DON BOSCO INSTITUTE OF TECHONOLGY, KURLA, MUMBAI

Department of Computer Engineering, (Odd semester, 2018-19)

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 iv) Obtain Karl Pearson's coefficient of correlation and Spearman's Rank correlation
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) Identify orthogonal and orthonormal functions and obtain Fourier series, half-range Fourier series and Fourier sine and cosine series of periodic functions.
CSC301.3	Students will be able to i) Find Cauchy – Riemann equations to verify if a function is analytic ii) Define Conformal mapping and obtain the image under given standard transformation iii) Define and obtain bilinear transformation and its fixed points. iv)Apply Heaviside's and Dirac Delta functions to obtain Laplace Transforms v) Apply Laplace and Inverse Laplace transform concepts to evaluate integrals, solve initial and boundary value problems.
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) Obtain Regression coefficient & Lines of Regression. iv) Obtain Fourier series for even and odd functions.
CSC301.5	Students will be able to i) Obtain images of regions under conformal mappings – translation, rotaion, inversion and BLT ii) Obtain an analytic function, given a linear combination of its real and imaginary parts
CSC301.6	Students will be able to i) Apply the concept of Z- transformation and its inverse of the given sequence ii) Find the fitting of the curves to the given data by applying Least square method. iii) Obtain Fourier series for functions in a general interval, Obtain complex form fourier series of functions.

Course Name:	DLDA	
Course Code	CSC302	
Faculty Name:	Ditty Varghese	
Year	2	Sem	III

CO Number	Course Outcome
CSC302.1	Ability to perform numerical calculations and conversions.
CSC302.2	Ability to analyze and minimize boolean expressions.
CSC302.3	Ability to apply & design combinational circuits and to verify the circuit with respect to the underlying logic.
CSC302.4	Ability to design synchronous and asynchronous sequential circuits.
CSC302.5	Ability to explain digital circuits using VHDL.
CSC302.6	Ability to comprehend the theory behind various logic families.

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 permuations 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.
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 circuit
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	Students will be able to implement various linear and nonlinear data structures.
CSC305.2	Students will be able to handle operations like insertion, deletion, searching and traversing on various data structures.
CSC305.3	Students will be able to select appropriate sorting technique for given problem
CSC305.4	Students will be able to select appropriate searching technique for given problem.
CSC305.5	Students will be able to apply learned concepts in domain like dbms and compiler construction
CSC305.6	Students will be able to choose appropriate data structure for specified problem domain

Course Name:	Digital System Lab	
Course Code	CSL301	
Faculty Name:	Ditty Varghese	
Year	2	Sem	III

CO Number	Course Outcome
CSL301.1	Ability to study basic logic gates by circuit realization.
CSL301.2	Ability to build & realize all gates using universal gates(NAND & NOR)
CSL301.3	Ability to minimize and verify boolean expressions using logic gates.
CSL301.4	Ability to design combinational circuits and to verify the circuit with respect to the underlying logic.
CSL301.5	Ability to design sequential circuits and verify the output using truth table.
CSL301.6	Ability to simulate digital circuits using VHDL.

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	Exemplify and implement how abstract data types such as stack, queue and linked list can be implemented to manage the memory using static and dynamic allocations
CSL303.2	Understand and implement trees, binary trees, and binary search trees
CSL303.3	Implement binary tree traversals and operations on binary search trees
CSL303.4	Identify and develop code for real life DFS and BFS using graph theory
CSL303.5	Develop and compare the comparison-based search algorithms and sorting algorithms.
CSL303.6	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.

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 interface and design system using memory chips and peripheral chips for 16 bit 8086 microprocessor.
CSC501.6	Ability to appraise the structural modifications of advanced processors.

