Bhujbal Knowledge City

MET's Institute of Engineering, Adgaon Nashik-422003

Department of MCA

Course Outcomes

FYMCA Semester-I		
310901 Discrete Mathematics and Statistics	310901.1	Solve real world problems logically by using set and induction approaches.
	310901.2	Describe and implement relations and functions.
	310901.3	Apply logical reasoning to solve a variety of problems.
	310901.4	Apply statistical concepts to solve basic problems.
	310901.5	Solve the problems of Discrete Distributions and Continuous Distributions.
	310901.6	Explain various Descriptive Statistical concepts
310902 Data Structures and Algorithms	310902.1	Explain the Complexity of Algorithms & fundamentals of Data Structures.
	310902.2	Describe representation & application of Linked List
	310902.3	Write programs that uses stacks, queues.
	310902.4	Apply nonlinear data structure trees to solve mathematical problems.
	310902.5	Explain representations & the applications of graphs.
	310902.6	Implement different searching and sorting algorithms.
310903 Object Oriented Programming	310903.1	Explore the basics of OOP
	310903.2	Analyze the strengths of object oriented programming
	310903.3	Design and apply OOP principles for effective programming.
	310903.4	Develop programming application using object oriented programming language C++
	310903.5	Achieve applicability of OOP
	310903.6	Percept the utility of OOP for advanced programming
310904 Software Engineering & Project Management	310904.1	Choose and apply appropriate lifecycle model of software development
	310904.2	Analyze software requirements by applying various modelling techniques
	310904.3	Describe principles of agile development, discuss the SCRUM process and distinguish Agile process model from other process models
	310904.4	Describe project schedule and cost estimation
	310904.5	Understand IT project management through life cycle of the project and future trends in IT Project Management.
	310904.6	Define ethics and understand its importance in project leadership.
310905 Information Systemsand Engineering Economics	310905.1	Understand the need, usage and importance Management Functions, Organisational structure andInformation Systems.
	310905.2	Understand the Information Systems, Project Management, Managing Data resources, Knowledge Management, Business Process Integration and Enterprise Systems.
	310905.3	Understand the Management Information Systems Applications using in an Organization.
	310905.4	Elaborate Managerial Decision Making Models and applying to Business Intelligence.
	310905.5	Implement the basic Accounting concepts in the banking and financial applications
	310905.6	Apply the basic concepts of cost accounting in real world problem
310906 Data Structures and Algorithms Laboratory	310906.1	Implement elementary data structures such as Arrays, linked lists
	310906.2	Implement representation & application of Linked List
	310906.3	Demonstrate practical knowledge on the applications of stacks, queues
	310906.4	Implement nonlinear data structure trees to solve mathematical problems.
	310906.5	Implement representations & the applications of graphs.
	310906.6	Implement different searching and sorting algorithms.
310907 OOP Laboratory	310907.1	Able to Understand OOPs Concept,features, Data types, Operators & Conversions in program design.
	310907.2	Able to Understand & Apply the concepts of Classes,Objects, friend function, constructors & destructors in program design.
	310907.3	Able to Understand & Design various forms of inheritance, String classs, calling base class constructors.
	310907.4	Able to Apply & Analyze operator overloading, runtime polymorphism.
	310907.5	Able to Apply & Analyze Generic Programming.
	310907.6	Implement Object Oriented Programs using templates and exceptional handling concepts.
310908 Python Programming Laboratory	310908.1	Interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements.
	310908.2	Express proficiency in the handling of strings and functions.
	310908.3	Articulate the Object-Oriented Programming concepts using Python.
	310908.4	Create Python programs by utilizing the data structures like lists, dictionaries, tuples and sets.
	310908.5	Design program using string manipulation functions.
	310908.6	Implement OOP‟s concept in Python.
	310909.1	Apply business communication strategies and principles to prepare effective communication for domestic and international business situations

