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

**Department of COMP, (Odd semester, 2017-18)**

**SE Comps**

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|---|---|---|---|
| **Course Name:** | Applied Mathematics III | | |
| **Course Code** | CSC301 | | |
| **Faculty Name:** | Pranjalee | | |
| **Year** | 2 | **Sem** | III |

| CO Number | Course Outcome |
|---|---|
| CSC301.1 | Students will be able to<br>(i) Obtain Laplace Transforms for a given standard function of 't'<br>(ii) Obtain Inverse Laplace Transforms for a given simple function of 's'<br>(iii) Define Karl Pearson's correlation coefficient and Spearman's rank correlation coefficient<br>(iv) Define harmonic functions and Orthogonal trajectories |
| CSC301.2 | Students will be able to<br>(i) Obtain the Laplace Transforms, Inverse Laplace Transforms of combinations of standard functions using the properties of Laplace and Inverse Transforms.<br>(ii) Obtain Karl Pearson's correlation coefficient and Spearman's rank correlation coefficient<br>(iii) Obtain the equations of two lines of regression<br>(iv) Fit the curve by the method of least squares<br>(v) Understand the properties of orthogonal and orthonormal functions<br>(vi) Obtain Fourier series, half-range Fourier series and Fourier sine and cosine series of periodic functions.<br>(vii) Obtain complex form fourier series of functions.<br>(viii) Obtain the Z Transforms, Inverse Z Transforms of combinations of standard functions using the properties of Laplace and Inverse Transforms.<br>(ix) Find Cauchy – Riemann equations to verify if a function is analytic<br>(x) Obtain the harmonic conjugate and orthogonal trajectory of given family.<br>(xi) Define Conformal mapping and obtain the image under given standard transformation<br>(xii) Define and obtain bilinear transformation and its fixed points. |
| CSC301.3 | Students will be able to<br>(i) Apply Laplace and Inverse Laplace transform concepts to evaluate integrals<br>(ii) Solve initial and boundary value problems using Laplace transform. |

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

| CO Number | Course Outcome |
|---|---|
| CSC302.1 | To understand different number systems and their conversions. |
| CSC302.2 | To analyze and minimize Boolean expressions. |
| CSC302.3 | To design and analyze combinational circuits. |
| CSC302.4 | To design and analyze sequential circuits |
| CSC302.5 | To understand the basic concepts of VHDL. |
| CSC302.6 | To study basics of TTL and CMOS Logic families. |

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

| CO Number | Course Outcome |
|---|---|
| CSC303.1 | Develop analytical and critical thinking abilities by applying concepts of sets, logic and relations in solving mathematical proofs and verification of theorems. |
| CSC303.2 | Infer the importance of generating functions in construction of recursive algorithms like Quick sort, Binary Search, Fibonacci series. |
| CSC303.3 | Correlate the concepts of discrete structures and their relevance within the context of computer science, in the area of data structures. (tree, graph) |
| CSC303.4 | Demonstrate a working knowledge of fundamental algebraic structures (e.g., groups, rings, and fields). |

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

| CO Number | Course Outcome |
|---|---|
| CSC304.1 | Ability to understand,describe and explain the basics of semiconductor devices(op-amps and BJT's) in an electronic circuit and fundamental concepts for communication. |
| CSC304.2 | Ability to apply the knowledge of circuit working to conduct experiments and to obtain voltages ,current or waveforms and relate them at different points in electronic and communication circuits |
| CSC304.3 | Ability to estimate the voltages ,current or waveforms for given specifications in electronics and communication circuits |
| CSC304.4 | Ability to justify the need of specific modulation process in an appropriate application by engaging them in self-learning /independent study through submission of a presentation and two page report. |
| CSC304.5 | Ability to formulate,simulate and design electronics and communication circuits. |

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|---|---|---|---|
| **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 the learned concepts in various domains 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: | Deepali Kayande | | |
| Year | 2 | Sem | III |

| CO Number | Course Outcome |
|---|---|
| CSL301.1 | Understand the basics of various digital components. |
| CSL301.2 | Understand the principles of design of combinational logic and sequential logic circuits using basic components. |
| CSL301.3 | Recognize the importance of digital systems in computer architecture. |
| CSL301.4 | 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 | Understand the working of electronic circuits using components |
| CSL302.3 | Recognize the importance of electronic circuits in electronic communications. |
| CSL302.4 | Study the fundamental concepts of various modulation methods. |

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

| CO Number | Course Outcome |
|---|---|
| CSL303.1 | Students will be able to implement various linear and nonlinear data structures. |
| CSL303.2 | Students will be able to handle operations like insertion, deletion, searching and traversing on various data structures. |

| 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 like if-else, control structures, arrays,Strings |
| CSL304.2 | Apply Object Oriented programming concepts on real world scenarios. |
| CSL304.3 | Implement the concept of Inheritance and Interfaces |
| CSL304.4 | Demonstrate vectors,exception handling and multithreading |
| CSL305.5 | Develop GUI based application using Applet |

