

DON BOSCO INSTITUTE OF TECHNOLOGY, KURLA, MUMBAI

COURSE OUTCOMES

Department of IT , CAY- (Odd semester, 2019-20)

Course Name:	Applied Mathematics III		
Course Code	ITC301		
Faculty Name:	Shirly C		
Year	2	Sem	III

CO Number	Course Outcome
ITC301.1	Demonstrate the knowledge of Laplace transforms, Inverse Laplace transforms, Complex variable, Set theory, Relation and Function, permutation combination ,discrete and conditional probability.
ITC301.2	Understand Milne-Thomson method to find $f(z)$, cardinality, pigeonhole principle, identities on sets, composition and properties of relation, composition and types of function. Bayes theorem, algorithm for generation of discrete probability Plot the image of the curve from Z-plane to W-plane
ITC301.3	Apply Laplace transform to Application solve diff.equations. Apply appropriate theorem of in engg.subjects
ITC301.4	Demonstrate an ability to identify, formulate, analyze and synthesis complex engg.problems using Laplace transforms, mapping, Pigeon Hole Principle , Partial Order (of a relation), function, inverse of function, relation.
ITC301.5	Work as a team by participating in the content beyond syllabus activity and peer learning happens through tutorial
ITC301.6	Participate and succeed in competitive exams.

Course Name:	Logic Design		
Course Code	ITC302		
Faculty Name:	Janhavi Baikerikar		
Year	2	Sem	III

CO Number	Course Outcome
ITC 302.1	Understand the concepts of various components to design stable analog circuits
ITC 302.2	Represent numbers and perform arithmetic operations.
ITC 302.3	Minimize the Boolean expression using Boolean algebra and design it using logic gates
ITC 302.4	Analyze and design combinational circuit.
ITC 302.5	Design and develop sequential circuits
ITC 302.6	Translate real world problems into digital logic formulations using VHDL

Course Name:	Data Structures & Analysis		
Course Code	ITC303		
Faculty Name:	Sushree Satapathy		
Year	2	Sem	III

CO Number	Course Outcome
ITC303.1	Student will be able to Select appropriate data structures as applied to specified problem definition.
ITC303.2	Student will be able to implement operations like searching, insertion, and deletion, traversing mechanism etc. on various data structures.
ITC303.3	Student will be able to implement Linear and Non-Linear data structures.
ITC303.4	Student will be able to Implement appropriate sorting/searching technique for given problem.
ITC303.5	Student will be able to Design advance data structure using Non-Linear data structure.
ITC303.6	Student will be able to Determine and analyze the complexity of given Algorithms.

Course Name:	Database Management System		
Course Code	ITC304		
Faculty Name:	Vijaya Bharathi		
Year	2	Sem	III

CO Number	Course Outcome
ITC304.1	Explain the features of database management systems and Relational database
ITC304.2	Design conceptual models of a database using ER modeling for real life applications and also construct queries in Relational Algebra
ITC304.3	Create and populate a RDBMS for a real life application, with constraints and keys, using SQL.
ITC304.4	Retrieve any type of information from a data base by formulating complex queries in SQL.
ITC304.5	Analyze the existing design of a database schema and apply concepts of normalization to design an optimal database.
ITC304.6	Build indexing mechanisms for efficient retrieval of information from a database.

Course Name:	Principle of Communications		
Course Code	ITC305		
Faculty Name:	Gejo George		
Year	2	Sem	III

CO Number	Course Outcome
ITC305.1	The students will be able to describe and assimilate information regarding the different types of analog and digital modulation and demodulation communication techniques.
ITC305.2	The students will be able to discuss and summarize different types of communication media and the modulation and demodulation techniques used.

ITC305.3	The students will be able to apply their knowledge in obtaining the different performance parameters of a system.
ITC305.4	The students will be able to analyze the fundamental communication systems and relate the effect each block has on the performance of the system.
ITC305.5	The students will be able to evaluate & compare the different types of analog & digital communication systems and select suitable systems to build their applications.
ITC305.6	The students will be able to use the knowledge of 'Principle of Communications' to simulate a system using any open source simulation tool.

