

2015-2016

MECHANICAL PRODUCTION

ME PRODUCTION

ACADEMIC YEAR 2015-2016

S1 MEP (2015 Batch)

Sl no	Course code	Subject name	Staff handled
1	MA 101	Calculus	Ms Manju
2	CY 100	Engineering Chemistry	Dr. Shalini
3	BE103	Introduction to Sustainable Engineering	Mr .Anoop M S
4	BE101-02	Introduction to Mechanical Engineering	Ms. Subi
5	BE110	Engineering Graphics	Mr. Dileepkumar C
6	CE100	Basics of Civil Engineering	Ms. Bivina
7	CY 110	Engineering Chemistry Lab	Dr. Shalini
8	ME110	Mechanical Engineering Workshop	Mr. Soman
9	CE110	Civil Engineering Workshop	Ms. Bivina

COURSE OBJECTIVES AND COURSE OUTCOMES FOR

MA 101 CALCULUS

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To give the definition of an infinite series and explain what is meant by the sequence of partial sums. Relate the convergence or divergence of the series to the sequence of partial sums.	Evaluate the limit of a sequence of numbers (infinite series) and determine whether the series converges.
2	Compute partial derivatives of functions of several variables. Apply the theorem on mixed partial derivatives.	Understand the meaning of partial derivatives and calculate partial derivatives.

3	Use concepts of calculus to the model real-world problems	Compute dot product, cross product, length of vectors. Compute partial derivatives, derivatives of vector-valued functions, gradient functions.
4	Evaluate volumes of bounded solids and areas of bounded regions by using the ideas of double and triple integrals.	To change a double integral to polar coordinate. Compute (relatively simple) triple integrals
5	Apply the concept of line integral to work and circulation. Know the definition and properties of conservative vector fields and their relationship to gradient fields.	Determine if a vector field is conservative and find a potential function if conservative. Evaluate line integrals in the plane and in space, including line integrals of vector fields.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR
CY 100 ENGINEERING CHEMISTRY**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To acquire knowledge about desalination of brackish water and treatment of municipal water.	Develop innovative methods to produce soft water for industrial use and potable water at cheaper cost.
2	To gain the knowledge of conducting polymers, bio-degradable polymers and fibre reinforced plastics.	Substitute metals with conducting polymers and also produce cheaper biodegradable polymers to reduce environmental pollution. Design economically and new methods of synthesis nano materials.
3	To learn significance of green chemistry and green synthesis.	Have the knowledge of converting solar energy into most needy electrical.
4	To understand mechanism of corrosion and preventive methods.	Apply their knowledge for protection of different metals from corrosion. To prevents the monuments from getting corroded.

5.	To have an idea and knowledge about the Chemistry of Fuels.	Recent trends in electrochemical energy storage devices.
6.	To study different types of spectroscopy.	Learn how to use different spectroscopy techniques for analysis purpose of simple molecules.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR
BE103 INTRODUCTION TO SUSTAINABLE ENGINEERING COURSE**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To have an increased awareness among students on issues in areas of sustainability.	Able to appreciate and explain the different types of environmental pollution problems and their sustainable solutions
2	To have an insight into global environmental issues.	To be aware of problem related to global environmental issues
3	To establish a clear understanding of the role and impact of various aspects of engineering and engineering decisions on environmental, societal, and economic problems.	Able to apply the concepts of sustainability in their respective area of specialization
4	To understand the role of engineering in achieving sustainable world	To understand the need of waste disposal and management

