

**2016-2017**

**MECHANICAL ENGINEERING PRODUCTION**

**ME PRODUCTION**  
**ACADEMIC YEAR 2016-2017**

**S3 MEP (2015 Batch)**

Sl no	Course code	Subject name	Staff handled
1	MA 201	Linear Algebra & Complex Analysis	Ms. Sincy
2	ME201	Mechanics of Solids	Mr. Harikrishnan R
3	ME200	Fluid Mechanics & Machinery	Mr. Krishnadas R
4	ME205	Thermodynamics	Mr .Bipin
5	ME210	Metallurgy and Materials Engineering	Mr. Deepu P Nair
6	HS 200	Business Economics	Mr. Rajan
7	ME230	Fluid Mechanics & Machines Lab	Mr. Krishnadas R
8	MP231	Production Engineering Drawing	Mr. Anoop M S

**COURSE OBJECTIVES AND COURSE OUTCOMES** **MA 201**  
**LINEAR ALGEBRA AND COMPLEX ANALYSIS**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	Identify complex-differentiable functions	Determine whether a given function is differentiable, analytic and if so find its derivative. To find harmonic conjugate
2	Use conformal mapping	Upon completion Conformal Mapping students will master concepts and theories of conformal mappings of simply connected and multiply connected domains.
3	Compute complex line integrals	Find parametrizations of curves, and compute complex line integrals directly. Use antiderivatives to compute line integrals. Use Cauchy's integral theorem and formula to compute line integral. Express complex-differentiable functions as power series.

4	Use the residue theorem.	Identify the isolated singularities of a function and determine whether they are removable, poles, or essential. Use the residue theorem to compute complex line integrals and real integrals.
5	Learn to solve systems of linear equations and application problems requiring them. Learn about and work with vector spaces and subspaces.	Demonstrate ability to manipulate matrices and to do matrix algebra. Demonstrate ability to solve systems of linear equations. Demonstrate ability to work within vector spaces and to distil vector space properties.
6	Learn to find and use eigenvalues and eigenvectors of a matrix.	Find the characteristic equation, eigenvalues and corresponding eigenvectors of a given matrix.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
ME 201 MECHANICS OF SOLIDS**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		<b>On completion of course the students will be able to:</b>
1	To acquaint with the basic concepts of stress and deformation in solids.	Understand basic concepts of stress and strain in solids
2	To practice the methodologies to analyse stresses and strains in simple structural members, and to apply the results in simple design problems	Determine the stresses in simple structural members such as shafts, beams, columns etc and apply these results in simple design problems.
3	To study about shear force and bending moment of beams loaded in different conditions.	Draw the shear force and bending moment diagrams of beams loaded in different conditions

**COURSE OBJECTIVES AND COURSE OUTCOMES  
MECHANICS AND MACHINERY**

**ME200 - FLUID**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		<b>On completion of course the students will be able to:</b>
1	To introduce students, the fundamental concepts related to the mechanics of fluids.	Knowledge on basic concepts of fluid properties.
2	To understand the basic principles of fluid machines and devices.	Analyze flow problems associated with statics, kinematics and dynamics of fluids.
3	To apply acquired knowledge on real life problems.	Use Euler's and Bernoulli's equations and the conservation of mass to determine velocities, pressures, and accelerations for incompressible and inviscid fluids.
4	To analyze existing fluid systems and design new fluid systems.	Understand the concepts of viscous boundary layers and the momentum integral.
5		Design and analyze fluid devices such as water turbines and pumps.
6		Understand and rectify problems faced in practical cases of engineering applications.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
ME 205 - THERMODYNAMICS**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		<b>On completion of course the students will be able to:</b>
1	To understand basic thermodynamic principles and laws	Understand the laws of thermodynamics and their significance
2	To develop the skills to analyze and design thermodynamic systems.	Apply the principles of thermodynamic for the analysis of thermal systems
3	To enable students to be more aware of the behavior of materials in engineering applications and select the materials for various engineering applications based on their thermal properties.	Understand the applications of thermodynamics
4	To understand the thermal devices completely	Recognize the relations exhibited in thermodynamics.
5	To determine thermal properties of unknown materials and develop an awareness to apply this knowledge in material design.	Select materials for applications as per their thermal properties.
6		Apply core concepts in thermodynamics to solve engineering problems.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
ME 210 METALLURGY AND MATERIALS ENGINEERING**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To provide fundamental science relevant to materials.	Identify the crystal structures of metallic materials.
2	To provide physical concepts of atomic radius, atomic structure, chemical bonds, crystalline and non-crystalline materials and defects of crystal structures, grain size, strengthening mechanisms, heat treatment of metals with mechanical properties and changes in structure.	Analyze the binary phase diagrams of alloys Fe-Fe <sub>3</sub> C, etc.
3	To enable students to be more aware of the behavior of materials in engineering applications and select the materials for various engineering applications.	Correlate the microstructure with properties, processing and performance of metals.
4	To understand the causes behind metal failure and deformation.	Recognize the failure of metals with structural change.
5	To determine properties of unknown materials and develop an awareness to apply this knowledge in material design.	Select materials for design and construction.
6		Apply core concepts in materials science to solve engineering problems.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
HS 200 BUSINESS ECONOMICS**