Course Name:	Digital Design Lab		
Course Code	ITL301		
Faculty Name:	Janhavi Baikerikar		
Year	2	Sem	III

CO Number	Course Outcome
ITL301.1	Minimize the Boolean algebra and design it using logic gates
ITL301.2	Analyse and design combinational circuit.
ITL301.3	Realise given function using combinational circuit.
ITL301.4	Design and develop sequential circuits
ITL301.5	Implement digital systems using programmable logic devices
ITL301.6	Translate real world problems into digital logic formulations using VHDL.

Course Name:	Data Structure Lab		
Course Code	ITL302		
Faculty Name:	Sushree Satapathy		
Year	2	Sem	III

CO Number	Course Outcome
ITL302.1	Select appropriate data structures as applied to specified problem definition.
ITL302.2	Implement operations like searching, insertion, and deletion, traversing mechanism etc. On various data structures.
ITL302.3	Students will be able to implement Linear and Non-Linear data structures.
ITL302.4	Implement appropriate sorting/searching technique for given problem.
ITL302.5	Design advance data structure using Non-Linear data structure.
ITL302.6	Determine and analyze the complexity of given Algorithms.

Course Name:	SQL Lab		
Course Code	ITL303		
Faculty Name:	Aruna Khubalkar		
Year	2	Sem	III

CO Number	Course Outcome
ITL303.1	Construct problem definition statements for real life applications and implement a database application for the same.
ITL303.2	Design conceptual models of a database using ER modeling for real life applications.
ITL303.3	Create and populate a RDBMS, using SQL.
ITL303.4	Write queries in SQL to retrieve any type of information from a data base.
ITL303.5	Analyze and apply concepts of normalization to design an optimal database.
ITL303.6	Implement indexes for a database using techniques like B or B+ trees.

Course Name:	Java programming Lab		
Course Code	ITL304		
Faculty Name:	Shiv Negi		
Year	2	Sem	III

CO Number	Course Outcome
ITL304.1	Implements object oriented programming concepts using basics syntaxes of control \structures,string and functions for developing skills of logics building activity.
ITL304.2	Identify classes, objects members of a class and the relationship among them needed for finding the solution to specific problem.
ITL304.3	Demonstrate how to achieve re-usability using inheritance interface and packages and describe faster applications development can be achieved.
ITL304.4	Demonstrate understanding & use of different exception handling mechanism and concepts of multi-threading for robust faster & efficient applications development.
ITL304.5	Identify and describe common abstract user interface components to design GUI in Java using Applet & AWT along with response to events.
ITL304.6	Identify design & developed complex graphics user interface using principal java swing classes based on MVC architecture.

Course Name:	Microcontroller & Embedded Programming		
Course Code	ITC501		
Faculty Name:	Janhavi Baikerikar		
Year	3	Sem	V

CO Number	Course Outcome
ITC501.1	Explain the embedded system concepts and architecture of embedded systems
ITC501.2	Describe the architecture of 8051 microcontroller and write embedded program for 8051 Microcontroller.

ITC501.3	Design the interfacing for 8051 microcontroller.
ITC501.4	Understand the concepts of ARM architecture
ITC501.5	Demonstrate the open source RTOS and solve the design issues for the same.
ITC501.6	Select elements for an embedded systems tool.

Course Name:	Internet Programming		
Course Code	ITC502		
Faculty Name:	Vaishali K		
Year	3	Sem	VI

CO Number	Course Outcome
ITC502.1	Design an interactive web pages using HTML,CSS and Javascript
ITC502.2	Design a responsive website using HTML5 and CSS3
ITC502.3	Develop Rich Internet Application using AJAX
ITC502.4	Develop dynamic website using server side PHP programming and database connectivity
ITC502.5	Build XML document and implement web service
ITC502.6	Demonstrate web application using Python web framework Django

Course Name:	Advanced Data Management Technology		
Course Code	ITC503		
Faculty Name:	Vijaya Bharathi		
Year	3	Sem	VI

CO Number	Course Outcome
ITC503.1	Explain and understand the concept of a transaction and how ACID properties are maintained when concurrent transaction occur in a database
ITC503.2	Measure query costs and design alternate efficient paths for query execution.
ITC503.3	Apply sophisticated access protocols to control access to the database.
ITC503.4	Implement alternate models like Distributed databases and Design applications using advanced models like mobile, spatial databases.
ITC503.5	Develop dimensional models for constructing DW
ITC503.6	Analyze data using OLAP operations so as to take strategic decisions