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR
BE101-02 INTRODUCTION TO MECHANICAL ENGINEERING SCIENCES**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To introduce different disciplines of Mechanical Engineering.	Enable students to distinguish different processes around them by applying knowledge in thermodynamics.
2	To kindle interest in Mechanical Engineering.	To explain the working of different energy conversion devices.
3	To impart basic mechanical engineering principles.	To differentiate between refrigeration and air conditioning devices and describe their working.
4		To recognize different parts of an automobile and explain their working.
5		To enumerate various engineering materials used in manufacturing industries.
6		Indicate the appropriate manufacturing method for production.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR
BE 110: ENGINEERING GRAPHICS**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Increase ability to communicate with people.	To hand letter will improve.
2	Learn to sketch and take field dimensions.	To perform basic sketching techniques will improve.
3	Learn to take data and transform it into graphic drawings.	To draw orthographic projections and sections.
4	Learn basic Auto Cad skills.	To use architectural and engineering scales will increase.
5	Learn basic engineering drawing formats	To produce engineered drawings will improve
6	Prepare the student for future Engineering positions	To convert sketches to engineered drawings will increase.
		7. Students will become familiar with office practice and standards.
		8. Students will become familiar with Auto Cad two dimensional drawings.
		9. Students will develop good communication skills and team work.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR
CE100 BASIC CIVIL ENGINEERING**

SI No	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To inculcate the essentials of civil engineering field to the students of all branches	The students will be able to illustrate the fundamental aspects of civil engineering
2	To provide the students an illustration of the significance of the civil engineering profession satisfying societal needs.	The students should able to plan a building
3		Students will be able to explain about surveying for making horizontal and vertical measurements.
4	.	They will able to illustrate the uses of various building materials and construction of different components of a building.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR
CY 110 ENGINEERING CHEMISTRY LAB**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To make students familiarize with the practical aspects of volumetric analysis of water samples and determine the parameters like alkalinity, chlorides and hardness.	To equip the students to apply the knowledge of Chemistry and take up Chemistry related topics as parts of their project works during higher semester of the course.
2	To improve the knowledge of different types of titrations used in volumetric analysis	To impart sound knowledge in the different fields of theoretical chemistry so as to apply it to the problems in engineering field. (b) To develop analytical capabilities of students so that they can characterize, transform and use materials in engineering and apply knowledge gained in solving related engineering problems
3	To make students develop in terms of practical skills required for analytical projects.	To develop abilities and skills that are relevant to the study and practice of Chemistry.
4	To study flash and fire point	To familiarize the students with different application oriented topics like new generation engineering material different instrumental methods etc.
		To enable the students to acquire the knowledge in the concepts of chemistry for engineering applications.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR
ME 110 MECHANICAL WORKSHOP**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Introduction to basic manufacturing process like welding, moulding, fitting, assembling, smithy, carpentry works etc.	Knowledge achieved to explain the various manufacturing process in the basic mechanical engineering workshop sections-smithy, carpentry, assembling, welding etc.
2	Familiarization of basic manufacturing hand tools and equipment like files, hacksaw, spanner chisel hammers, etc.	Identify the various hand tools used in the basic mechanical engineering workshop sections-smithy, carpentry, assembling, welding etc.
3	Familiarization of various measuring devices like vernier height gauge, vernier caliper, micrometer, steel rule etc.	Able to choose different measuring devices according to the work.
4	Demonstration and study of various machine tools like lathe, drilling machine, milling machine etc.	Ability to name and summarise the operations of various machine tools like lathe, milling, drilling and shaping machines.
5	Familiarizing the disassembling and assembling of machine parts.	Knowledge achieved to disassemble and assemble the machine like IC engines.
6		Skill achieved to construct models by using basic mechanical workshop sections like welding, moulding, smithy, carpentry etc.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR
CE110 CIVIL ENGINEERING WORKSHOP**

SI No	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To inculcate the essentials of civil engineering field to the students of all branches.	The ability to practice civil engineering using up-to-date techniques, skills, and tools as a result of life-long learning ability to design and conduct experiments
2	To provide the students an illustration of the significance of the civil engineering profession satisfying societal needs.	An ability to design a system or component to satisfy stated or code requirements of Civil Engineering.
3	To develop awareness about the instruments used in civil engineering field work.	The students will be able to illustrate the fundamental aspects of civil engineering
4	.	The students should able to plan a building