<b>Sl. No.</b>	<b>Course Objectives</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
		<b>On completion of course the students will be able to:</b>
1	To familiarize the prospective engineers with elementary Principles of Economics and Business Economics.	Make investment decisions based on capital budgeting methods in alignment with micro economic theories.
2	To acquaint the students with tools and techniques that are useful in their profession in Business Decision Making which will enhance their employability;	Make investment decisions based on capital budgeting methods in alignment with macro economic theories.
3	To apply business analysis to the “firm” under different market conditions.	Analyse the profitability of the firm, economy of operation.
4	To apply economic models to examine current economic scenario and evaluate policy options for addressing economic issues.	Determination of price under various market situations with good grasp on the effect of trade cycles in business.
5		Gain knowledge of elementary accounting concepts used for preparing balance sheet and interpretation of balance sheet.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
ME 230 - FLUID MECHANICS AND MACHINES LABORATORY**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To provide practical knowledge in verification of principles of fluid flow.	To provide the students with a solid foundation in fluid flow principles.
2	To impart knowledge in measuring pressure, discharge and velocity of fluid flow.	To provide the students knowledge in calculating performance analysis in turbines and pumps and can be used in power plants.
3	To understand Major and Minor Losses.	Students can able to understand to analyze practical problems in all power plants and chemical industries.
4	To gain knowledge in performance testing of Hydraulic Turbines and Hydraulic Pumps at constant speed and Head.	Conduct experiments (in teams) in pipe flows and open-channel flows and interpreting data from model studies to prototype cases.
5		Analyze a variety of practical fluid-flow devices and utilize fluid mechanics principles in design.
6		Given the required flow rate and pressure rise, select the proper pump to optimize the pumping efficiency.



**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
PRODUCTION ENGINEERING DRAWING COURSE**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To understand the principles and requirements of machine and production drawings	Upon successful completion of the course the student will be able to prepare the detailed drawing of the assembled machine parts as per the standards individually.
2	To enable preparation of individual and assembled parts of the machine as per the standards	Start making drawings in computer aided design software.

**S1 MEP (2016 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	Mr. Deepu P Nair
5	BE100	Engineering Mechanics	Mr. Sankar Ram K
6	EE 100	Basics of Electrical Engineering	Mr. Athul Thomas
7	CY110	Engineering Chemistry Lab	Ms. Renju R
8	EE 110	Electrical Engineering Workshop	Mr. Athul Thomas
9	ME110	Mechanical Engineering workshop	Mr. Soman

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
MA 101 CALCULUS**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		<b>On completion of course the students will be able to:</b>
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  
BE 103 INTRODUCTION TO SUSTAINABLE ENGINEERING COURSE**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		<b>On completion of course the students will be able to:</b>
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
		<b>On completion of course the students will be able to:</b>
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  
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  
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  
CY 110 ENGINEERING CHEMISTRY LAB**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		<b>On completion of course the students will be able to:</b>
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 devises like vernier height gauge, vernier caliper, micrometer, steel rule etc.	Able to choose different measuring devises 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 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.