Course Name:	Cryptography & Network Security		
Course Code	ITC504		
Faculty Name:	Uday Nayak		
Year	3	Sem	VI

CO Number	Course Outcome
ITC504.1	Identify information security goals, classical encryption techniques and acquire fundamental knowledge on the concepts of finite fields and number theory.
ITC504.2	Understand, compare and apply different encryption and decryption techniques to solve problems related to confidentiality and authentication.
ITC504.3	Apply the knowledge of cryptographic checksums and evaluate the performance of different message digest algorithms for verifying the integrity of varying message sizes.
ITC504.4	Apply different digital signature algorithms to achieve authentication create secure applications.
ITC504.5	Apply network security basics, analyze different attacks on networks and evaluate the performance of firewalls and security protocols like SSL, IPsec, and PGP.
ITC504.6	Apply the knowledge of cryptographic utilities and authentication mechanisms to design secure applications.

Course Name:	Advanced Data Structures & Analysis of Algorithms		
Course Code	ITDLO-1-5011 (Department Level Optional Course-I)		
Faculty Name:	Sushree Satapathy		
Year	3	Sem	VI

CO Number	Course Outcome
ITLO-1-5011.1	Students will be able to choose appropriate advanced data structure for given problem.
ITLO-1-5011.2	Students will be able to calculate complexity.
ITLO-1-5011.3	Students will be able to select appropriate design techniques to solve real world problems.
ITLO-1-5011.4	Students will able to apply the dynamic programming technique to solve the problems.
ITLO-1-5011.5	Students will be able to apply the greedy programming technique to solve the problems.
ITLO-1-5011.6	Students will be able to select a proper pattern matching algorithm for given problem.

Course Name:	E-Commerce & E-Business
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Course Code	ITDLO-1-5013 (Department Level Optional Course-I)		
Faculty Name:	Tayyabali		
Year	3	Sem	VI

CO Number	Course Outcome
ITDL0-1-5013.1	Students will be able to know basics of E-commerce
ITDL0-1-5013.2	Students will be able to choose the technologies required to design and develop the E-commerce platforms
ITDL0-1-5013.3	Students will be able to understand the various modern available payment systems and their advantages and disadvantages
ITDL0-1-5013.4	Students will be able to design the strategies to market and sell their products online
ITDL0-1-5013.5	Students will be able to understand the E-Business and its types
ITDL0-1-5013.6	Students will be able to compare and design various business strategies.

Course Name:	Internet Programming Lab		
Course Code	ITL501		
Faculty Name:	Vaishali K		
Year	3	Sem	VI

CO Number	Course Outcome
ITL501.1	Design an interactive web pages using HTML,CSS and Javascript
ITL501.2	Design a responsive website using HTML5 and CSS3
ITL501.3	Develop Rich Internet Application using AJAX
ITL501.4	Develop dynamic website using server side PHP programming and database connectivity
ITL501.5	Build XML document and implement web service
ITL501.6	Demonstrate web application using Python web framework Django

Course Name:	Security Lab		
Course Code	ITL502		
Faculty Name:	Uday Nayak		
Year	3	Sem	V

CO Number	Course Outcome
ITL502.1	Apply the knowledge of symmetric cryptography to implement simple ciphers.
ITL502.2	Analyze and implement public key algorithms like RSA and ElGamal.
ITL502.3	Analyze and evaluate performance of hashing algorithms.
ITL502.4	Explore the different reconnaissance tools to gather information about networks.
ITL502.5	Use tools like sniffers, port scanners and other related tools for analyzing packets in a network
ITL502.6	Apply and set up firewalls and intrusion detection systems using open source technologies and to explore email security.

Course Name:	OLAP Lab		
Course Code	ITL503		
Faculty Name:	Vijaya Bharathi		
Year	3	Sem	VI

CO Number	Course Outcome
ITL503.1	Implement simple query optimizers and design alternate efficient paths for query execution.
ITL503.2	Simulate the working of concurrency protocols, recovery mechanisms in a database
ITL503.3	Design applications using advanced models like mobile, spatial databases.
ITL503.4	Implement a distributed database and understand its query processing and transaction processing mechanisms
ITL503.5	Build a data warehouse
ITL503.6	Analyze data using OLAP operations so as to take strategic decisions

