DON BOSCO INSTITUTE OF TECHONOLGY, KURLA, MUMBAI

Department of Computer Engineering, (Odd Semester, 2019-20)			
SE Comps			
Course Name:	Applied Mathematics III		
Course Code	CSC301		
Faculty Name:	Satyanarayana M Nagula		
Year	2	**Sem**	III

CO Number	**Course Outcome**
CSC301.1	Students will be able to i) Obtain Laplace Transforms for a given standard function of 't' ii) Obtain Inverse Laplace Transforms for a given simple function of 's' iii) Define harmonic functions and Orthogonal trajectories
CSC301.2	Students will be able to i) Obtain the Laplace Transforms, Inverse Laplace Transforms of combinations of standard functions using the properties of Laplace and Inverse Transforms. ii) Obtain Karl Pearson's coefficient of correlation and Spearman's Rank correlation
CSC301.3	Students will be able to i)Apply Heaviside's and Dirac Delta functions to obtain Laplace Transforms ii) Apply Laplace and Inverse Laplace transform concepts to evaluate integrals, solve initial and boundary value problems. iii) Fit a given data to a decided curve linear, quadratic, exponential by method of Least square. iv) Obtain Regression coefficient & Lines of Regression.
CSC301.4	Students will be able to i) Obtain the harmonic conjugate and orthogonal trajectories of a given family of curves ii) Develop orthonormal functions from a set of orthogonal functions iii) Find Cauchy – Riemann equations to verify if a function is analytic iv) Define Conformal mapping and obtain the image under given standard transformation
CSC301.5	Students will be able to i) Define and obtain bilinear transformation and its fixed points. ii) Obtain images of regions under conformal mappings – translation, rotaion, inversion and BLT iii) Obtain an analytic function, given a linear combination of its real and imaginary parts iv) Obtain Fourier series for even and odd functions. vi) Identify orthogonal and orthonormal functions and obtain Fourier series, half-range Fourier series and Fourier sine and cosine series of periodic functions.
CSC301.6	Students will be able to i) Apply the concept of Z- transformation and its inverse of the given sequence ii) Obtain Fourier series for functions in a general interval, Obtain complex form fourier series of functions.

Course Name:	DLDA		
Course Code	CSC302		
Faculty Name:	Deepali Kayande		
Year	2	Sem	III

CO Number	Course Outcome
CSC302.1	Ability to know the fundamentals required for digital electronics and knowledge of logic families and simulation techniques to build the digital circuits.
CSC302.2	Ability to understand the concept of number system and their conversions, various gates and their realization.
CSC302.3	Ability to apply the knowledge of number system to design regular expressions and mount them in reduced form using the reduction techniques with various gates.
CSC302.4	Ability to analyze the knowledge of gates and build the combinational and sequential circuits.
CSC302.5	Ability to evaluate the boolean expressions using various reduction techniques and get the minimum expression and the combinational and sequential circuits and convert them from one form to another.
CSC302.6	Ability to design combinational and sequential circuits using simulation softwares and breadboard.

Course Name:	Discrete Mathematics		
Course Code	CSC303		
Faculty Name:	Priya Kaul		
Year	2	Sem	III

CO Number	Course Outcome
CSC303.1	To develop analytical and critical thinking abilities by applying concepts of sets and logic in solving mathematical proofs and verification of theorems.
CSC303.2	To illustrate the usage of Relations and Functions in solving mathematical arguments and proof strategies.
CSC303.3	To demonstrate the principle of counting techniques like permutations and combinations by solving mathematical problems.
CSC303.4	To infer the importance of generating functions and graphs in construction of recursive algorithms and computer applications.
CSC303.5	To apply the concepts of algebraic structures like groups, rings, and fields to solve Encoding and Decoding problems.
CSC303.6	To correlate the concepts of discrete structures and their relevance within the context of computer science- in the areas like Cryptography, Data Mining, and Data Analysis.