**S4 MEP (2015 Batch)**

<b>Sl no</b>	<b>Course code</b>	<b>Subject name</b>	<b>Staff handled</b>
1	MA202	Probability Distributions, Transforms and Numerical Methods	Ms. Sreelekha
2	MP212	Machine Tools	Ms. Sruthi Jose
3	ME216	Mechanical Technology	Mr. Yadhu
4	MP206	Foundry Technology	Mr .Anoop M S
5	MP208	Metal Joining Technology	Mr. Deepu P Nair
6	HS 210	Life Skills	Ms. Anisha Uttaman
7	MP232	Machine Tools Lab	Mr. Aravind R
8	CE230	Material Testing Lab	Mr. Vishnu K

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
MA- 202- PROBABILITY DISTRIBUTIONS AND NUMERICAL METHODS**

<b>Sl. No.</b>	<b>Course Objectives</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
		<b>On completion of course the students will be able to:</b>
1	Providing students with a formal treatment of probability theory.	Develop problem-solving techniques needed to accurately calculate probabilities.
2	Equipping students with essential tools for statistical analyses at the graduate level.	Apply selected probability distributions to solve problems.
3	The goal is to provide the basic understanding of the derivation analysis and use of these numerical methods along with the rudimentary understanding of finite precision arithmetic.	Apply problem-solving techniques to solving real-world events.
4	Apply the appropriate numerical techniques for problems	Be aware of the use of numerical methods in modern scientific computing. Be familiar with finite precision computation. Be familiar with numerical solutions of nonlinear equations in a

		single variable.
5		Be familiar with numerical interpolation and approximation of functions. Be familiar with numerical integration and differentiation
6		Be familiar with numerical solution of ordinary differential equations. Be familiar with calculation and interpretation of errors in numerical methods.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
MP212 - MACHINE TOOLS**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		<b>On completion of course the students will be able to:</b>
1	To impart knowledge on basic concepts of various machining processes and machine tools.	Understand working of various Machine Tools.
2	The course provides students with fundamental knowledge and principles in material removal processes.	Understand speed and feed mechanisms of machine tools.
3	To develop knowledge and importance of metal cutting parameters.	Estimate machining times for machining operations on machine tools
4	To apply knowledge of basic mathematics to calculate the machining parameters for different machining processes.	Apply cutting mechanics to metal machining based on cutting force and power consumption.
5		Operate lathe, milling machines, drill press, grinding machines, etc.

6	Select appropriate machining processes and conditions for different metals.
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**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
MECHANICAL TECHNOLOGY**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		<b>On completion of course the students will be able to:</b>
1	To make the students aware of the area of heat transfer and allied fields	Identify heat transfer equipment and the theory behind them
2	To give students knowledge of mechanical power generation devices and its applications	Understand working principles and performance of IC engines, which leads him to know more about automobiles and to search for improved performances.
3	To impart knowledge of low temperature and its applications	Understand the working of different type of compressors.
4	To analyse the aspects of engineering problems solvable by applying the subject.	Know the principles and working of refrigerators and air conditioning equipments.
5		Know the concept of thermodynamics.
6		Apply core concepts in mechanical technology to solve engineering problems.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
MP206 - FOUNDRY TECHNOLOGY**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		<b>On completion of course the students will be able to:</b>
1	To introduce different techniques and applications of casting process.	The students will have exposure to the different casting techniques.
2	To impart basic casting design principles.	Exposure to casting design principles and its applications.
3	To introduce different metal melting techniques.	To understand different technologies in metal melting process
4	Introduce most modern techniques used in foundry	To get the layout of a foundry industry
5	To correlate environmental responsibilities of foundry related industries	To be aware about the impact of industries on environment

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
MP208- METAL JOINING TECHNOLOGY**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		<b>On completion of course the students will be able to:</b>
1	To introduce different types of welding techniques used in industry for metal joining	Identify the welding processes used in different types of welded joint.
2	To develop a skill of selecting a welding procedure for specific applications.	Select a welding process for a joint
3	To familiarize modern welding technique and machines.	Recognize the techniques behind modern welding techniques/methods.
4	The basic principles and methods utilized in the joining and welding technology of engineering materials	Know the different types of welding processes and the principles guiding the operations.
5		Understand the causes of welding defects and how it can be prevented;
6		Appreciate the effect of welding parameters on the structure and mechanical properties of welded parts.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
HS210 LIFE SKILLS**

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	To develop communication competence in prospective engineers.	Communicate effectively.
2	To enable them to convey thoughts and ideas with clarity and focus. To develop report writing skills.	Make effective presentations.
3	To equip them to face interview & Group Discussion.	Write different types of reports.
4	To inculcate critical thinking process.	Face interview & group discussion
5	To prepare them on problem solving skills.	Critically think on a particular problem.
6	To provide symbolic, verbal, and graphical interpretations of statements in a problem description.	Handle Engineering Ethics and Human Values.