Course Name:	IOT(Mini Project) Lab		
Course Code	ITL504		
Faculty Name:	Tayyabli		
Year	3	Sem	v

CO Number	Course Outcome
ITL 504.1	Students will be able to identify the requirements for the real world problems.
ITL 504.2	Students will be able to conduct a survey of several available literatures in the preferred field of study
ITL 504.3	Students will be able to learn and enhance software/ hardware skills.
ITL 504.4	Students will be able to demonstrate and build the project successfully by hardware requirements, coding, emulating and testing
ITL 504.5	Students will be able to report and present the findings of the study conducted in the preferred domain
ITL 504.6	Students will be able to demonstrate an ability to work in teams and manage the conduct of the research study.

Course Name:	Business Communication and Ethics		
Course Code	ITL505		
Faculty Name:	Ms. Devyani Balasra		
Year	3	Sem	VI

CO Number	Course Outcome
ITL505.1	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

ITL505.2	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
ITL505.3	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
ITL505.4	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
ITL505.5	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
ITL505.6	Students will be able to evaluate technical reports and technical proposals using the given rubric

Course Name:	Enterprise Network Design		
Course Code	ITC701		
Faculty Name:	Prasad Padalkar		
Year	4	Sem	VII

CO Number	Course Outcome
ITC701.1	Students would be able to gather customer requirements and APPLY a Methodology to Network Design
ITC701.2	Students will be able to SELECT appropriate Structure and Modularize the Network
ITC701.3	Students will be able to DESIGN Basic Campus and Data Center Network.
ITC701.4	Students will be able to DESIGN Remote Connectivity
ITC701.5	Students will be able to SELECT suitable Routing Protocols and IP Addressing scheme.
ITC701.6	Students will be able to COMPARE Openflow controllers and switches with other enterprise networks.

Course Name:	Infrastructure Security		
Course Code	ITC702		
Faculty Name:	Aruna Khubalkar		
Year	4	Sem	VII

CO Number	Course Outcome
ITC702.1	Understand the concept of vulnerabilities, attacks and protection mechanisms
ITC702.2	Analyze and evaluate software vulnerabilities and attacks on databases and operating systems Evaluating
ITC702.3	Explain the need for security protocols in the context of wireless communication
ITC702.4	Understand and explain various security solutions for Web and Cloud infrastructure
ITC702.5	Understand, and evaluate different attacks on Open Web Applications and Web services
ITC702.6	Design appropriate security policies to protect infrastructure components

Course Name:	Artificial Intelligence		
Course Code	ITC703		
Faculty Name:	Sunantha		
Year	4	Sem	VII

CO Number	Course Outcome
ITC703.1	Demonstrate knowledge of the building blocks of AI as presented in terms of intelligent agents.
ITC703.2	Analyze and formalize the problem as a state space, graph, design heuristics and select amongst different search or game based techniques to solve them.
ITC703.3	Develop intelligent algorithms for constraint satisfaction problems and also design intelligent systems for Game Playing
ITC703.4	Attain the capability to represent various real life problem domains using logic based techniques and use this to perform inference or planning.
ITC703.5	Formulate and solve problems with uncertain information using Bayesian approaches.
ITC703.6	To introduce advanced topics of AI such as planning, Bayes networks, natural language processing and Cognitive Computing.

Course Name:	Soft Computing		
Course Code	ITDLO7035		
Faculty Name:	Uday Nayak		
Year	4	Sem	VII

CO Number	Course Outcome
ITDLO7035-1	Ability to elaborate the importance of optimizations and its use in computer engineering fields and other domains
ITDLO7035-2	Students would understand inference systems and understand the efficiency of a hybrid system and Fuzzy Logic
ITDLO7035-3	Ability to analyze the difference between various learning algorithms of Neural Networks
ITDLO7035-4	Ability to program and to explore practical applications of Neural Networks
ITDLO7035-5	Apply genetic algorithms to combinatorial optimization problems.
ITDLO7035-6	Ability to hybridize Neural Networks and fuzzy logic to form a Neuro-fuzzy network.

Course Name:	Mobile Application Development		
Course Code	ITDLO7032		
Faculty Name:	Nilesh		
Year	4	Sem	VII

CO Number	Course Outcome
ITDLO7032.1	Describe Android platform, Architecture and features.
ITDLO7032.2	Design User Interface and develop activity for Android App.
ITDLO7032.3	Use Intent , Broadcast receivers and Internet services in Android App.
ITDLO7032.4	Design and implement Database Application and Content providers.