Course Name:	DBMS		
Course Code	CSC502		
Faculty Name:	Sana Shaikh		
Year	3	**Sem**	V

CO Number	**Course Outcome**
CSC502.1	Ability to understand, define and explain the fundamentals of database management systems.
CSC502.2	Ability to design the conceptional model for any real life problem.
CSC502.3	Abilty to convert conceptional model to relational model and formulate relational algebra queries.
CSC502.4	Abilty to apply and formulate SQL queries to manage the database system.
CSC502.5	Ability to analyze and design a relational database design using the concepts of normalizations.
CSC502.6	Ability to understand the concept of Transaction, Concurrency and Recovery Management.

Course Name:	CN		
Course Code	CSC503		
Faculty Name:	Nilakshi Joshi		
Year	3	**Sem**	V

CO Number	**Course Outcome**
CSC503.1	The student will be able to demonstrate the concepts of data communication at physical layer and compare ISO -OSI model with TCP/IP model
CPC503.2	The student will be able to demonstrate the knowledge of networking protocols at data link layer.
CPC503.3	The student will be able to design the network using IP addressing and subnetting / supernetting schemes.
CPC503.4	The student will be able to analyze various algorithms & protocols at network layer and transport layer.
CPC503.5	The student will be able to discuss protocols at application layer.
CPC503.6	The student will be able to communicate technical information verbally, in writing, and in presentations.

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

Course Name:	Multimedia System		
Course Code	CSDLO5011		
Faculty Name:	Mayura Gavhane		
Year	3	**Sem**	V

CO Number	**Course Outcome**
CSDLO5011.1	Identify basics of multimedia and multimedia system architecture.
CSDLO5011.2	Describe different multimedia components.
CSDLO5011.3	Explain file formats for different multimedia components
CSDLO5011.4	Discuss various multimedia communication Techniques and distinguish with respect to application.
CSDLO5011.5	Analyze the different compression algorithms.
CSDLO5011.6	Apply different security techniques in multimedia environment.

Course Name:	AOS		
Course Code	CSDLO5012		
Faculty Name:	Amiya Kumar Tripathy		
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:	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 operatio ns 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:	Nilakshi Joshi		
Year	3	**Sem**	V

CO Number	**Course Outcome**
CSL502.1	The student will be able to design and setup networking environment in Linux.
CSL502.2	The student will be able to Illustrate the use of basic networking commands in Linux.
CSL502.3	The student will be able to design and build a network topology using packet tracer.
CSL502.4	The student will be able to use Network tool NS2 simulator, Wireshark etc to simulate and explore networking algorithms and protocols.
CSL502.5	The student will be able to implement programs using core programming APIs for understanding networking concepts.
CSL502.6	The student will be able to communicate technical information verbally, in writing, and in presentations.

Course Name:	Database & Info. System Lab		
Course Code	CSL503		
Faculty Name:	Sana Shaikh		
Year	3	**Sem**	V

CO Number	**Course Outcome**
CSL503.1	Ability to design and create ER and EER diagram for the real life problem with open source software tool.
CSL503.2	Ability to apply SQL commands on database.
CSL503.3	Ability to apply Data Integrity and Security to protect the database from unauthorized access and manipulation.
CSL503.4	Ability to examine effect of concurrency control on database and implement and execute sub-query/complex queries.
CSL503.5	Ability to apply views and triggers for specific task.

CSL503.6	Ability to create database system and access data through front end.

Course Name:	Web Design Lab	
Course Code	CSL504	
Faculty Name:	Dipti Jadhav	
Year	3	Sem	V

CO Number	Course Outcome
CSL504.1	To equip students with the necessary techniques required for developing Web Applications.
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	Demonstrate 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:	Vishal & Jeffi Thomas	
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:	DSP	
Course Code	CPC701	
Faculty Name:	Sejal Chopra	
Year	4	**Sem**	VII

CO Number	**Course Outcome**
CPC701.1	Learn, describe and assimilate information about the basic theory & manipulation of digital signals & systems.
CPC701.2	Explain DFT systems , FFT systems & applications involving Digital Signal Processors.
CPC701.3	Interpret and determine the different types of signal processing algorithms , stability of the system, effects of different parameters on system output
CPC701.4	Analyze the outcome of a system by application of various signal processing algorithms and variation in system parameters .
CPC701.5	Predict the general pattern of a stable system criticizing various parameters of the system.
CPC701.6	Design DSP systems by implementing them practically in a simulation environment.