Course Name:	ECCF		
Course Code	CSC304		
Faculty Name:	Sejal Chopra		
Year	2	Sem	III

CO Number	Course Outcome
CSC304.1	Understand and describe the basics of semiconductor devices in an electronic circuit.
CSC304.2	Understand and explain the fundamental concepts for communication and use of specific electronic devices in communication systems.
CSC304.3	Apply the knowledge of circuit working to obtain voltages ,current or waveforms and relate them at different points in electronic and communication circuits
CSC304.4	Estimate the voltages ,current or waveforms for given specifications in electronics circuits
CSC304.5	Infer the output for given specifications in communication circuits
CSC304.6	Justify the need of specific modulation process in an appropriate application by engaging them in self-learning /independent study through submission of a presentation .

Course Name:	Data Structures		
Course Code	CSC305		
Faculty Name:	Imran Ali Mirza		
Year	2	Sem	III

CO Number	Course Outcome
CSC305.1	To solve problems using concepts of Sets and Logic to obtain proofs and verify theorems.
CSC305.2	To illustrate the properties of Relations to demonstrate the concepts of Lattice and Functions
CSC305.3	To demonstrate the principle of counting techniques like permutations and combinations by solving mathematical problems.
CSC305.4	To infer the importance of generating functions and graphs in construction of recursive algorithms and computer applications.
CSC305.5	To apply the concepts of algebraic structures like groups, rings, and fields to solve Encoding and Decoding problems.
CSC305.6	To correlate the concepts of discrete structures and their relevance within the context of computer science- in the areas like Cryptography, Data Mining, and Data Analysis.

Course Name:	Digital System Lab		
Course Code	CSL301		
Faculty Name:	Deepali Kayande		
Year	2	Sem	III

CO Number	Course Outcome
CSL301.1	Understand the basics of various digital components.
CSL301.2	Students will be able to verify the truth tables of the digital logic ICs
CSL301.3	Implement the principles of design of combinational logic using basic components.
CSL301.4	Implement the principles of design of sequential logic circuits using basic components.
CSL301.5	Recognize the importance of digital systems in computer architecture.
CSL301.6	Design and simulate the basic digital circuit.

Course Name:	Basic Electronics Lab		
Course Code	CSL302		
Faculty Name:	Sejal Chopra		
Year	2	Sem	III

CO Number	Course Outcome
CSL302.1	Understand the basics of various semiconductor devices, electronic components and instruments.
CSL302.2	Describe and explain the fundamental concepts of various modulation methods.
CSL302.3	Understand the working of electronic circuits and designing them using various basic components
CSL302.4	Recognize the importance of electronic circuits in electronic communications.
CSL302.5	Formulate,design and simulate electronics circuits using SPICE
CSL302.6	Design and simulate communication circuits using SCILAB

Course Name:	Data Structures Lab		
Course Code	CSL303		
Faculty Name:	Imran Ali Mirza		
Year	2	Sem	III

CO Number	Course Outcome
CSL303.1	To implement various linear and nonlinear data structures.
CSL303.2	To handle operations like insertion, deletion, searching and traversing on various data structures.
CSL303.3	To select appropriate sorting technique for given problem.
CSL303.4	To select appropriate searching technique for given problem.
CSL303.5	To design and analyze the time and space efficiency of the data structure
CSL303.6	Able to choose appropriate data structures for specified problem domain.

Course Name:	OOPM Lab		
Course Code	CSL304		
Faculty Name:	Mayura Gavhane		
Year	2	Sem	III

CO Number	Course Outcome
CSL304.1	Apply fundamental programming constructs.
CSL304.2	Illustrate the concept of packages,classes and objects
CSL304.3	To use the concept of strings, arrays and vectors in programs.
CSL304.4	Implement the concept of Inheritance and Interfaces
CSL304.5	Demonstrate the concept of exception handling and multithreading
CSL304.6	Develop GUI based application and Apply Object Oriented programming concepts on it.

