

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

**Department of Computer Engineering (Odd semester, 2022-23)**

**SE Comps**

<b>Course Name:</b>	Engineering Mathematics-III		
<b>Course Code</b>	CSC301		
<b>Faculty Name:</b>	Dr. Revathy		
<b>Year</b>	2	<b>Sem</b>	III
<b>CO Number</b>	<b>Course Outcome</b>		
CSC301.1	Students will be able to Define Laplace and Inverse Laplace Transforms, Fourier series, even and odd functions, Analytic functions, Harmonic functions, orthogonal trajectories and Karl Pearson's Correlation Coefficient		
CSC301.2	Students will be able to Obtain Laplace and Inverse Laplace Transforms of standard functions; Check if a given function is even or odd, Obtain Karl Pearson's Correlation Coefficient and Spearman's Rank Correlation Coefficient, Obtain probabilities and conditional probabilities		
CSC301.3	Students will be able to Use standard results to find the Laplace Transforms and evaluate integrals, Inverse Laplace Transforms of combinations of standard functions; Use Convolution theorem to obtain Inverse Laplace Transforms; Use a standard integral formulae to obtain Fourier series ; Use Cauchy – Riemann equations to verify analyticity; Check if a given function is harmonic; Use Bayes' theorem to obtain conditional probabilities; Obtain the regression lines using correlation coefficient and by the method of least squares; Obtain unknown constants, expectation and variance and moment generating function of a given random variable		
CSC301.4	Students will be able to Use combination of properties to find the Laplace Transforms; Use partial fractions, derivatives and convolution theorem to obtain Inverse Laplace Transforms; Obtain Fourier Series for even and odd functions and Half Range Fourier Series; Check if a given function can be the real/imaginary part of an analytic function and construct the corresponding analytic function. Obtain the harmonic conjugate and orthogonal trajectories of a given family of curves; Identify respective regression lines and the regression coefficients and correlation coefficient; Obtain moments using the moment generating function		
CSC301.5	Students will be able to Evaluate integrals by comparing with Laplace transforms ; Obtain an analytic function given a linear combination of its real and imaginary parts; Deduce using Fourier series; Identify y on x and x on y regression lines and also if given lines represent regression lines or not		
CSC301.6	Students will be able to Develop linear regression equations for a given data and forecast values		

<b>Course Name:</b>	Discrete Structures and Graph Theory		
<b>Course Code</b>	CSC302		
<b>Faculty Name:</b>	Kalpita Wagaskar		
<b>Year</b>	2	<b>Sem</b>	III
<b>CO Number</b>	<b>Course Outcome</b>		
CSC302.1	Students will be able to identify and state the basic laws of logic, set theory, Posets, Counting principles, algebraic structures and graph theory		
CSC302.2	Students will be able to explain Inference logic, Induction, relation and functions and will be able to compare the types of counting mechanisms and graphs.		
CSC302.3	Students will be able to use posets and lattices, solve recurrence relation, and construct different types of Graphs.		
CSC302.4	Students will be able to analyze different relation in logic and algebraic structures to produce inference equivalent to real world problems.		
CSC302.5	Students will be able to reframe the logic based on inference and evaluate the various functions and summarize the coding theory		
CSC302.6	Students will be able to design the predicate logic equations based on real world statements, apply the counting principles and construct graph based on problem statements.		

<b>Course Name:</b>	Data Structure		
<b>Course Code</b>	CSC303		
<b>Faculty Name:</b>	Imran Ali Mirza		
<b>Year</b>	2	<b>Sem</b>	III
<b>CO Number</b>	<b>Course Outcome</b>		
CSC303.1	Students will be able to understand and explain various data structures, related terminologies and its types.		
CSC303.2	Students will be able to comprehend a Data Structure as an Abstract data Type.		
CSC303.3	Students will be able to implement the traversal Mechanisms and CRUD operations on various data Structures.		
CSC303.4	Students will be able to choose and implement appropriate data Structures to represent real world data for computational Problem solving.		

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

**Department of Computer Engineering (Odd semester, 2022-23)**

CSC303.5	Students will be able to implement and analyze appropriate searching techniques for a given problem.
CSC303.6:	Students will be able to demonstrate the ability to analyze the design, and use data structures to solve engineering problems and evaluate their solutions.