## TE Comps

| Course Name: | Microprocessor | | |
|---|---|---|---|
| Course Code | CPC501 | | |
| Faculty Name: | Ditty Varghese | | |
| Year | 3 | Sem | V |

| CO Number | Course Outcome |
|---|---|
| CPC501.1 | Ability to explain the various architectures and internal working of specific processors. |
| CPC501.2 | Ability to use and apply appropriate instructions to program a microprocessor to perform various tasks. |
| CPC501.3 | Ability to interface and design system using memory chips and peripheral chips for 16 bit 8086 microprocessor. |
| CPC501.4 | Ability to engage students in self-learning activity/independent activity based on RISC/CISC |
| CPC501.5 | Ability to engage students in learning the programming of microcontroller. |

| Course Name: | Operating System | | |
|---|---|---|---|
| Course Code | CPC502 | | |
| Faculty Name: | Amiya Kumar Tripathy | | |
| Year | 3 | Sem | V |

| CO Number | Course Outcome |
|---|---|
| CPC502.1 | Understand different OS Roles and Design |
| CPC502.2 | Compare and contrast the common algorithms used scheduling of tasks in operating systems |
| CPC502.3 | Applying the concept of how computing resources (e.g., CPU, Memory, etc.) are managed by the operating system |
| CPC502.4 | Analyse the trade-offs inherent in operating system design |
| CPC502.5 | Evaluate the key trade-offs between multiple approaches to operating system design, and identify and report appropriate design choices when solving real-world problems |

| Course Name: | SOOAD | | |
|---|---|---|---|
| Course Code | CPC503 | | |
| Faculty Name: | Shainila Mulla | | |
| Year | 3 | Sem | V |

| CO Number | Course Outcome |
|---|---|
| CPC503.1 | Ability to describe Object Oriented Analysis and Design concepts and apply them to solve problems |
| CPC503.2 | Ability to analyze and design problems using Object-Oriented Analysis and Design Techniques |
| CPC503.3 | Ability to analyze and design problems Using UML |
| CPC503.4 | Ability to identify, formulate and solve software development problems: software requirements, specification (problem space), software design, and implementation |
| CPC503.5 | Ability to develop an understanding of the application of OOAD practices from a software project management perspective and risk management |

| Course Name: | CN | | |
|---|---|---|---|
| Course Code | CPC504 | | |
| Faculty Name: | Nilakshi Joshi | | |
| Year | 3 | Sem | V |

| CO Number | Course Outcome |
|---|---|
| CPC504.1 | Describe the terminology and concepts of the OSI reference model and TCP/IPreference model along with hardware and software components and their interrelations. |
| CPC504.2 | Describe, Analyze and compare datalink,network and transport layer protocol, algorithms and techniques. |
| CPC504.3 | Design and implement datalink,network and transport layer protocol, algorithms and techniques in a laboratory scenario. |
| CPC504.4 | Select and apply appropriate network tools to build network topologies (Wired and Wireless). |
| CPC504.5 | Install and configure an open source tool NS2 |
| CPC504.6 | Communicate technical, ethical, social information related to computer networking. |

| Course Name: | WT | | |
|---|---|---|---|
| Course Code | CPL501 | | |
| Faculty Name: | Dipti Jadhav & Mayura Gavhane | | |
| Year | 3 | Sem | V |

| CO Number | Course Outcome |
|---|---|
| CPL501.1 | To equip students with the necessary techniques required for developing Web Applications. |
| CPL501.2 | Design web pages using HTML and Cascading Styles sheets. Build dynamic web pages using JavaScript (client side programming),create xml document and xml schema. |
| CPL501.3 | Build web applications using PHP. Construct and manipulate web database. |
| CPL501.4 | Demonstrate comprhensive and critical thinking in the understanding, evaluation and application of technology solutions to a variety of real-life situations. |
| CPL501.5 | Design innovative and user friendly web sites.Developing teamwork, presentation and report writing skills. |

| Course Name: | BCE | | |
|---|---|---|---|
| Course Code | CPL502 | | |
| Faculty Name: | Jeffi Thomas | | |
| Year | 3 | Sem | V |

| CO Number | Course Outcome |
|---|---|
| CPL502.1 | Identify issues related to society, health, safety and prepare a comprehensive report in a pre-specified format gathering information from primary and secondary sources using research tools and analyzing the collected information to recommend technological solution with due consideration to environment and society through a well defined process |
| CPL502.2 | Evaluate the social situation, identify business opportunities, and propose business offers in the prescribed format |
| CPL502.3 | Demonstrate conceptual awareness of interpersonal skills through the given activities |
| CPL502.4 | Plan and execute a meeting with the help of agenda |
| CPL502.5 | Identify and solve professional and ethical problems in the given sample business situations and demonstrate knowledge of table etiquette and a sense of presentability in terms of dressing and grooming. |
| CPL502.6 | Prepare their employability through resume, presentation skills, group discussions and mock interviews. |