TE Comps

Course Name:	Microprocessor		
Course Code	CSC501		
Faculty Name:	Ditty Varghese		
Year	3	Sem	V

CO Number	Course Outcome
CSC501.1	Ability to explain the various architectures and internal working of x86 processors.
CSC501.2	Ability to use and apply appropriate instructions to program a microprocessor to perform various tasks.
CSC501.3	Ability to describe the concept and working of Interrupts.
CSC501.4	Ability to identify and describe the functions and features of different peripheral chips.
CSC501.5	Ability to appraise the structural modifications of advanced processors.
CSC501.6	Ability to interface and design system using memory chips and peripheral chips for 16 bit 8086 microprocessor.

Course Name:	DBMS		
Course Code	CSC502		
Faculty Name:	Priya Kaul		
Year	3	Sem	V

CO Number	Course Outcome
CSC502.1	To understand, define and explain the fundamentals of database management systems.
CSC502.2	To design Entity-Relationship and Extended ER diagram for real life problems.
CSC502.3	To convert conceptual model to Relational model and formulate Relational Algebra queries.
CSC502.4	To apply and formulate SQL queries to manage the database of a real time problem.
CSC502.5	To analyze and improve the design of database by applying normalization and Security features.
CSC502.6	To illustrate the concept of Transaction Management, Concurrency and Query processing.

Course Name:	CN		
Course Code	CSC503		
Faculty Name:	Shainila Mulla		
Year	3	Sem	V

CO Number	Course Outcome
CSC503.1	Demonstrate the concepts of data communication at physical layer and compare ISO-OSI model with TCP/IP model
CPC503.2	Demonstrate the knowledge of networking protocols at data link layer
CPC503.3	Design the network using IP addressing and subnetting/supernetting schemes
CPC503.4	Analyze various algorithms and protocols at network and transport layer
CPC503.5	Discuss protocols at application layer
CPC503.6	Analysing organizational requirements and selecting the most appropriate network architecture and technologies.

Course Name:	TCS		
Course Code	CSC504		
Faculty Name:	Shainila Mulla		
Year	3	Sem	V

CO Number	Course Outcome
CSC504.1	To identify concepts in automata theory & to differentiate between NFA & DFA
CSC504.2	To infer the equivalance of languages described by finite automata and regular expressions.
CSC504.3	Design finite automata & pushdown automata,to solve computational problems
CSC504.4	To associate regular and context free grammer for recognizing strings & token.
CSC504.5	To develop an understanding of computation through turing machines
CSC504.6	To describe the concepts of undecidability & decidability .

Course Name:	AOS		
Course Code	CSDLO5012		
Faculty Name:	Phiroj shaikh		
Year	3	Sem	V

CO Number	Course Outcome
CSDLO5012.1	Demonstrate understanding of design issues of advanced Operating Systems (OS) and compare different types of operating systems.
CSDLO5012.2	Analyse design aspects and data structures used for file subsystem, memory Subsystem and process subsystem of Unix OS.
CSDLO5012.3	Demonstrate understanding of different architectures used in Multiprocessor OS and analyse the design, data structures used in it.
CSDLO5012.4	Compare different processor scheduling algorithms used in Multiprocessor OS
CSDLO5012.5	Classify Real Time OS and analyse various real time scheduling algorithms
CSDLO5012.6	Explore architectures and design issues of Mobile OS, Virtual OS, Cloud OS

Course Name:	AA		
Course Code	CSDLO5013		
Faculty Name:	Ditty Varghese		
Year	3	Sem	V

CO Number	Course Outcome
CSDLO5013.1	Ability to describe analysis techniques for algorithms.
CSDLO5013.2	Ability to identify appropriate data structure and design techniques for different problems.
CSDLO5013.3	Ability to identify appropriate algorithm to be applied for the various application like geometric modeling, robotics, networking, etc
CSDLO5013.4	Ability to analyze various algorithms.
CSDLO5013.5	Ability to appreciate the role of probability and randomization in the analysis of algorithm.
CSDLO5013.6	Ability to differentiate polynomial and non deterministic polynomial algorithms.

