

**DON BOSCO INSTITUTE OF TECHNOLOGY, KURLA, MUMBAI**

**FE (BASIC SCIENCES AND HUMANITIES) DEPARTMENT, (ODD SEMESTER, 2022-23)**

<b>Course Name:</b>	<b>Engineering Mathematics I</b>		
<b>Course Code</b>	<b>FEC101</b>		
<b>Faculty Name:</b>	<b>Dr. Revathy Sundararajan, Prof.</b>		
<b>Year</b>	<b>1</b>	<b>Sem</b>	<b>I</b>
<b>CO Number</b>	<b>Course Outcome</b>		
<b>FEC101.1</b>	Students will be able to recall different representations and operations of complex numbers; know the statement of De-Moivre's		
<b>FEC101.2</b>	Students will be able to Identify different types of matrices, identify the real and imaginary parts of complex numbers appearing in the		
<b>FEC101.3</b>	Students will be able to find partial derivatives of implicit and composite functions and also by using Euler's theorem, separate the real		
<b>FEC101.4</b>	Apply De Moivre's theorem in finding the powers and roots of complex numbers, determine the rank of a matrix and apply the concept in solving the system of linear equations by analytical methods, apply the concept of matrices to coding theory, apply the concept of partial differentiation in finding maxima and minima of functions , apply the concept of Leibnitz's theorem for successive differentiation, apply Taylor's & Maclaurin's series for expansion of functions as series.		
<b>FEC101.5</b>	Apply Open source software Scilab to solve system of linear equations using numerical methods and to find maxima minima of		
<b>FEC101.6</b>	Perform mini projects based on Application of Mathematics (the self learning topics given in the syllabus)		
<b>Course Name:</b>	<b>Engineering Physics I</b>		
<b>Course Code</b>	<b>FEC102</b>		
<b>Faculty Name:</b>	<b>Dr. Vinod Gokarna and Mr. Sameer Hadkar</b>		
<b>Year</b>	<b>1</b>	<b>Sem</b>	<b>I</b>
<b>CO Number</b>	<b>Course Outcome</b>		
<b>FEC102.1</b>	Students will be able to grasp and recall the basic concepts of core Physics topics like Quantum Physics, Crystallography,		
<b>FEC102.2</b>	Students will be able to understand and describe the basic concepts of Physics topics like Quantum Physics, Crystallography,		
<b>FEC102.3</b>	Students will be able to relate, integrate knowledge and explain the principles involved with their engineering disciplines like		
<b>FEC102.4</b>	Students will be able to review, elucidate with examples and apply the fundamental principles of Physics to solve numericals and		
<b>FEC102.5</b>	Students will be able to demonstrate and conclude on the experiment performed in topics like Quantum Physics, Crystallography,		
<b>FEC102.6</b>	Students will be able to perform mini projects which will encourage engineering students to venture into the research field.		
<b>Course Name:</b>	<b>Engineering Chemistry I</b>		
<b>Course Code</b>	<b>FEC103</b>		

<b>Faculty Name:</b>	<b>Ms.Kartiki B. and Ms. Anice M</b>		
<b>Year</b>	<b>1</b>	<b>Sem</b>	<b>I</b>
<b>CO Number</b>	<b>Course Outcome</b>		
<b>FEC 103.1</b>	Students will be able to define and recall fundamental concepts in atomic and molecular structures, aromaticity, intermolecular forces, phase rule, water quality, polymers.		
<b>FEC 103.2</b>	Students will be able to state aromaticity, phase rule terms and relative strengths of intermolecular forces, properties and applications		
<b>FEC 103.3</b>	Students will be able to describe the various methods or processes involved in the softening and purification of water, synthesis and		
<b>FEC 103.4</b>	Students will be able to suggest/ justify the appropriate methods for treatment of water, fabrication of polymers, justify the properties		
<b>FEC 103.5</b>	Students will be able to analyze data, solve numerical problems based on estimation of hardness, COD, BOD of water, determination		
<b>FEC 103.6</b>	Seminar/Group Activity : Students will be able to review research literature, analyse complex problems, present new concepts, ideas,		
<b>Course Name:</b>	<b>Engineering Mechanics</b>		
<b>Course Code</b>	<b>FEC104</b>		
<b>Faculty Name:</b>	<b>Mr. Hemant H. &amp; Mr. Juned A.</b>		
<b>Year</b>	<b>1</b>	<b>Sem</b>	<b>I</b>
<b>CO Number</b>	<b>Course Outcome</b>		
<b>FEC 104.1</b>	Students will be able to state the fundamental laws, basic principles and definitions that describe the state of rest and motion of rigid		
<b>FEC 104.2</b>	Students will be able to convert a system of coplanar/Non-coplanar forces into its equivalent resultant force system using the		
<b>FEC 104.3</b>	Students will be able to demonstrate the understanding of basic concepts and principles learnt in the subject.		
<b>FEC 104.4</b>	Students will be able to apply the equilibrium equations for problems on static bodies/structures to determine the internal forces and		
<b>FEC 104.5</b>	Students will be able to interpret the different types of motion performed by a particle using kinematic and kinetic analysis and solve		
<b>FEC 104.6</b>	Students will be able to apply the basic principles/laws learnt in the subject to determine unknown parameters.		
<b>Course Name:</b>	<b>Basic Electrical Engineering</b>		
<b>Course Code</b>	<b>FEC105</b>		
<b>Faculty Name:</b>	<b>Ms. Pratibha D. and Mr. Joshua</b>		
<b>Year</b>	<b>1</b>	<b>Sem</b>	<b>I</b>
<b>CO Number</b>	<b>Course Outcome</b>		
<b>FEC 105.1</b>	Students will be able to define the various laws, theorems, terms related to dc circuits, ac circuits, generation of three phase voltage,		
<b>FEC 105.2</b>	Students will be able to explain the fundamental concepts related to dc circuits, ac circuits, generation of three phase voltage,		
<b>FEC 105.3</b>	Students will be able to solve problems by applying fundamentals laws, theorems of electricity to given dc and ac circuits and		
<b>FEC 105.4</b>	Students will be able to analyse the various parameters related to dc circuits, single phase and three phase ac circuits and transformers.		