## BE Comps

| Course Name: | DSP | | |
|---|---|---|---|
| Course Code | CPC701 | | |
| Faculty Name: | Sejal Chopra | | |
| Year | 4 | Sem | VII |

| CO Number | Course Outcome |
|---|---|
| CPC701.1 | The students will be able to learn, describe and assimilate information about the basic theory & manipulation of digital signals & systems, Discrete Fourier Transform, Fast Fourier Transform & applications involving Digital Signal Processors. |
| CPC701.2 | The students will be able to discuss & summarize the different types of signal processing algorithms, stability of the system, effects of different parameters on system output and basics of DSP processors. |
| CPC701.3 | The students will be to apply the use the signal processing algorithms in solving sums based on the DSP algorithms and concepts and decide the outcome of a system when system parameters are changed. |
| CPC701.4 | The students will be able to analyze the system given to them, understand the effect each parameter has on the output of a system and interpret the general pattern of a stable system. |
| CPC701.5 | The students will be able to design basic DSP systems by implementing them either theoretically or practically in a simulation environment . |

| Course Name: | CSS | | |
|---|---|---|---|
| Course Code | CPC702 | | |
| Faculty Name: | Kadambari Deherkar | | |
| Year | 4 | Sem | VII |

| CO Number | Course Outcome |
|---|---|
| CPC702.1 | Ability to explain the principles and practices of cryptographic techniques. |
| CPC702.2 | Ability to classify/identify a variety of generic security threats, vulnerabilities and analyze simple system security problems. |
| CPC702.3 | Apply security techniques and technologies in solving simple system security problems. |
| CPC702.4 | Ability to design system security solution for simplified real life security problems. |
| CPC702.5 | Ability to 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 | Students will be able to describe the basic AI building blocks and can state the history and foundations of Artificial Intelligence along with identification of various AI applications and current trends. Students will be able to explain the structure and environment of an Intelligent Agent and can distinguish different agents with examples |
| CPC703.2 | Students will be able to apply, distinguish and solve different search problems using problem solving techniques of BFS,DFS, Depth Limited Search,(DFID), Informed Search Methods of Hill Climbing and Genetic Algorithms, Adversarial Search techniques of minimax algorithm and Alpha-Beta Pruning. |
| CPC703.3 | Students will be able analyze AI approaches to knowledge and reasoning using wumpus world example, and design first order logic for given problem statements and will illustrate and relate the same to uncertain knowledge using belief networks |
| CPC703.4 | Students will be able to understand and compare different planning and learning techniques used in AI paradigm and design and test the Expert system model while comparing with the traditional systems of knowlegde base. |
| CPC703.5 | Students will be able design and develop the AI applications through an Open ended experiment |
| CPC703.6 | Students will be able to explain Natural Language processing as a research area in AI, with plan and design of NLP along with specifying the importance of expert systems and NLP. |

| Course Name: | AA | | |
|---|---|---|---|
| Course Code | CPE7021 | | |
| Faculty Name: | Ditty Varghese | | |
| Year | 4 | Sem | VII |

| CO Number | Course Outcome |
|---|---|
| CPE7021.1 | To describe various algorithmic strategies and specifications of algorithmic analysis like Asymptotic Notations and Masters Method. |
| CPE7021.2 | To apply greedy and dynamic strategy to design Graph algorithms and other algorithmic problems. To use masters method to find the time complexity of appropriate algorithms and application of advanced data structures. |
| CPE7021.3 | To analyze the various algorithms from different domains using different algorithmic strategies. |
| CPE7021.4 | To learn and develop Optimized algorithms by using linear programing |

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

| CO Number | |
|---|---|
| CPE7023.1 | Explain fundamental concepts of a digital image processing systems and image enhancement techniques |
| CPE7023.2 | Design and implement image segmentation and binary image processing techniques using openCV with C/C++. |
| CPE7023.3 | Develop fast image transform flowgraph and solve image compression and decompression techniques |
| CPE7023.4 | To analyze image processing issues and techniques and also will be able to apply these techniques to real world problems |

| Course Name: | SC | | |
|---|---|---|---|
| Course Code | CPE7025 | | |
| Faculty Name: | Deepali Kayande | | |
| Year | 4 | Sem | VII |

| CO Number | Course Outcome |
|---|---|
| CPE7025.1 | Ability to understand the difference between learning and programming and explore practical applications of Neural Networks (NN). |
| CPE7025.2 | Ability to analyze the fuzzy logic applications and design inference systems. |
| CPE7025.3 | Ability to design a Neuro-fuzzy network using the knowlege of Neural Network and fuzzy logic . |
| CPE7025.4 | Apply genetic algorithms to combinatorial optimization problems |
| CPE7025.5 | Ability to engage in self study /independent study and submit a report on topics related to course. |
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| Course Name: | Project I | | |
|---|---|---|---|
| Course Code | CPP701 | | |
| Faculty Name: | Sana Shaikh | | |
| 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. |
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| Course Name: | NTAL | | |
|---|---|---|---|
| Course Code | CPL701 | | |
| Faculty Name: | Sana Shaikh and 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 network vulnerabilities and their 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 |