Course Name:	Microprocessor Lab		
Course Code	CSL501		
Faculty Name:	Ditty Varghese		
Year	3	Sem	V

CO Number	Course Outcome
CSL501.1	Ability to explain and identify different instructions of 8086 microprocessor.
CSL501.2	Ability to use and apply appropriate instructions to program a microprocessor to perform various tasks.
CSL501.3	Ability to perform arithmetic operations using assembly language programming.
CSL501.4	Ability to write assembly code based on array operations.
CSL501.5	Ability to develop the program in mixed language.
CSL501.6	Ability to write and execute assembly code for code conversions.

Course Name:	Computer Network Lab		
Course Code	CSL502		
Faculty Name:	Shainila Mulla		
Year	3	Sem	V

CO Number	Course Outcome
CSL502.1	Design and setup networking environment in Linux.
CSL502.2	Illustrate the use of basic networking commands in Linux.
CSL502.3	Design and Build a network topology using packet tracer.
CSL502.4	Implemnt programs in Network tool NS2 simulator and Wireshark to simulate and explore networking algorithms and protocols.
CSL502.5	To implement programs using core programming APIs for understanding networking concepts
CSL502.6	To implement file transfer and remote login using FTP and Telnet server

Course Name:	Database & Info. System Lab		
Course Code	CSL503		
Faculty Name:	Priya Kaul		
Year	3	Sem	V

CO Number	Course Outcome
CSL503.1	To design and create conceptual or relational model for any the real life problem with open source software tool
CSL503.2	To convert Conceptual model to Relational model and apply SQL commands on database.
CSL503.3	To apply Data Integrity and Security to protect the database from unauthorized access and manipulation.
CSL503.4	To examine effect of concurrency control on database and implement and execute sub-query/complex queries
CSL503.5	To apply views and triggers for specific case study.
CSL503.6	To create database management system for a given case study and access data through front end.

Course Name:	Web Design Lab		
Course Code	CSL504		
Faculty Name:	Deepali Kayande		
Year	3	Sem	V

CO Number	Course Outcome
CSL504.1	Understand the core concepts and features of Web Technology
CSL504.2	Design static web pages using HTML5 and CSS3
CSL504.3	Apply the concept of client side validation and design dynamic web pages using JavaScript and JQuery.
CSL504.4	Evaluate client and server side technologies and create Interactive web pages using PHP , AJAX with database connectivity using MySQL.
CSL504.5	Understand the basics of XML, DTD and XSL and develop web pages using XML / XSLT.
CSL504.6	Analyze end user requirements and Create web application using appropriate web technologies and web development framework

Course Name:	BCE		
Course Code	CSL505		
Faculty Name:			
Year	3	Sem	V

CO Number	Course Outcome
CSL505.1	Students will be able to relate to techniques of formal and technical writing and to principles of corporate ethics which includes knowledge of Intellectual Property Rights and ethical codes of conduct in business and corporate activities
CSL505.2	Students will be able to explain the objectives, format and style of technical report, and technical proposal and the importance of interpersonal skills and paraphrase a technical paper
CSL505.3	Students will be able to describe strategies for effective meetings and group discussions and techniques for effective preparation for different types of interview which includes resume writing and statement of purpose
CSL505.4	Students will be able to apply conceptual awareness of interpersonal skills, strategies for effective meetings which includes documentation, and group discussions to complete a mock project
CSL505.5	Students will be able to make use of the given format while drafting a technical report and a technical proposal and the techniques of effective preparation for interviews while appearing for a mock interview
CSL505.6	Students will be able to evaluate technical reports and technical proposals using the given rubric

BE Comps

Course Name:	DSIP		
Course Code	CSC701		
Faculty Name:	Dipti Jadhav		
Year	4	Sem	VII

CO Number	Course Outcome
CSC701.1	Apply the concept of DT Signal and DT Systems.
CSC701.2	Classify and analyze discrete time signals and systems
CSC701.3	Apply Digital Signal Transform techniques DFT and FFT.
CSC701.4	Explain and implement image enhancement techniques
CSC701.5	Compare image segmentation techniques.
CSC701.6	Survey on latest research based on Digital Signal & Image Processing.

