | SoE | 29% | 29 | N | |
| 11 | | 20181MEC0206 | SUHAS S | SoE | 28% | 33 | Y | |
| 12 | | 20191MEC9016 | VINEETH S JADHAV | SoE | 28% | 32 | Y | |
| 13 | | 20181LME0015 | YASHASWINI K B | SoE | 28% | 26 | N | |
| 14 | | 20191LME0023 | DARSHAN M | SoE | 29% | 40 | Y | |
| 15 | | 20201LME0018 | HARISHA H | SoE | 29% | 25 | N | |
| 16 | | 20191LME0034 | Nishanth R | SoE | 29% | 40 | Y | |
| 17 | | | | | | | | |
| | | | | | | | 11 | |

Name of Course Instructor 1: Dr. Jothi Basu
Employee ID of Course Instructor 1: PUNIV01165



Signature of Instructor-in-Charge





PRESIDENCY UNIVERSITY

(Established under the Presidency University Act, 2013 of the Karnataka Act 41 of 2013)

Name of the School: School of Engineering

Name of the Department: Mechanical Engineering

Area of Specialization: Thermal Engineering

Name of the Faculty Member: Mr. Baswaraj

Title of the Value Added Course: Python Programming for Mechanical Engineers

Course Duration: [30 hours]

Course Code: MECV-031

Introduction to the Course:

The purpose of the course is to expose the students to the various aspects of python programming language. This course offers a comprehensive knowledge of python programming for data science. The course starts with basics of python programming, use of it in various application in data science and heat transfer applications.

Prerequisites of the course: Basic Maths

Objective: To learn about various Unconventional machining process, the various process parameters and their influence on performance and their applications.

Course Outcomes: On successful completion of the course the students shall be able to:

CO1: Summarize the basics of python programming.

CO2: Apply the concepts of programming in analyzing the data using Pandas.

CO3: Apply the concepts of programming in analyzing the data using Numpy

Course Content:

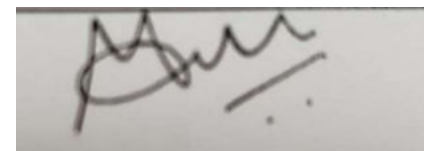
Python Basics, expressions, variables, operators, data structures, sets, lists, tuples and dictionaries.

Conditioning and branching, loops, functions, opening, reading and writing files with Pandas. Handling data with Numpy one dimensional and two dimensional.



Name of the Faculty Member

Baswaraj



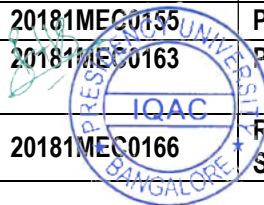
(Mr. baswaraj)

Approval by the HOD.

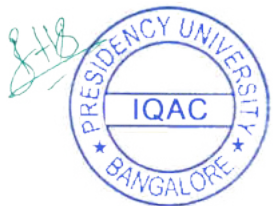
| Department of Mechanical Engineering | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|----------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|---------------|------------------------|---------------------|
| School of Engineering | | | | | | | | | | | | | | | | | | | |
| STUDENT ID NO | STUDENT NAME | 15-06-2021 | 16-06-2021 | 17-06-2021 | 18-06-2020 | 19-06-2021 | 20-06-2021 | 21-06-2021 | 22-06-2021 | 23-06-2021 | 24-06-2021 | 25-06-2021 | 26-06-2021 | 27-06-2021 | 28-06-2021 | 29-06-2021 | Total classes | Total classes attended | Percentage attended |
| | | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | 6PM to 8PM | | | |
| 20181LME0021 | CHANDRASHEKAR A | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87% |
| 20181MEC0009 | ADITYA KUMAR | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 30 | 25 | 85% |
| 20181MEC0022 | ANDEY DEVIVARAPRASAD | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 30 | 26 | 97% |
| 20181MEC0027 | ARCHIT | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 30 | 26 | 85% |
| 20181MEC0029 | ARJUN M | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 86% |
| 20181MEC0033 | AVULA VEERA SWAMY | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 82% |
| 20181MEC0038 | B RAVI KIRAN | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 83% |



