



Mahavir Education Trust's  
**SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE**  
Chembur, Mumbai - 400 088  
**UG Program in Electronics & Telecommunication Engineering**  
**Academic Year:- 2019-20**

**Semester - I**

Unique Course Number: 1.FEC 101

Course Name: Engineering Mathematics - I

Unique CO Number	Course Outcome (CO) Statement
1. FEC1011	<i>Apply</i> De'Moivre's Theorem to <i>obtain</i> the powers and roots of a complex number.
1. FEC1012	<i>Use</i> the relation between circular and hyperbolic functions to <i>separate</i> into real and imaginary parts of hyperbolic and logarithmic functions.
1. FEC1013	<i>Develop</i> skills of successive Differentiation, expansion of functions in ascending power of variable and value of the function in neighbourhood of some points.
1. FEC1014	Apply the concept of partial differentiation to <i>find</i> total derivative and maxima & minima of a function of two independent variables.
1. FEC1015	<i>Apply</i> Numerical Techniques to <i>solve</i> Transcendental equations using Newton-Raphson and Regula-falsi methods.
1. FEC1016	<i>Calculate</i> the rank of a matrix by reducing it to Echelon form, Normal form and <i>use</i> this concept to <i>solve</i> the system of linear equations.

Unique Course Number: 1. FEC102 Course Name: APPLIED PHYSICS-1

Unique CO Number	Course Outcome (CO) Statement
1.FEC102.1	Recall the basic principles, methodologies and crystal structures.
1.FEC102.2	Understand and describe the concepts pertaining to quantum mechanics, crystallography and semiconductor physics.
1.FEC102.3	Discuss the principles of interference in thin films, superconductivity and engineering materials.
1.FEC102.4	Apply the theory of quantum mechanics, crystallography and semiconductor physics for explaining the structure and functionality of atoms, crystals and devices.



Mahavir Education Trust's  
**SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE**  
Chembur, Mumbai - 400 088  
**UG Program in Electronics & Telecommunication Engineering**  
**Academic Year:- 2019-20**

1.FEC102.5	Develop and utilize the concepts of interference in thin films, superconductivity and engineering materials for interpretation under varying conditions.
1.FEC102.6	Demonstrate the use of concepts learnt in practical applications.

Unique Course Number: 1. FEC103 Course Name: APPLIED CHEMISTRY-I

Unique CO Number	Course Outcome (CO) Statement
1. FEC1031	Recall the basic concepts of engineering chemistry such as atomic and molecular structure, phases, industrial polymer
1. FEC1032	Explain the concept of microscopic chemistry in terms of atomic and molecular orbital theory and relate it to molecular structure
1. FEC1033	Illustrate the knowledge of various types of intermolecular forces and relate it to properties of materials
1. FEC1034	Describe the concept of phase transformation of a given material
1. FEC1035	Illustrate the knowledge of polymers, fabrication method, and conducting polymers in various industrial fields
1. FEC1036	Analyze the quality of water and suggest methods for treatment

Unique Course Number: 1.FEC104 Course Name: Engineering Mechanics

Unique CO Number	Course Outcome (CO) Statement
1.FEC1041	Illustrate the concept of force, moment and apply the same in determining resultant of coplanar and non-coplanar system
1.FEC1042	Determine centroid of plane lamina.



Mahavir Education Trust's  
**SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE**  
Chembur, Mumbai - 400 088  
**UG Program in Electronics & Telecommunication Engineering**  
**Academic Year:- 2019-20**

1.FEC1043	Apply the conditions of equilibrium in two-dimensional system with the help of FBD
1.FEC1044	Apply laws of friction on bodies lying on a horizontal and inclined plane.
1.FEC1045	Establish relation between velocity and acceleration of a particle and analyze the motion by plotting relation
1.FEC1046	Illustrate different types of motion and establish kinematic relation for a rigid body and analyze particles in motion using force , acceleration, work-energy and impulse momentum principles

Unique Course Number: 2.FEC105

Course Name: Basic Electrical Engineering

Unique CO Number	Course Outcome (CO) Statement
2.FEC1051	Recall methodologies, procedures and principles of basic electrical engineering.
2.FEC1052	Understand the various electrical circuit theorems and principles.
2.FEC1053	Understand the principle and working of static electrical machines.
2.FEC1054	Understand the principle and working of rotating electrical machines.
2.FEC1055	Apply network theorems to circuits to determine the circuit response.
2.FEC1056	Analyze behavior of basic electrical circuits.