<b>Course Name:</b>	Digital Logic & Computer Architecture		
<b>Course Code</b>	CSC304		
<b>Faculty Name:</b>	Sejal Chopra		
<b>Year</b>	2	<b>Sem</b>	III

CO Number	Course Outcome
CSC304.1	Explain the basic concepts of digital logic and computer system components.
CSC304.2	Compare and comment on various parallel processing mechanisms and different buses.
CSC304.3	Implement methods to design control unit or memory unit(s).
CSC304.4	Correlate the recent developments done in computer architectures improving system performance.
CSC304.5	Predict the output of ALU functions using the arithmetic operations/algorithms.
CSC304.6	Build a digital circuit for a particular case study given.

<b>Course Name:</b>	Computer Graphics		
<b>Course Code</b>	CSC305		
<b>Faculty Name:</b>	Dipti Jadhav		
<b>Year</b>	2	<b>Sem</b>	III

CO Number	Course Outcome
CSC305.1	Ability to define contemporary graphics hardware.
CSC305.2	Demonstrate the overview of graphics system and make use of various drawing algorithms of output primitives
CSC305.3	Experiment with the geometric transformations in 2D & 3D graphics related problems.
CSC305.4	Analyze and apply different algorithms for viewing clipping & fractal generation
CSC305.5	Compare and choose appropriate visible surface detection algorithm for animation
CSC305.6	Solve the problems on viewing transformations and explain the projection and hidden surface removal

<b>Course Name:</b>	Data Structure Lab		
<b>Course Code</b>	CSL301		
<b>Faculty Name:</b>	Imran Ali Mirza		
<b>Year</b>	2	<b>Sem</b>	III

CO Number	Course Outcome
CSL301.1	Exemplify and implement how abstract data types such as stack and queue can be implemented to manage the
CSL301.2	Understand and implement linked list, trees, binary trees, and binary search trees.
CSL301.3	Implement binary tree traversals and operations on binary search trees.
CSL301.4	Identify and develop code for real life DFS and BFS using graph theory.
CSL301.5	Develop and compare the comparison-based search algorithms.
CSL301.6	Identify data structuring strategies that are appropriate to a given contextual problem and able to design, develop, test and debug in C language considering appropriate algorithm.

<b>Course Name:</b>	Digital Logic & Computer Architecture Lab		
<b>Course Code</b>	CSL302		
<b>Faculty Name:</b>	Sana Shaikh		
<b>Year</b>	2	<b>Sem</b>	III

CO Number	Course Outcome
CSL302.1	Ability of the student to remember and verify the truth table of logic gates.
CSL302.2	Ability to predict the output of combinational circuits.
CSL302.3	Ability to determine the output of various sequential circuits.
CSL302.4	Ability to estimate the probable working of various adders circuitry.

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

**Department of Computer Engineering (Odd semester, 2022-23)**

CSL302.5	Ability to validate the output of the basic building blocks of a computer.
CSL302.6	Ability to simulate various algorithms used for arithmetic operations.

<b>Course Name:</b>	Computer Graphics Lab		
<b>Course Code</b>	CSL303		
<b>Faculty Name:</b>	Dipti Jadhav		
<b>Year</b>	2	<b>Sem</b>	III

<b>CO Number</b>	<b>Course Outcome</b>
CSL303.1	Ability to define contemporary graphics hardware.
CSL303.2	Demonstrate the overview of graphics system and make use of various drawing algorithms of output and filled area primitives
CSC303.3	Make use of homogeneous coordinates to implement 2D & 3D geometric transformations for graphics related problems.
CSC303.4	Analyze different algorithms for viewing clipping & fractal generation and implement using C language.
CSC303.5	Choose appropriate visible surface detection algorithm and implement for mini project.
CSC303.6	Develop a Graphical application/Animation based on learned concept

<b>Course Name:</b>	Skill base Lab course: Object Oriented Programming with Java		
<b>Course Code</b>	CSL304		
<b>Faculty Name:</b>	Kalpita Wagaskar		
<b>Year</b>	2	<b>Sem</b>	III

<b>CO Number</b>	<b>Course Outcome</b>
CSL304.1	Students will be able to identify all the fundamental programming constructs.
CSL304.2	Students will be able to explain the various Java constructs and will be able to compare classes, objects, packages, arrays and strings.
CSC302.3	Students will be able to use arrays, strings, inheritance in the programs , and construct different types of exception handling and multi-threading into the code.
CSC302.4	Students will be able to analyze the output of different Java constructs and use the same in real world problems.
CSC302.5	Students will be able to reframe the programs based on the output from the constructs used in the logic.
CSC302.6	Students will be able to design GUI using Applets and AWT to implement full Javav application.