Course Name:	MCC		
Course Code	CSC702		
Faculty Name:	Amiya Kumar Tripathy		
Year	4	Sem	VII

CO Number	Course Outcome
CSC702.1	To identify basic concepts and principles in mobile communication and computing
CSC702.2	To express the components and functioning of mobile networking
CSC702.3	To apply the concepts of WLAN for local as well as remote applications.
CSC702.4	To classify variety of security techniques in mobile network.
CSC702.5	To apply the concepts of mobility management
CSC702.6	To describe Long Term Evolution (LTE) architecture and its interfaces.

Course Name:	AI & SC		
Course Code	CSC703		
Faculty Name:	Kalpita Wagaskar		
Year	4	Sem	VII

CO Number	Course Outcome
CSC703.1	Students will be able to state the difference between AI and SC
CSC703.2	Students will be able to explain IA,KBA,PSA, and illustrate ANN, Fuzzy Logic and Expert system architecture
CSC703.3	Students will be able to solve problems using informed, uninformed search methods, optimization techniques and ANN
CSC703.4	Students will be able to identify planning types and agents and illustrate t he fuzzy inference system
CSC703.5	Students will be able to critique and justify different neural network algorithms and compare the results and infer error percentage
CSC703.6	Students will be able to formulate problems and design FOL equation for the problems stated

Course Name:	ASS & DF		
Course Code	CSDLO7031		
Faculty Name:	Shafaque Fatma Syed		
Year	4	Sem	VII

CO Number	Course Outcome
CSDLO7031.1	Understand cyber attacks and apply access control policies and control mechanisms.
CSDLO7031.2	Identify malicious code and targeted malicious code.
CSDLO7031.3	Detect and counter threats to web applications.
CSDLO7031.4	Understand the vulnerabilities of Wi-Fi networks and explore different measures to secure wireless protocols, WLAN and VPN networks.
CSDLO7031.5	Understand the ethical and legal issues associated with cyber crimes and be able to mitigate impact of crimes with suitable policies.
CSDLO7031.6	Use different forensic tools to acquire and duplicate data from compromised systems and analyze the same.

Course Name:	BDA		
Course Code	CSDLO7032		
Faculty Name:	Sana Shaikh		
Year	4	Sem	VII

CO Number	Course Outcome
CSDLO7032.1	Understand the key issues in big data management and its associated applications for business decisions and strategy.
CSDLO7032.2	Apply scalable algorithms based on Hadoop and Map Reduce to perform big data analytics.
CSDLO7032.3	Use NoSQL tools to develop problem solving and critical thinking skills for managing large datasets.
CSDLO7032.4	Interpret business models and scientific computing paradigms, and apply software tools for big data analytics.
CSDLO7032.5	Apply various methods and techniques for Clustering, and identifying frequent Item sets from large datasets.
CSDLO7032.6	Discover information from social network graphs and Solve complex real world problems in various applications.