ITDLO7032.5	Use multimedia, camera and Location based services in Android App.
ITDLO7032.6	Discuss various security issues in Android platform.

Course Name:	Cyber Security and Laws		
Course Code	ILO7016		
Faculty Name:	Prasad Padalkar / Mayura G		
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:	Management Information System		
Course Code	ILO7013		
Faculty Name:	Anagha Shastri		
Year	4	Sem	VII

CO Number	Course Outcome
ILO7013.1	Explain how information systems transform Businesses.
ILO7013.2	Identify the impact of information systems have on an organization.
ILO7013.3	Describe IT infrastructure and its components and its current trends.
ILO7013.4	Understand the principal tools and technologies for accessing information from databases to improve business performance and decision making.
ILO7013.5	Explain how informed consent, legislation, industry self regulation and technology tools help protect data privacy.
ILO7013.6	Identify the types of systems used for enterprise-wide knowledge management and how they provide value for businesses module.

Course Name:	Network Design Lab		
Course Code	ITL701		
Faculty name	Prasad		
Year	4	Sem	VII

CO Number	Course Outcome
ITL701.1	Understand the requirements of an enterprise and outline its major design areas
ITL701.2	Identify & apply high level modules for enterprise architecture and analyze them.

ITL701.3	Identify the networking devices, prepare a bill of materials and configure the devices as per the Core, Access and Distribution layers
ITL701.4	Design the Server Farm for an enterprise network and discuss up gradations if needed.
ITL701.5	Identify and select the technology for Remote site Connectivity, suitable IP addressing plan and routing protocol for an enterprise network.
ITL701.6	Test and monitor the enterprise network using a tool

Course Name:	Advance Security Lab		
Course Code	ITL702		
Faculty name	Aruna Khubalkar		
Year	4	Sem	VII

CO Number	Course Outcome
ITL702.1	Implement and analyze program and database vulnerabilities - Buffer overflow and SQL Injection.
ITL702.2	Analyze and evaluate different security tools to secure mobile devices, web browser, wireless network and router
ITL702.3	Explore reconnaissance, attack and forensics tools in Kali Linux
ITL702.4	Test security of system using personal firewall installation
ITL702.5	Understand AAA using RADUIS / TACACS
ITL702.6	Design Authentication system

Course Name:	Intelligent System		
Course Code	ITL703		
Faculty name	Sunantha		
Year	4	Sem	VII

CO Number	Course Outcome
ITL703.1	Design the building blocks of an Intelligent Agent using PEAS representation .
ITL703.2	Analyze and formalize the problem as a state space, graph, design heuristics and select amongst different search or game based techniques to solve them.
ITL703.3	Develop intelligent algorithms for constraint satisfaction problems and also design intelligent systems for Game Playing
ITL703.4	Attain the capability to represent various real life problem domains using logic based techniques and use this to perform inference or planning.
ITL703.5	Formulate and solve problems with uncertain information using Bayesian approaches.
ITL703.6	Apply concept Natural Language processing to problems leading to understanding of cognitive computing.

Course Name:	Android Apps Development Lab		
Course Code	ITL704		
Faculty name	Nilesh		
Year	4	Sem	VII

CO Number	Course Outcome
ITL704.1	Experiment on Integrated Development Environment for Android Application Development.
ITL704.2	Design and Implement User Interfaces and Layouts of Android App.
ITL704.3	Use Intents for activity and broadcasting data in Android App.
ITL704.4	Design and Implement Database Application and Content Providers.
ITL704.5	Experiment with Camera and Location Based service.
ITL704.6	Develop Android App with Security features.

Course Name:	Project -1		
Course Code	ITM705		
Faculty name	Sunantha		
Year	4	Sem	VII

CO Number	Course Outcome
ITM705.1	Discover potential research areas in the field of IT
ITM705.2	Conduct a survey of several available literature in the preferred field of study
ITM705.3	Compare and contrast the several existing solutions for research challenges
ITM705.4	Demonstrate ability to work in team and manage the conduct of the research study
ITM705.5	Formulate and propose a plan for creating a solution for the research plan identified
ITM705.6	To report and present the findings of the study conducted in the preferred domain .