



# Nimra College of Engineering & Technology

Estd. By Nimra Educational Society (A Muslim Minority Society)  
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## PG- (MASTER OF COMPUTER APPLICATIONS)

### COURSE OUTCOMES FOR FIRST YEAR FIRST SEMESTER

COURSE TITLE WITH CODE	CO's	STATEMENT
Business Communication (MC2011)	CO-1	Purpose and process of communication.
	CO-2	Managing Organizational Communication.
	CO-3	Non-verbal communication and Body Language.
	CO-4	Written communication.
	CO-5	Presentation skills.
Mathematical and Statistical Foundations (MC2012)	CO-1	Apply the basic rules and theorems of probability theory such as Baye's Theorem, determine probabilities that help to solve engineering problems and to determine the expectation and variance of a random variable from its distribution.
	CO-2	Able to perform and analyze of sampling, means, proportions, variances and estimates the maximum likelihood based on population parameters.
	CO-3	Learn how to formulate and test hypotheses about sample means, variances and proportions and to draw conclusions based on the results of statistical tests
	CO-4	Design various ciphers using number theory.
	CO-5	Apply graph theory for real time problems like network routing problem
Computer Organization & Operating Systems (MC2013)	CO-1	Understand the basic organization of computer and different instruction formats and addressing modes.
	CO-2	Analyze the concept of pipelining, segment registers and pin diagram of CPU.
	CO-3	Understand and analyze various issues related to memory hierarchy.
	CO-4	Evaluate various modes of data transfer between CPU and I/O devices.
	CO-5	Examine various inter connection structures of multi processors.
Data Structures (MC2014)	CO-1	Implement basic programs by using C concepts.
	CO-2	Implement basic programs by using Advanced C concepts.
	CO-3	Select the data structures that efficiently model the information in a problem
	CO-4	Assess efficiency trade-offs among different data structure implementations or combinations.
	CO-5	Implement and know the application of algorithms for sorting and pattern matching.
Object Oriented Programming with JAVA (MC2015)	CO-1	Describe the uses OOP concepts.
	CO-2	Apply OOP concepts to solve real world problems.
	CO-3	Distinguish the concept of packages and interfaces.
	CO-4	Demonstrate the exception handling, multithread applications with synchronization.
	CO-5	Design the GUI based applications using AWT and Swings.
Operating Systems and Linux Lab (MC2016)	CO-1	Implement various CPU scheduling algorithms and compare results.
	CO-2	Implement various disk scheduling algorithms and compare results.
	CO-3	Implement page replace algorithms.

Linux Lab (MC2016)	CO-4	Implement various memory management techniques.
	CO-5	Execute basic Linux commands.
Data Structures Lab (MC2017)	CO-1	Implement various basic data structures and its operations.
	CO-2	Apply sorting and searching algorithms to given numbers
	CO-3	Implement various tree operations.
	CO-4	Implement various graphs algorithms.
	CO-5	Develop applications using various data structures.
JAVA Programming Lab (MC2018)	CO-1	Apply OOP concepts to solve real world problems.
	CO-2	Implement different forms of inheritance.
	CO-3	Create packages and to reuse them.
	CO-4	Implement multi threaded programs using synchronization concepts and Create user defined exceptions.
	CO-5	Design GUI applications using AWT and SWINGS.
Socially Relevant Project using Design Thinking (MC2019)	CO-1	Electronics, Robotics, IOT and Sensors.
	CO-2	Computer Science and IT Applications.
	CO-3	Mechanical and Electrical tools.
	CO-4	Eco-friendly solutions for waste management, infrastructure, safety, alternative energy sources, Agriculture, Environmental science and other fields of engineering.
<b>COURSE OUTCOMES FOR FIRST YEAR SECOND SEMESTER</b>		
<b>COURSE TITLE WITH CODE</b>	<b>CO's</b>	<b>STATEMENT</b>
Database Management Systems MC2021	CO-1	Illustrate the concept of databases, database management systems, database languages, database structures and their work.
	CO-2	Apply ER modeling and Relational modeling for designing simple databases.
	CO-3	Summarize the concepts related to relational model and SQL and Write database queries using relational algebra and structured query language.
	CO-4	Design and develop databases from the real world by applying the concepts of Normalization.
	CO-5	Outline the issues associated with Transaction Management and Recovery, Tree Structured and Hash-Based Indexing
Computer Networks MC2022	CO-1	Explain the network architecture, TCP/IP and OSI reference models.
	CO-2	Identify and understand various techniques and modes of transmission.
	CO-3	Demonstrate the data link protocols, multi-channel access protocols and IEEE 802 standards for LAN.
	CO-4	Describe routing and congestion in network layer with routing algorithms and classify IPV4 addressing scheme.
	CO-5	Develop network security and define various protocols such as FTP, HTTP, Telnet, DNS.
Software Engineering and Design Patterns MC2023	CO-1	Define various software application domains and remember different process model used in software development.
	CO-2	Explain needs for software specifications also they can classify different types of software requirements and their gathering techniques.
	CO-3	Convert the requirements model into the design model and demonstrate use of software and user interface design principles.
	CO-4	Illustrate the appropriate design patterns to solve object-oriented design problems.
	CO-5	Apply structural patterns to solve design problems.