Course Name:	CSL		
Course Code	ILO7016		
Faculty Name:	Mayura Gavhane		
Year	4	Sem	VII

CO Number	Course Outcome
ILO7016.1	Explain the concept of cyber crime and its effect on outside world.
ILO7016.2	Explain steps involved in cybercrime
ILO7016.3	Explain tools and methods used in cybercrime.
ILO7016.4	Interpret and apply IT law in various legal issues
ILO7016.5	Distinguish different aspects of cyber law
ILO7016.6	Apply Information Security Standards compliance during software design and development

Course Name:	DSIP Lab		
Course Code	CSL701		
Faculty Name:	Dipti Jadhav		
Year	4	Sem	VII

CO Number	Course Outcome
CSL701.1	Perform Sampling and reconstruction of the signal.
CSL701.2	Implement and apply operations like Convolution, Correlation.
CSL701.3	Implement DFT and FFT on DT signals.
CSL701.4	Implement image enhancement techniques
CSL701.5	Classify and implement image segmentation techniques.
CSL701.6	Survey on latest research and module implementation based on Digital Signal & Image Processing.

Course Name:	MADT Lab		
Course Code	CSL702		
Faculty Name:	Amiya Kumar Triptahy		
Year	4	Sem	VII

CO Number	Course Outcome
CSL702.1	To demonstrate mobile applications using various tools
CSL702.2	To articulate the knowledge of GSM, CDMA & Bluetooth technologies and demonstrate it.
CSL702.3	To carry out simulation of frequency reuse , hidden terminal problem
CSL702.4	To develop security algorithms for mobile communication network
CSL702.5	To demonstrate simulation and compare the performance of Wireless LAN
CSL702.6	To implement mobile node discovery and route maintains

Course Name:	AI & SC lab		
Course Code	CSL703		
Faculty Name:	Kalpita Wagaskar		
Year	4	Sem	VII

CO Number	Course Outcome
CSL703.1	To realize the basic techniques to build intelligent systems
CSL703.2	To create knowledge base and apply appropriate search techniques used in problem solving.
CSL703.3	To formulate a given Problem using rules of AI
CSL703.4	To impement the FOL in PROLOG
CSL703.5	Apply the supervised/unsupervised learning algorithm.
CSL703.6	Design fuzzy controller system.

Course Name:	Computational Lab - I (ASS)		
Course Code	CSL704		
Faculty Name:	Shafaque Fatma Syed		
Year	4	Sem	VII

CO Number	Course Outcome
CSL704.1	Analyze static code and program vulnerabilities using open source tools.
CSL704.2	Explore and analyze network vulnerabilities using open source tools.
CSL704.3	Explore and analyze different security tools to detect web application and browser vulnerabilities.
CSL704.4	Explore and analyze different tools to secure wireless networks and routers, and mobile devices and perform penetration testing, and analyze its impact.
CSL704.5	Understand and implement AAA using RADIUS and TACACS.
CSL704.6	Explore various forensics tools in Kali Linux and use them to acquire, duplicate and analyze data and recover deleted data.

Course Name:	Computational Lab - I (BDA)		
Course Code	CSL704		
Faculty Name:	Sana Shaikh		
Year	4	Sem	VII

CO Number	Course Outcome
CSL704.1	Use the Hadoop file system, debug and run simple Java programs.
CSL704.2	Learn to write complex MapReduce programs.
CSL704.3	Learn how to ingest data using Sqoop and Flume.
CSL704.4	Derive insights using Data Analytics techniques with Hive/PIG/R/Hbase.
CSL704.5	Implement stream data analysis or predictive analysis using big data tools.
CSL704.6	Develop real-life projects using Hadoop and its Ecosystem.

Course Name:	Major Project - I		
Course Code	CSP705		
Faculty Name:	Shafaque Fatma Syed		
Year	4	**Sem**	VII

CO Number	**Course Outcome**
CSP705.1	Students will be able to identify issues related to social, health, safety, legal etc. and propose technological solutions with due consideration to environment and sustainability.
CSP705.2	Students will be able to plan the activities, prepare a schedule and budget, execute and monitor the progress by following project management practices.
CSP705.3	Students will be able to demonstrate team work and team spirit and overcome challanges.
CSP705.4	Students will be able to demonstrate ethical issues related to project.
CSP705.5	Students will be able to communicate effectively their project ideas, literature summary and design engineering solutions through reports and presentations.