S2 MEP (2015 Batch)

Sl no	Course code	Subject name	Staff handled
1	MA102	Differential Equations	Ms. Manju
2	PH100	Engineering Physics	Ms. Sreeti Gangadaran
3	BE100	Engineering Mechanics	Mr. Sankar Ram K
4	BE102	Design & Engineering	Mr .Anoop M S
5	EC 100	Basics of Electronics Engineering	Mr. Prajeesh R
6	EE 100	Basics of Electrical Engineering	Ms. Karthika
7	PH 110	Engineering Physics Lab	Ms. Sreeti Gangadaran
8	EE110	Electrical Engineering Lab	Ms. Karthika
9	EC110	Electronic Engineering Lab	Mr. Prajeesh R

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR
MA 102 - DIFFERENTIAL EQUATIONS**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To put it briefly, the point of this class is to take your existing knowledge of calculus and apply it towards the construction and solution of mathematical models in the form of differential equations.	Distinguish between linear, partial and ordinary differential equations. State the basic existence theorem for 1st order ODE's and use the theorem to determine a solution interval
2	Solve non-homogeneous linear equations with constant coefficients using the methods of undetermined coefficients and variation of parameters.	Recognize and solve a non homogeneous differential equation. Find particular solutions to initial value problems.
3	Introduce the Fourier series and its application to the solution of partial differential equation.	Find the Fourier series representation of a function of one variable.

4	To provide the student with the concept and the understanding of basics in Partial Differential Equations.	Knowledge in the Technic, methodology of solving Partial Differential Equations. A basic understanding in the Transforms which are useful in solving engineering problems.
5	This course introduces ideas of wave equation and heat equation which are widely used in the 12 modeling and analysis of a wide range of physical phenomena and has got applications across all branches of engineering.	At the end of the course students will have acquired basic knowledge of differential equations and methods of solving them and their use in analyzing typical mechanical or electrical systems.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR
PH 100 ENGINEERING PHYSICS**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Dynamics of mechanical and electrical oscillation using Fourier series and integrals; time and frequency representations for driven damped oscillators, resonance; one-dimensional waves in classical mechanics and electromagnetism; normal modes.	Solve for the solutions and describe the behavior of a damped and driven harmonic oscillator in both time and frequency domains. Damped and Forced Oscillations oscillating system problems.
2	The fundamental principles of photonics that complement the topics in the optics and laser courses and to help students develop problem-solving skills applicable to real-world photonics problems.	Define and explain the propagation of light in conducting and non-conducting media.
3	Introduce basic concepts and	Define and explain the physics governing laser behaviour and light matter interaction ting and

	principles of acoustics.	non-conducting media.
4		Apply wave optics and diffraction theory to a range of problems
5		Explain and calculate the physical effects of acoustic reflections, absorption, scattering, diffusion, diffraction, and propagation losses.
6		Use advanced theoretical, numerical, and experimental techniques to model and analyze acoustical elements in musical instruments, the human voice, room acoustics, and audio.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR
ENGINEERING MECHANICS COURSE (BE-100)**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To apply the principles of mechanics to practical engineering problems.	Understand the fundamental concepts of mechanics.
2	To identify appropriate structural system for studying a given problem and isolate it from its environment.	Students would be able to apply and demonstrate the concepts of resultant and equilibrium of force system.
	To develop simple mathematical model for engineering problems and carry out static analysis.	Students would be able to determine the properties of planes and solids.
4	To develop simple mathematical model for engineering problems and carry out static analysis.	Understand the concepts of moment of inertia.
5		Students would be able to apply fundamental concepts of dynamics to practical problems.
6		Understand the basic elements of vibration.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR
BE 102 DESIGN AND ENGINEERING COURSE**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To excite the student on creative design and its significance	To appreciate different elements involved in design and to apply them when they called for.
2	To make the student aware of the processes involved in design	Aware of product centred and user centred aspects that makes in the design process.
3	To make the student understand the interesting interaction of various segments of humanities, sciences and engineering in the evolution of a design	To be aware of different stages in design process and results of incorporating other fields with engineering stream
4	To get an exposure as to how to engineer a design.	Understand different stages in manufacturing of a designed product