<b>FEC 105.5</b>	Students will be able to evaluate the given single phase, three phase ac circuits, and transformers. (Evaluating)		
<b>FEC 105.6</b>	Students will be able to simulate dc and ac circuits involving independent sources.		
<b>Course Name:</b>	<b>Engineering Physics I</b>		
<b>Course Code</b>	<b>FEL101</b>		
<b>Faculty Name:</b>	<b>Dr. Vinod Gokarna and Mr. Sameer Hadkar</b>		
<b>Year</b>	<b>1</b>	<b>Sem</b>	<b>I</b>
<b>CO Number</b>	<b>Course Outcome</b>		
<b>FEL 101.1</b>	Perform the experiments based on interference in thin films and analyze the results.		
<b>FEL 101.2</b>	Verify the theory learned in the module crystallography.		
<b>FEL 101.3</b>	Perform the experiments on various semiconductor devices and analyze their characteristics.		
<b>FEL 101.4</b>	Perform simulation study on engineering materials.		
<b>Course Name:</b>	<b>Engineering Chemistry I</b>		
<b>Course Code</b>	<b>FEL102</b>		
<b>Faculty Name:</b>	<b>Ms.Kartiki B. and Ms. Anice M</b>		
<b>Year</b>	<b>1</b>	<b>Sem</b>	<b>I</b>
<b>CO Number</b>	<b>Course Outcome</b>		
<b>FEL 102.1</b>	Students will be able to define and recall different properties and fundamental concepts related to water hardness, molecular weight		
<b>FEL 102.2</b>	Students will be able to describe the procedure/ process involved in determining the water hardness, molecular weight of polymers,		
<b>FEL 102.3</b>	Students will be able to explain the various mechanisms and processes involved in the determining the water hardness, molecular		
<b>FEL 102.4</b>	Students will be able to reason out and justify the efficacy of softening method of water, suitability of lubricant for engineering		
<b>FEL 102.5</b>	Students will be able to perform experiments, obtain data, solve numerical problems, analyze data and draw inference on basis of their		
<b>Course Name:</b>	<b>Engineering Mechanics</b>		
<b>Course Code</b>	<b>FEL103</b>		
<b>Faculty Name:</b>	<b>Mr. Hemant H. &amp; Mr. Juned A.</b>		
<b>Year</b>	<b>1</b>	<b>Sem</b>	<b>I</b>
<b>CO Number</b>	<b>Course Outcome</b>		
<b>FEL 103.1</b>	Students will be able to explain the fundamental laws, basic principles state of rest and in motion of rigid bodies under the influence of		

<b>FEL 103.2</b>	Students will be able to solve for support reactions.		
<b>FEL 103.3</b>	Students will be able to apply the various procedures and techniques for the experiments .		
<b>FEL 103.4</b>	Students will be able to apply the mathematical concepts/equations/laws to obtain unknown forces.		
<b>FEL 103.5</b>	Students will be able to apply the mathematical concepts/equations/laws for unknown motion parameters.		
<b>FEL 103.6</b>	Students will be able to analyse kinematics and kinetics of particles.		
<b>Course Name:</b>	<b>Basic Electrical Engineering</b>		
<b>Course Code</b>	<b>FEL104</b>		
<b>Faculty Name:</b>	<b>Ms. Prathibha D. and Ms. Gejo G.</b>		
<b>Year</b>	<b>1</b>	<b>Sem</b>	<b>I</b>
<b>CO Number</b>	<b>Course Outcome</b>		
<b>FEL 104.1</b>	The students will be able to define or state the basic principle and definitions of an electrical network( DC+AC), basic operation of		
<b>FEL 104.2</b>	The students will be able to explain the fundamentals of DC circuits, single phase AC circuits, three phase AC circuits , construction		
<b>FEL 104.3</b>	The students will be able to apply the fundamental laws of electricity to solve any given electrical circuit		
<b>FEL 104.4</b>	The students will be able to analyze the various parameters for the given AC (single andthree phase) and DC circuits and the		
<b>FEL 104.5</b>	The students will be able to evaluate the various parameters for the given AC (single and three phase) and DC circuits and single		
<b>FEL 104.6</b>	The students will be able to design/ simulate AC and DC circuits and analyze various parameters related to AC and DC Networks.		