<b>Course Name:</b>	Mini Project – 1 A		
<b>Course Code</b>	CSM301		
<b>Faculty Name:</b>	Sana Shaikh		
<b>Year</b>	2	<b>Sem</b>	III

<b>CO Number</b>	<b>Course Outcome</b>
CSM301.1	Identify problems based on societal /research needs.
CSM301.2	Identify Methodology for solving above problem and apply engineering knowledge and skills to solve it.
CSM301.3	Apply Knowledge and skill to solve societal problems in a group.
CSM301.4	Analyze the impact of solutions in societal and environmental context for sustainable development.
CSM301.5	Demonstrate capabilities of self-learning, leading to lifelong learning.
CSM301.6	Develop interpersonal skills to work as a member of a group or as a leader.

**TE Comps**

<b>Course Name:</b>	Theoretical Computer Science		
<b>Course Code</b>	CSC501		
<b>Faculty Name:</b>	Shainila Shaikh		
<b>Year</b>	3	<b>Sem</b>	V

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

**Department of Computer Engineering (Odd semester, 2022-23)**

CO Number	Course Outcome
CSC501.1	To identify concepts in automata theory & to differentiate between NFA
CSC501.2	To infer the equivalence of languages described by finite automata and regular expressions
CSC501.3	To associate regular and context free grammar for recognizing strings & token
CSC501.4	Design finite automata & pushdown automata, to solve computational problems
CSC501.5	To design Turing machines to solve computational problems.
CSC501.6	To describe the concepts of undecidability & decidability

<b>Course Name:</b>	Software Engineering		
<b>Course Code</b>	CSC502		
<b>Faculty Name:</b>	Dr. S. Phiroj		
<b>Year</b>	3	<b>Sem</b>	V

CO Number	Course Outcome
CSC502.1	Understand and demonstrate basic knowledge in software engineering.
CSC502.2	Identify requirements, analyse and prepare models.
CSC502.3	Plan, schedule and track the progress of the projects.
CSC502.4	Understands the concepts of software design principles.
CSC502.5	Identify risks; manage the change to assure quality in software projects.
CSC502.6	Apply testing principles on software project and understand the maintenance concepts.

<b>Course Name:</b>	Computer Network		
<b>Course Code</b>	CSC503		
<b>Faculty Name:</b>	Sejal Chopra		
<b>Year</b>	3	<b>Sem</b>	V

CO Number	Course Outcome
CSC503.1	Explain the concepts related to data communication and computer networks.
CSC503.2	Discuss protocols at network, transport and application layer.
CSC503.3	Build a network using IP addressing and subnetting / supernetting schemes.
CSC503.4	Analyze various algorithms & protocols at network layer and transport layer.
CSC503.5	Interpret, explore and determine different design issues at data link layer.
CSC503.6	Communicate technical information verbally through videos.

<b>Course Name:</b>	Data Warehousing & Mining		
<b>Course Code</b>	CSC504		
<b>Faculty Name:</b>	Dr. Amiya T.		
<b>Year</b>	3	<b>Sem</b>	V

CO Number	Course Outcome
CSC504.1	To understand various tools of Data Warehousing & Mining and their techniques to solve the real time problems
CSC504.2	To interpret the strengths and limitations of various data mining and data warehousing models
CSC504.3	To demonstrate different methodologies used in data mining and data warehousing.
CSC504.4	To compare and evaluate different data mining techniques like classification, prediction, clustering and
CSC504.5	To develop ability towards design of various algorithms based on data products and data mining tools.
CSC504.6	To develop further interest in research and design of new Data Mining techniques.

<b>Course Name:</b>	Internet Programming		
<b>Course Code</b>	CSDLO5012		
<b>Faculty Name:</b>	Sana Shaikh		
<b>Year</b>	3	<b>Sem</b>	V

CO Number	Course Outcome
-----------	----------------

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

**Department of Computer Engineering (Odd semester, 2022-23)**

CSDLO5012.1	Define the core concepts and features of Web Technologies.
CSDLO5012.2	Gather the end user requirements and design responsive web pages using HTML5, CSS3, JavaScript and
CSDLO5012.3	Use JDBC and validate database connectivity.
CSDLO5012.4	Demonstrate Rich Internet Application using Ajax.
CSDLO5012.5	Demonstrate and differentiate various Web Extensions.
CSDLO5012.6	Develop web applications using React Js.