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR
EC 100 BASIC ELECTRONICS ENGINEERING**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To get basic idea about types, specification and common values of passive components.	Student can identify the active and passive electronic components.
2	To familiarise the working and characteristics of diodes transistors, MOSFET and some measuring instruments.	Student can setup simple circuits using diodes, transistors and other electronic components.
3	To understand working of diodes in circuits and in rectifiers.	Student will get fundamental idea about basic communication and entertainment electronics.
4	To understand the concept of mobile networks.	Student will get fundamental idea about mobile operation.
5		Student will get fundamental idea about different electronic circuits.

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**COURSE OBJECTIVES AND COURSE OUTCOMES FOR
EEE 100 BASIC ELECTRICAL ENGINEERING**

SI No	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To impart a basic knowledge in Electrical Engineering with an understanding of fundamental concepts.	Gain preliminary knowledge in basic concepts of Electrical Engineering.
2	To impart the basic knowledge about the Electric and Magnetic circuits.	Discuss the working of various dc and ac machines
3	To inculcate the understanding about the AC fundamentals.	To predict the behavior of any electrical and magnetic circuits.
4	To understand the working of various Electrical Machines.	To identify the type of electrical machine used for that particular application.
5		To wire any circuit depending upon the requirement.
6		Understand working principle of various analogue electrical measuring instruments.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR
PH 110 ENGINEERING PHYSICS LAB**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Competency in an engineering or science profession via promotion to positions of increasing responsibility, publications, and/or conference presentations.	An ability to apply knowledge of mathematics, science, and engineering.
2	Adaptability to new developments in science and technology by successfully completing or pursuing graduate education in engineering or related fields, or participating in professional development and/or industrial training courses.	An ability to design and conduct experiments, as well as to analyze and interpret data.
3		An ability to identify, formulate, and solve engineering problems
4		Understanding of professional and ethical responsibility
5		The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
6		A recognition of the need for, and an ability to engage in life-long learning

**COURSE OBJECTIVES AND COURSE OUTCOME FOR
EE 110 ELECTRICAL ENGINEERING WORKSHOP**

Sl. No.	Course Objectives	Course Outcomes
		On completion of course the students will be able to:
1	Study and practice on electric circuits	Draw and practice simple house wiring and testing methods
2	To develop skills leading to achievement to connect basic electrical instruments and devices	Develop practical workshop skills in the students.
3	To develop knowledge of electrical wiring and electronic circuits.	Grasp the applications of workshop equipment, wiring accessories etc
4	Various technical facilities used by electricians, wiring regulations, types of cables and electric accessories including switches, lamps, sockets etc.	Physical realization of the range of discrete and integrated semiconductor devices
5		Knowledge of protective devices in electric circuits like fuse, ELCB, MCB etc.

**COURSE OBJECTIVES AND COURSE OUTCOME FOR
EC 110 ELECTRONICS ENGINEERING WORKSHOP**

Sl. No.	Course Objectives	Course Outcomes
		On completion of course the students will be able to:
1	To give the basic introduction of electronic hardware systems.	Students can identify the active and passive electronic components.
2	To provide hands on training with familiarization, testing, assembling.	Students get hands on assembling, dismantling and repairing systems.
3	To develop knowledge of electrical wiring and electronic circuits.	Drawing of electronic circuit diagrams using BIS/ IEEE symbols.
4	To use the various tools and instruments available in the Electronic Workshop.	Testing of electronic components (Resistor, Capacitor, Diode)
5		Assembling of electronic circuit / system on general purpose PCB.