Data Warehousing and Mining MC2024	CO-1	Understand the basics of types of data, quality of data, suitable techniques required for preprocessing and measures required to perform data analysis.
	CO-2	Describe the need of classification, identify suitable technique(s) to perform classification, model building and evaluation.
	CO-3	Identify the requirements and usage of association rule mining on categorical and continuous data.
	CO-4	Compare and Identify suitable clustering algorithm(s) (apply with open source tools), interpret, evaluate and report the result.
	CO-5	Describe the requirements and the need of web mining.
Artificial Intelligence MC2025B	CO-1	Outline problems that are amenable to solution by AI methods, and which AI methods may be suited to solving a given problem.
	CO-2	Apply the language/framework of different AI methods for a given problem.
	CO-3	Implement basic AI algorithms.
	CO-4	Design and carry out an empirical evaluation of different algorithms on problem formalization.
	CO-5	State the conclusions that the evaluation supports.
DBMS Lab MC2026	CO-1	Utilize SQL to execute queries for creating database.
	CO-2	performing data manipulation operations.
	CO-3	Examine integrity constraints to build efficient databases.
	CO-4	Apply Queries using Advanced Concepts of SQL.
	CO-5	Build PL/SQL programs including stored procedures, functions, cursors and triggers.
Computer Networks Lab MC2027	CO-1	Implement the data link layer framing methods such as character stuffing and bit stuffing.
	CO-2	Implement on a data set of characters the three CRC polynomials – CRC 12, CRC 16 and CRC CCIP.
	CO-3	Implement Dijkstra's algorithm to compute the Shortest path through a graph.
	CO-4	Take an example subnet graph with weights indicating delay between nodes. Now obtain Routing table at each node using distance vector routing algorithm.
	CO-5	Take an example subnet of hosts. Obtain broadcast tree for it.
Software Engineering and Design Patterns Lab MC2028	CO-1	To Gains Knowledge on various concepts of a C language.
	CO-2	To Draw flowcharts and write algorithms..
	CO-3	To Design and development of C problem solving skills.
	CO-4	To Design and develop modular programming skills.
	CO-5	To Trace and debug a program
Employability Skills MC2029	CO-1	Recite the soft skills.
	CO-2	Make presentations effectively with appropriate body language.
	CO-3	Be composed with positive attitude.
	CO-4	Apply their core competencies to succeed in professional and personal life.
<b>COURSE OUTCOMES FOR SECOND YEAR THIRD SEMESTER</b>		
<b>COURSE TITLE WITH CODE</b>	<b>CO</b>	<b>STATEMENT</b>
Machine Learning	CO-1	Illustrate and comprehend the basics of Machine Learning with Python.
	CO-2	Demonstrate the algorithms of Supervised Learning and be able to differentiate linear and logistic regressions.