Unique Course Number: 1.FEC106

Course Name: Professional Communication and Ethics

Unique CO Number	Course Outcome (CO) Statement
1.FEC1061	Eliminate barriers and use verbal and non verbal cues at social and workplace situations

**Department of Electronics & Telecommunication Engineering**



Mahavir Education Trust's  
**SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE**  
Chembur, Mumbai - 400 088  
**UG Program in Electronics & Telecommunication Engineering**  
**Academic Year:- 2019-20**

1.FEC1062	Employ Listening strategies to comprehend wide ranging vocabulary , grammatical structures ,tone and pronunciation
1.FEC1063	Prepare effectively for speaking at social, academic and business situations.
1.FEC1064	Use reading strategies for faster comprehension, summarization and evaluation of texts.
1.FEC1065	Acquire effective writing skills for drafting academic, business and technical documents.
1.FEC1066	Successfully interact in all kinds of settings, displaying refined grooming and social skills.

Unique Course Number: 1. FEL102      Course Name: APPLIED PHYSICS-I Laboratory

Unique CO Number	Course Outcome (CO) Statement
1.FEL1021	To Plot Miller Indices
1.FEL1022	To analyze the working of pn junction diode based on its IV characteristics.
1.FEL1023	To study the use of zener diode as voltage regulator.
1.FEL1024	To calculate the thickness of paper using wedge shaped thin film based on the concept of interference in thin films.
1.FEL1025	To study charging and discharging of super capacitor
1.FEL1026	To relate theoretical analysis with the experimental data obtained.



Mahavir Education Trust's  
**SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE**  
Chembur, Mumbai - 400 088  
**UG Program in Electronics & Telecommunication Engineering**  
**Academic Year:- 2019-20**

Unique Course Number: 1. FEL103      Course Name: APPLIED CHEMISTRY-I Laboratory

Unique CO Number	Course Outcome (CO) Statement
1.FEL1031	Understand the significance of viscosity and viscosity index of material
1.FEL1032	Understand importance of estimation of the Chloride in water
1.FEL1033	Determine hardness of water to decide treatment of water before use
1.FEL1034	Understand the importance of pH value in water quality measurement
1.FEL1035	Understand the structure and properties of polymer for it's engineering applications
1.FEL1036	Document their observations and interpretation after performing the experiment satisfactorily.

Unique Course Number: 1.FEL104      Course Name: Engineering Mechanics Laboratory

Unique CO Number	Course Outcome (CO) Statement
1.FEL1041	To illustrate the law of moment, with the help of physical models
1.FEL1042	To illustrate the law of equilibrium with the help of physical models
1.FEL1043	To illustrate the law of equilibrium with the help of physical models
1.FEL1044	To estimate the friction force between two surfaces
1.FEL1045	To calculate acceleration due to gravity
1.FEL1046	To find coefficient of restitution between steel ball & glass ball.



Mahavir Education Trust's  
**SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE**  
Chembur, Mumbai - 400 088  
**UG Program in Electronics & Telecommunication Engineering**  
**Academic Year:- 2019-20**

Unique Lab Number: 2.FEL105

Lab Name: Basic Electrical Engineering Laboratory

Unique LO Number	Laboratory Outcome (LO) Statement
2.FEL1051	Recall and Implement Electric Circuits
2.FEL1052	Understand the theoretical concept and relate with practical behavior of Electric Circuit
2.FEL1053	Understand the construction and working of Electrical machine
2.FEL1054	Demonstrate correct usage of a method or procedure of Electric Circuit
2.FEL1055	Identify the assumptions and differentiate between theoretical and practical results within permissible limits of error in Electric Circuit
2.FEL1056	Analyze the losses and efficiency of Static Electrical machine