<b>Course Name:</b>	Software Engineering Lab		
<b>Course Code</b>	CSL501		
<b>Faculty Name:</b>	Dr. S. Phiroj		
<b>Year</b>	3	<b>Sem</b>	V

<b>CO Number</b>	<b>Course Outcome</b>
CSL501.1	Understand the software engineering concepts and prepare the problem statement & proposed solution for the selected case study.
CSL501.2	Identify software requirement specification and formulate it for the selected case study.
CSL501.3	Apply software engineering process model to the selected case study.
CSL501.4	Analyze, design models and evaluate for the selected case study using UML modelling.
CSL501.5	Use various software engineering tools.
CSL501.6	Implement and present a case study based on software engineering concept.

<b>Course Name:</b>	Computer Network Lab		
<b>Course Code</b>	CSL502		
<b>Faculty Name:</b>	Sejal Chopra		
<b>Year</b>	3	<b>Sem</b>	V

<b>CO Number</b>	<b>Course Outcome</b>
CSL502.1	Identify the important networking commands in Linux and understand their function.
CSL502.2	Gather information regarding connectors and cables used for network and summarize their usage.
CSL502.3	Use Network tool NS2 and NS3 simulator to simulate and explore networking algorithms and protocols.
CSL502.4	Illustrate socket programming for TCP/UDP connections for demonstrating networking concepts
CSL502.5	Review various operations of TCP/IP layers using Wireshark.
CSL502.6	Design and Build a network topology using packet tracer.

<b>Course Name:</b>	Data Warehousing & Mining Lab		
<b>Course Code</b>	CSL503		
<b>Faculty Name:</b>	Dr. Amiya T.		
<b>Year</b>	3	<b>Sem</b>	V

<b>CO Number</b>	<b>Course Outcome</b>
CSL503.1	Design data warehouse and perform various OLAP operations
CSL503.2	Understanding tools to interpret the raw data and data preprocessing.
CSL503.3	Explore open source software (like WEKA) to perform data mining tasks.
CSL503.4	Demonstrate the working of Data Mining algorithms: Classification, Clustering, Association Rule mining
CSL503.5	Apply the data mining techniques with varied input values for different parameters.
CSL503.6	Implement Test mining algorithm towards webdata mining

<b>Course Name:</b>	Professional Comm. & Ethics-II		
<b>Course Code</b>	CSL504		
<b>Faculty Name:</b>	Dipak Jadhav		
<b>Year</b>	3	<b>Sem</b>	V

<b>CO Number</b>	<b>Course Outcome</b>
------------------	-----------------------

**DON BOSCO INSTITUTE OF TECHNOLOGY, KURLA, MUMBAI****Department of Computer Engineering (Odd semester, 2022-23)**

CSL504.1	Students will be able to relate to techniques of formal and technical writing and principles of corporate ethics which includes knowledge of Intellectual Property Rights and ethical codes of conduct in business and corporate activities.
CSL504.2	Students will be able to explain the objectives, format and style of the technical report, and technical proposal, and the importance of interpersonal skills and paraphrase a technical paper.
CSL504.3	Students will be able to make use of the techniques for mock interviews and interpersonal skills in presentations
CSL504.4	Students will be able to compare various forms of technical writing like technical reports, Technical proposals, and Meeting documentation.
CSL504.5	Students will be able to evaluate technical reports and technical proposals using the given rubrics.
CSL504.6	Students will be able to design resumes and Statement of Purpose as per the given format

<b>Course Name:</b>	Mini Project 2A		
<b>Course Code</b>	CSM501		
<b>Faculty Name:</b>	Sana Shaikh		
<b>Year</b>	3	<b>Sem</b>	V

<b>CO Number</b>	<b>Course Outcome</b>
CSM501.1	Identify societal/research/innovation/entrepreneurship problems through appropriate literature surveys.
CSM501.2	Identify Methodology for solving above problem and apply engineering knowledge and skills to solve it.
CSM501.3	Use standard norms of engineering practices and project management principles during project work
CSM501.4	Analyze and evaluate the impact of solution/product/research/innovation /entrepreneurship towards societal/environmental/sustainable development.
CSM501.5	Demonstrate capabilities of self-learning, leading to lifelong learning.
CSM501.6	Develop interpersonal skills to work as a member of a group or as a leader.