

**Nirma University
Institute of Technology**

1EE801 Electrical Science [2 0 2 3]

Course Learning Outcomes (CLOs)

At the end of the course, the students shall be able to:

- 1 illustrate the role of circuit elements in different system conditions (BL2)
- 2 Distinguish the operational aspects of AC-DC systems (BL4)
- 3 Appraise the role of semiconductor devices and their applications (BL4)
- 4 Apply the concepts of digital electronics for logic circuit design (BL3)
- 5 Explain the use of electrical safety devices in basic applications (BL2)

1CS501 Computer Programming [2 0 2 3]

Course Learning Outcomes (CLOs) [CLO sequence can be reorder]

At the end of the course, the students shall be able to:

- 1 Demonstrate the significance and application of C Language constructs in program development (BL2)
- 2 Apply the programming skill to solve real-life problems through software or hardware / software co-design (BL3)
- 3 Build task-specific, user-oriented, time - constrained program (BL4)
- 4 Analyze logically the problem and select the optimized method to solve the problem (BL4)

1ME801 Engineering Drawing & Workshop [1 0 4 3]

Course Learning Outcomes (CLOs)

At the end of the course, the students shall be able to:

- 1 relate the applications of engineering drawing and drawing standards with various disciplines of engineering, and construct the basic engineering curves (BL1)
- 2 apply the principles of orthographic and isometric projections for various solid geometries (BL3)
- 3 make use of computer aided drafting tools for preparing engineering drawings (BL3)
- 4 summarize the understanding of workshop practices and make use of various tools for given jobs (BL2)

1MH301 Statistics [2 0 2 3]

Course Learning Outcomes (CLOs)

At the end of the course, the students shall be able to:

- 1 Know the basic concepts of probability, random variables and probability distribution and its uses (BL1)
- 2 Compute and interpret descriptive statistics using numerical and graphical techniques (BL3)
- 3 Use hypothesis testing methods to make appropriate decision for scientific and social problems (BL3)
- 4 Analyze real data using software (BL4)

1SP101 **Chemistry** **[2 0 2 3]**
Course Learning Outcomes (CLOs)

At the end of the course, the student will be able to:-

- 1 illustrate the basic fundamentals and defend their application in various fields of engineering (BL1)
- 2 classify the materials on the basis of their properties (BL2)
- 3 select the appropriate experimental method of analysis and interpret its result. (BL3)
- 4 identify and apply the principles of green chemistry in improving the existing technology (BL3)

1HS102 **Written Communication** **[2 1 0 3]**
Course Learning Outcomes (CLOs) [CLO sequence can be reorder]

At the end of the course, the students shall be able to:

- 1 Organise ideas coherently and make arguments to express their position (BL3)
- 2 Develop their arguments clearly and correctly (BL3)
- 3 illustrate different forms of writing (BL2)
- 4 Demonstrate ethical understanding and skills in writing (BL2)

1MH101 **Mathematics I** **[2 1 0 3]**
Course Learning Outcomes (CLOs)

At the end of the course, the students shall be able to:

- 1 Comprehend the concept of Vector space (BL2)
- 2 Extend the knowledge of matrix theory and its application in engineering (BL2)
- 3 Solve real world problems using linear transformations (BL3)
- 4 Apply the knowledge of eigen value & eigen vector for advance matrix (BL3)

1HS101 **General English** **[2 0 2 3]**
Course Learning Outcomes (CLOs) [CLO sequence can be reorder]

At the end of the course, the students shall be able to:

- 1 Develop and build upon their abilities in listening, speaking and reading skills. (BL3)
- 2 Inculcate the habit of reading and listening, thereby, absorbing profound ideas, learning appropriate expressions and enhancing vocabulary. (BL3)
- 3 Demonstrate effective speaking skills by preparing, organising and presenting their ideas during critical conversation (BL3)
- 4 Examine ethical, moral, social and cultural values through the study of literature. (BL4)

1CL501	Environmental Science	[2 1 0 3]
Course Learning Outcomes (CLOs) [CLO sequence can be reorder]		
At the end of the course, the students shall be able to:		
1	Demonstrate principles of conservation of environment and energy resources	(BL2)
2	Summarize environmental pollutions and control techniques	(BL2)
3	Illustrate concepts of sustainability and environmental impact assessment	(BL2)
4	Identify possible solutions regarding social issues related to the environment	(BL3)

1SP201	Physics	[2 0 2 3]
Course Learning Outcomes (CLOs) [CLO sequence can be reorder]		
At the end of the course, the students shall be able to:		
1	Understand the fundamental principles of Physics behind the current technological advancements	(BL2)
2	Apply the principles of Physics for solving the engineering problems	(BL3)
3	Analyze the existing technological limitations with the help of modern Physics concepts	(BL4)
4	Measure various characteristics of physical quantities and establish the proof of concepts	(BL4)

1FT101	Health, Wellness & Yoga	[2 0 2 3]
Course Learning Outcomes (CLOs):		
At the end of the course, the students shall be able to:		
1	Explain the concept of health and nutrition and describe the significance of macronutrients and micronutrients	(BL2)
2	List risk factors, causes, signs, symptoms, and diagnosis of selected disorders	(BL4)
3	Discuss the prevention and general management of lifestyle disorders & elaborate on substance abuse, their prevention, and management.	(BL5)
4	Relate to the importance of Yoga in health and well-being and perform different Asanas properly	(BL3)
5	Practice pranayama and meditation in their life	(BL3)

1MH201	Mathematics II	[2 1 0 3]
Course Learning Outcomes (CLOs):		
At the end of the course, the students shall be able to:		
1	Distinguish between different kind of infinite series	(BL2)
2	Use multi variable differential calculus to solve real world problems	(BL3)
3	Identify special functions and its application	(BL1)
4	Apply multi variable integral calculus to solve engineering problems	(BL3)

1CS101

Introduction to AI & ML

[2 0 2 3]

Course Learning Outcomes (CLOs):

At the end of the course, the students shall be able to:

- 1** Define the need of artificial intelligence and machine learning (BL1)
- 2** Explain working of artificial intelligence and machine learning (BL2)
- 3** Make use of machine learning techniques to solve problems in different domains using scientific programming (BL2)
- 4** Identify the patterns in the data using scientific programming language (BL3)