Machine Learning with Python MC2031	CO-3	Demonstrate the algorithms of Unsupervised Learning and be able to understand the clustering algorithms.
	CO-4	Evaluate the concepts of binning, pipeline Interfaces with examples.
	CO-5	Apply the sentiment analysis for various case studies.
Internet of Things MC2032	CO-1	Explain the definition and usage of the term 'the internet of things' in different contexts.
	CO-2	Discover the various network protocols used in IoT.
	CO-3	Define the role of big data, cloud computing and data analytics in a typical IoT system.
	CO-4	Compare and contrast the threat environment based on industry and/or device type.
	CO-5	Design a simple IoT system made up of sensors, wireless network connection, data analytics and display/actuators, and write the necessary control software.
Web Technologies MC2033	CO-1	Analyze a web page and identify its elements and attributes.
	CO-2	To acquire knowledge of xml fundamentals and usage of xml technology in electronic data interchange.
	CO-3	Build dynamic web pages using JavaScript (client side programming).
	CO-4	To design and develop web based enterprise systems for the enterprises using technologies like jsp, servlet.
	CO-5	Build web applications using PHP.
Cryptography and Network Security MC2034	CO-1	Explain Basic Principles, different security threats, countermeasures, foundation course of cryptography mathematics and Symmetric Encryption.
	CO-2	Classify the basic principles of Asymmetric key algorithms and operations of asymmetric key cryptography.
	CO-3	Explain the concept of Revise Key Management and Distribution and User Authentication.
	CO-4	To design and implement programs to analyze the different pointer applications
	CO-5	Determine the knowledge of Network and Internet Security Protocols such as S/MIME.
Software Project Management MC2035A	CO-1	Apply the process to be followed in the software development life-cycle models.
	CO-2	Apply the concepts of project management & planning.
	CO-3	Implement the project plans through managing people, communications and change.
	CO-4	Conduct activities necessary to successfully complete and close the Software projects.
	CO-5	Implement communication, modeling, and construction & deployment practices in software development.
Machine Learning with Python Lab MC2036	CO-1	Make use of Data sets in implementing the machine learning algorithms.
	CO-2	Implement procedures for the machine learning algorithms.
	CO-3	Design Python programs for various Learning algorithms.
	CO-4	Apply appropriate data sets to the Machine Learning algorithms.
	CO-5	Identify and apply Machine Learning algorithms to solve real world problems.
	CO-1	Interpret the impact and challenges posed by IoT networks leading to new architectural models.

IoT Lab MC2037	CO-2	Compare and contrast the deployment of smart objects and the technologies to connect them to network.
	CO-3	Appraise the role of IoT protocols for efficient network communication.
	CO-4	Elaborate the need for Data Analytics and Security in IoT.
	CO-5	Illustrate different sensor technologies for sensing real world entities and identify the applications of IoT in Industry.
Web Technologies Lab MC2038	CO-1	Create dynamic and interactive web pages using HTML, CSS & Java Script.
	CO-2	Experiment with Learn and implement XML concepts.
	CO-3	Develop web applications using PHP.
	CO-4	Show the Install Tomcat Server and execute client-server programs.
	CO-5	Implement programs using Ruby programming.
Human Resource Management MC2039	CO-1	Explain the importance of human resources and their effective management in organizations.
	CO-2	Demonstrate a basic understanding of different tools used in forecasting and planning, human resource need.
	CO-3	Describe the meanings of terminology and tools used in managing employees effectively.
	CO-4	Make use of Record governmental regulations affecting employees and employers.
	CO-5	Analyze the key issues related to administering the human elements such as motivation, compensation, appraisal, career planning, diversity, ethics, and training.
<b>COURSE OUTCOMES FOR SECOND YEAR FOUR SEMESTER</b>		
<b>COURSE TITLE WITH CODE</b>	<b>CO</b>	<b>STATEMENT</b>
Software Testing Methodologies 2041	CO-1	Identify and understand various software testing problems, apply software testing knowledge and engineering methods and solve these problems by designing and selecting software test models, criteria, strategies, and methods.
	CO-2	Design and conduct a software test process for a software project.
	CO-3	Use various communication methods and skills to communicate with their teammates to conduct their practice-oriented software testing projects.
	CO-4	Basic understanding and knowledge of contemporary issues in software testing, such as component-based, web based and object oriented software testing problems.
	CO-5	Write test cases for given software to test it before delivery to the customer and write test scripts for both desktop and web based applications.