**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
MP 232 MACHINE TOOLS LAB- I**

<b>Sl. No.</b>	<b>Course Objectives</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
		<b>On completion of course the students will be able to:</b>
1	To provide fundamental knowledge of various metal cutting practices, fundamentals of machine tools and principles in material removal processes.	Select cutting tool materials and tool geometries for different metals.
2	To apply the fundamentals and principles of metal cutting to practical applications using lathes, shaping machines and drilling machines etc.	Apply cutting mechanics to metal machining based on cutting force and power consumption.
3	To demonstrate the fundamentals of machining processes and machine tools	Operate lathe, shaping machines, drilling machines, etc.
4	To develop knowledge and importance of metal cutting parameters.	To develop fundamental knowledge on tool materials, cutting fluids and tool wear mechanisms.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR  
CE 230 MATERIAL TESTING LAB**

SI No	Course Objectives	Subject Learning Outcomes or Course Outcomes
		On completion of course the students will be able to:
1	The objective of the strength of materials lab is to demonstrate the basic principles in the area of strength and mechanics of materials and structural analysis to the undergraduate students through a series of experiments.	To provide knowledge on mechanical behaviour of materials
2	The experiments are performed to measure the properties of the materials such as impact strength, tensile strength, compressive strength, hardness, ductility etc	To acquaint with the experimental methods to determine the mechanical properties of materials.
3	The experiments are performed to measure the properties of the materials such as impact strength, tensile strength, compressive strength, hardness, ductility etc.	To acquaint with the experimental methods to determine the mechanical properties of materials.

**S2 MEP (2016 Batch)**

<b>Sl no</b>	<b>Course code</b>	<b>Subject name</b>	<b>Staff handled</b>
<b>1</b>	<b>MA102</b>	<b>Differential Equations</b>	<b>Ms. Ambili</b>
<b>2</b>	<b>PH100</b>	<b>Engineering Physics</b>	<b>Mr. Rajesh R</b>
<b>3</b>	<b>BE110</b>	<b>Engineering Graphics</b>	<b>Mr. Dileepkumar C</b>
<b>4</b>	<b>BE102</b>	<b>BE102 Design &amp; Engineering</b>	<b>Mr .Anoop M S</b>
<b>5</b>	<b>EC 100</b>	<b>Basics of Electronics Engineering</b>	<b>Mr. Viswajith</b>
<b>6</b>	<b>CE100</b>	<b>Basics of Civil Engineering</b>	<b>Ms. Tincy</b>
<b>7</b>	<b>EC110</b>	<b>Electronics Engineering Workshop</b>	<b>Ms. Linta</b>
<b>8</b>	<b>PH 110</b>	<b>Engineering Physics lab</b>	<b>Mr. Rajesh R</b>
<b>9</b>	<b>CE 110</b>	<b>Civil Engineering Workshop</b>	<b>Ms. Tincy</b>

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR**

**MA 102 - DIFFERENTIAL EQUATIONS**

<b>Sl. No.</b>	<b>Course Objectives</b>	<b>Subject Learning Outcomes or Course Outcomes</b>
		<b>On completion of course the students will be able to:</b>
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 28 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
		<b>On completion of course the students will be able to:</b>
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  
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  
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	Will be capable to think of innovative design incorporating different segments of knowledge gained in the course
2	To make the student aware of the processes involved in design	Students will have a broad perspective of design covering function, cost, environmental sensitivity, safety and other factors other than engineering analysis.
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 about patents, copyrights and product liability etc.
4	To get an exposure as to how to engineer a design.	Use the gained knowledge for getting more updating things in the fields of design

**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.

**COURSE OBJECTIVES AND COURSE OUTCOMES FOR**

**CE 100 BASIC CIVIL ENGINEERING**

Sl 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 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 gives 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.

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

Sl. No.	Course Objectives	Subject Learning Outcomes or Course Outcomes
		<b>On completion of course the students will be able to:</b>
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
<b>6</b>		A recognition of the need for, and an ability to engage in life-long learning

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

SI No	Course Objectives	Subject Learning Outcomes or Course Outcomes
		<b>On completion of course the students will be able to:</b>
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