| | | | | | | | | | | | | | | | | | | | |
|--------------|--------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|-----|
| 20181MEC0041 | BATHULA VAMSI REDDY | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87% |
| 20181MEC0049 | CHANDAN M | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 86% |
| 20181MEC0050 | CHANDAVATH SAI PREETHAM NAIK | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 83% |
| 20181MEC0078 | HARSHA R | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 90% |
| 20181MEC0092 | KARTHIK V | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 30 | 28 | 91% |
| 20181MEC0096 | KIRAN JOSEPH | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 30 | 28 | 84% |
| 20181MEC0097 | KODI KALYAN | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 30 | 28 | 75% |
| 20181MEC0099 | KOMMINENI SUJITH CHOWDARY | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 25 | 82% |
| 20181MEC0105 | M RENGANATHAN | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 30 | 26 | 85% |
| 20181MEC0106 | M SRIKANTH | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 30 | 26 | 87% |
| 20181MEC0107 | M YOKESH | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 30 | 28 | 86% |
| 20181MEC0111 | MANNALA THARUN | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 30 | 28 | 92% |
| 20181MEC0112 | MANOJ M | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 28 | 85% |
| 20181MEC0115 | MAREGOUDA G | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 30 | 28 | 92% |
| 20181MEC0116 | MARK STEPHEN S | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 84% |
| 20181MEC0132 | NAVEED ALAM | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 30 | 28 | 88% |
| 20181MEC0134 | NAVEEN KUMAR GUPTA | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 30 | 28 | 84% |
| 20181MEC0136 | NIRANJAN S M | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 30 | 28 | 90% |
| 20181MEC0138 | OBULA REDDY DINESH KUMAR REDDY | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 30 | 28 | 85% |
| 20181MEC0140 | P HARSH CHAURASIA | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 30 | 28 | 88% |
| 20181MEC0143 | PAMMI KALYAN REDDY | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 25 | 84% |
| 20181MEC0144 | PANAMAREDDYGARI NAVEEN REDDY | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 1 | 30 | 26 | 84% |
| 20181MEC0147 | P HARSHAVARDHAN REDDY | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 30 | 26 | 85% |
| 20181MEC0148 | PAWAN N S | | | | | | | | | | | | | | | | | | |
| 20181MEC0152 | POOJHA M | | | | | | | | | | | | | | | | | | |
| 20181MEC0155 | PRAJWAL M N | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87% |
| 20181MEC0163 | PUNITH B | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 85% |
| 20181MEC0166 | RAJULAPUDI TULASI SRIRAM | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 85% |



| | | | | | | | | | | | | | | | | | | | | |
|--------------|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|----|-----|
| 20181MEC0171 | ROHAN N A | 2 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 92% |
| 20181MEC0172 | ROHIT G | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 84% |
| 20181MEC0174 | S PRATI K | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 88% |
| 20181MEC0181 | SAHANA S V | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 84% |
| 20181MEC0182 | SAKE RAVITEJA | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 90% |
| 20181MEC0194 | SHANMUGAM SHARAN | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 84% |
| 20181MEC0195 | SHARJUN M | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 90% |
| 20181MEC0198 | SHIVAKUMAR | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 85% |
| 20181MEC0211 | SYED SHOAI B AKHTAR | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 88% |
| 20181MEC0212 | SYED TABREZ PASHA | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 25 | 84% |
| 20181MEC0216 | SUDHEER KUMAR | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 30 | 26 | 84% |
| 20181MEC0219 | VALLEPU KRISHNA KANTH | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 30 | 26 | 85% |
| 20181MEC0236 | MOHAMMED SHAHBAAZ RAFI | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87% |
| 20181MEC0238 | AIMAN FATHIMA | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 87% |
| 20181MEC0244 | EJAMALLA JAGADEESH | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 28 | 87% |
| 20181MEC0246 | MOHAMMED SALAR | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 28 | 88% |
| 20181MEC9009 | ABHISHEK | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 2 | 2 | 30 | 25 | 84% |
| 20181MEC9024 | VIVEK | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 30 | 26 | 84% |
| 20191LME0009 | SHREE HARSHA Y | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 30 | 26 | 85% |



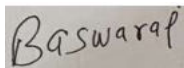
Presidency University, Bengaluru
Value Added Course Marksheet
School of Engineering