Course Name:	CSS	
Course Code	CPC702	
Faculty Name:	Shafaque Syed	
Year	4	**Sem**	VII

CO Number	**Course Outcome**
CPC702.1	Explain the principles and practices of cryptographic techniques
CPC702.2	Classify/Identify a variety of generic security threats, vulnerabilities and analyze simple system security problems
CPC702.3	Describe and Apply secret and public key cryptographics standards
CPC702.4	Study and Apply different cyptographic hash functions for content security
CPC702.5	Identify and Apply different authentication standards used in communication protocols
CPC702.6	Contemplate, Compare and Use latest tools and technologies in the field of computer and system security

Course Name:	AI	
Course Code	CPC703	
Faculty Name:	Kalpita Wagaskar	
Year	4	**Sem**	VII

CO Number	**Course Outcome**
CPC703.1	Describe and identify the basic AI building blocks with different AI applications.
CPC703.2	Distinguish and explain the structure and environment of an Intelligent Agent.
CPC703.3	Apply and distinguish the different problem solving techniques, Informed Search Methods and Adversarial Search techniques
CPC703.4	Analyze AI approaches to knowledge and reasoning , and design, illustrate and relate first order logic for given problem statement to uncertainty using belief networks
CPC703.5	Understand, design, critique and compare planning and learning techniques used in AI paradigm and the Expert system model.
CPC703.6	Investigate and understand Natural Language processing and formulate research statement using NLP concepts with expert systems.

Course Name:	IP	
Course Code	CPE7023	
Faculty Name:	Dipti Jadhav	
Year	4	**Sem**	VII

CO Number	
CPE7023.1	To acquire the fundamental concepts of a digital image processing and video processing
CPE7023.2	Explain and implement image enhancement techniques
CPE7023.3	Classify and implement image segmentation techniques.
CPE7023.4	Demonstrate Image compression and decompression techniques
CPE7023.5	Apply Binary Image Processing Operations
CPE7023.6	Analysis of image processing issues and techniques and ability to apply these techniques to real world problems

Course Name:	SC	
Course Code	CPE7025	
Faculty Name:	Phiroj Shaikh	
Year	4	**Sem**	VII

CO Number	**Course Outcome**
CPE7025.1	State and understand various soft computing concepts
CPE7025.2	Understand and Analyze the fuzzy logic theory.
CPE7025.3	Appraise Neural network and differentiate between supervised and unsupervised learning algorithms
CPE7025.4	Apply genetic algorithms to solve combinatorial optimization problems
CPE7025.5	Understand efficiency of a hybrid system and test the importance of optimization techniques
CPE7025.6	Identify problem statements for self study and apply and produce a report on topics related to course

Course Name:	Project I	
Course Code	CPP701	
Faculty Name:	Shafaque Syed	
Year	4	**Sem**	VII

CO Number	**Course Outcome**
CPP701.1	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.
CPP701.2	Students will be able to plan the activities, prepare a schedule and budget, execute and monitor the progress by following project management practices.
CPP701.3	Students will be able to demonstrate team work and team spirit and overcome challanges.
CPP701.4	Students will be able to demonstrate ethical issues related to project.
CPP701.5	Students will be able to communicate effectively their project ideas, literature summary and design engineering solutions through reports and presentations.

Course Name:	NTAL	
Course Code	CPL701	
Faculty Name:	Priya Kaul	
Year	4	**Sem**	VII

CO Number	**Course Outcome**
CPL701.1	To demonstrate the use of network-based tools for network analysis
CPL701.2	To analyze and evaluate various techniques for network scanning
CPL701.3	To differentiate various between network vulnerabilities and suggest countermeasures
CPL701.4	To apply appropriate tools to simulate intrusion detection system
CPL701.5	To create a firewall and evaluate various security parameters
CPL701.6	To develop improved communication and collaborative skills in meeting security threats as a team member or team leader