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| Course Code : | | MECV-031 | | Academic Year : | | | 2020-2021 | |
|---------------|--------|---|--------------------------------|------------------------------------|----------------------|--------------|--------------------------------------|--------|
| Course Name : | | Python Programming for Mechanical Engineers | | Semester : | | | Even Semester | |
| | | | | Instructor-in-Charge Name : | | | Mr. Baswaraj | |
| | | | | Instructor-in-Charge Employee ID : | | | PUNIV00870 | |
| S. No | UID No | Roll No | Name | School (e.g. SoE/Sol. etc) | Attendance (in %) | Marks (100M) | Eligible for Certificate (Y/N) | Remark |
| 1 | | 20181LME0021 | CHANDRASHEKAR A | SoE | 87% | 73 | Y | |
| 2 | | 20181MEC0009 | ADITYA KUMAR | SoE | 85% | 84 | Y | |
| 3 | | 20181MEC0022 | Andey Devivaraprasad | SoE | 97% | 74 | Y | |
| 4 | | 20181MEC0027 | ARCHIT | SoE | 85% | 80 | Y | |
| 5 | | 20181MEC0029 | ARJUN M | SoE | 86% | 84 | Y | |
| 6 | | 20181MEC0033 | AVULA VEERA SWAMY | SoE | 82% | 76 | Y | |
| 7 | | 20181MEC0038 | B RAVI KIRAN | SoE | 83% | 85 | Y | |
| 8 | | 20181MEC0041 | BATHULA VAMSI REDDY | SoE | 87% | 76 | Y | |
| 9 | | 20181MEC0049 | CHANDAN M | SoE | 86% | 80 | Y | |
| 10 | | 20181MEC0050 | CHANDAVATH SAI PREETHAM NAIK | SoE | 83% | 82 | Y | |
| 11 | | 20181MEC0078 | HARSHA R | SoE | 90% | 82 | Y | |
| 12 | | 20181MEC0092 | KARTHIK V | SoE | 91% | 76 | Y | |
| 13 | | 20181MEC0096 | KIRAN JOSEPH | SoE | 84% | 83 | Y | |
| 14 | | 20181MEC0097 | KODI KALYAN | SoE | 75% | 70 | Y | |
| 15 | | 20181MEC0099 | KOMMINENI SUJITH CHOWDARY | SoE | 82% | 85 | Y | |
| 16 | | 20181MEC0105 | M RENGANATHAN | SoE | 85% | 71 | Y | |
| 17 | | 20181MEC0106 | M SRIKANTH | SoE | 87% | 76 | Y | |
| 18 | | 20181MEC0107 | M YOKESH | SoE | 86% | 78 | Y | |
| 19 | | 20181MEC0111 | MANNALA THARUN | SoE | 92% | 80 | Y | |
| 20 | | 20181MEC0112 | MANOJ M | SoE | 85% | 75 | Y | |
| 21 | | 20181MEC0115 | MAREGOUDA G | SoE | 92% | 75 | Y | |
| 22 | | 20181MEC0116 | MARK STEPHEN S | SoE | 84% | 76 | Y | |
| 23 | | 20181MEC0132 | NAVEED ALAM | SoE | 88% | 81 | Y | |
| 24 | | 20181MEC0134 | NAVEEN KUMAR GUPTA | SoE | 84% | 71 | Y | |
| 25 | | 20181MEC0136 | Niranjn S M | SoE | 90% | 71 | Y | |
| 26 | | 20181MEC0138 | OBULA REDDY DINESH KUMAR REDDY | SoE | 85% | 72 | Y | |
| 27 | | 20181MEC0140 | P HARSH CHAURASIA | SoE | 88% | 72 | Y | |
| 28 | | 20181MEC0143 | PAMMI KALYAN REDDY | SoE | 84% | 70 | Y | |
| 29 | | 20181MEC0144 | PANAMAREDDYGARI NAVEEN REDDY | SoE | 84% | 83 | Y | |
| 30 | | 20181MEC0147 | P HARSHAVARDHAN REDDY | SoE | 85% | 73 | Y | |
| 31 | | 20181MEC0148 | PAWAN N S | SoE | 84% | 79 | Y | |
| 32 | | 20181MEC0152 | POOJHA M | SoE | 83% | 83 | Y | |
| 33 | | 20181MEC0155 | PRAJWAL M N | SoE | 87% | 70 | Y | |
| 34 | | 20181MEC0163 | PUNITH B | SoE | 85% | 83 | Y | |
| 35 | | 20181MEC0166 | RAJULAPUDI TULASI SRIRAM | SoE | 85% | 70 | Y | |
| | | | | | | | 35 | |

Name of Course Instructor 1: Mr. Baswaraj

Employee ID of Course Instructor 1: 0



Signature of Instructor-in-Charge