310909 Business Communication Lab	310909.2	Identify ethical, legal, cultural, and global issues affecting business communication.
	310909.3	Utilize analytical and problem solving skills appropriate to business communication.
	310909.4	Participate in team activities using collaborative work skills.
	310909.5	Select appropriate organizational formats and channels used in developing and presenting business messages.
	310909.6	Communicate via electronic mail, Internet, and other technologies.
	310909.7	Deliver an effective oral business presentation
310910A Audit Course-1-I-Foreign Language-	310910A.1	Have ability of basic communication.
	310910A.2	Have the knowledge of Japanese script.
	310910A.3	Get introduced to reading , writing and listening skills
	310910A.4	Will develop interest to pursue professional Japanese Language course.
310910B Audit Course 1 AC1-II: Road Safety	310910B.1	Generate awareness about number of people dyeing every year in road accidents, traffic rules and characteristics of accident.
	310910B.2	Gain information and knowledge about people responsible for accidents and their duties.
	310910B.3	Understand the importance of multidisciplinary approach to planning for traffic safety and rehabilitation.
	310910B.4	Improve Road safety in developing Country.
FYMCA Semester-II		
310912 Database Management System	310912.1	Design E-R Model for given requirements and convert the same into database tables.
	310912.2	Use database techniques such as SQL & PL/SQL.
	310912.3	Use modern database techniques such as NOSQL.
	310912.4	Explain transaction Management in relational database System.
	310912.5	Describe different database architecture and analyses the use of appropriate architecture in real time environment.
	310912.6	Students will be able to use advanced database Programming concepts Big Data – HADOOP
310913 Computer Network	310913.1	Analyze the requirements for a given organizational structure to select the most appropriate networking architecture, topologies, transmission mediums, and technologies.
	310913.2	Demonstrate design issues, flow control and error control.
	310913.3	Analyze data flow between TCP/IP model using Application, Transport and Network Layer protocols.
	310913.4	Illustrate applications of Computer Network capabilities, selection and usage for various sectors of user community.
	310913.5	Illustrate Client-Server architectures and prototypes by the means of correct standards and technology.
	310913.6	Demonstrate different routing and switching algorithms.
310914 Java Programming	310914.1	Describe the core concept of Java programming
	310914.2	Discover the need for working with the multithreading and file handling
	310914.3	Illustrate the purpose of applet and AWT in Java programming
	310914.4	Indicate the use of database connectivity using Java Programming
	310914.5	Articulate the networking concepts in Java
	310914.6	Implement Java Servlet and JSP concept in Java
310915 Operating System	310915.1	Fundamental understanding of the role of Operating Systems.
	310915.2	To understand the concept of a process and thread.
	310915.3	To apply the concept of process scheduling.
	310915.4	To apply the concept of process synchronization, mutual exclusion and the deadlock
	310915.5	To realize the concept of disk scheduling and File system
	310915.6	To understand the various memory management techniques.
310916A Elective-I-Mobile Computing	310916A.1	Describe the concept and technique of Wireless telephony.
	310916A.2	Explain the concept of wireless networking.
	310916A.3	Describe data management issue of mobile wireless network.
	310916A.4	Discuss the mobile operating system
	310916A.5	Design Android mobile application.
	310916A.6	Manage database and features of mobile application.
310916B Elective I-Artificial Intelligence	310916B.1	Describe the modern view of AI as the study of agents that receive precepts from the Environment and perform actions.
	310916B.2	Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning.
	310916B.3	Describe the use of various search techniques
	310916B.4	Develop knowledge of decision making methods
	310916B.5	Explain about AI techniques for logical planning
	310916B.6	Explain the concept of Expert systems
310916C Elective I (Cyber Security)	310916C.1	Analyze and evaluate the cyber security needs of an organization.
	310916C.2	Conduct a cyber security risk assessment.
	310916C.3	Measure the performance and troubleshoot cyber security systems.
	310916C.4	Implement cyber security solutions.
	310916C.5	Be able to study cyber security, information assurance, and cyber/computer orensics software/tools.
	310916C.6	Identify the key cyber security vendors in the marketplace.

310916D Elective-I Block Chain	310916D.1	Understand the structure of a block chain and why/when it is better than a simple distributed database
	310916D.2	Analyze the incentive structure in a block chain based system and critically assess its functions,benefits and vulnerabilities
	310916D.3	Explain Nakamoto consensus. Describe differences between proof-of-work and proof-of-stake consensus.
	310916D.4	Understand what constitutes a “smart” contract, what are its legal implications and what it can and cannot do, now and in the near future
	310916D.5	Attain awareness of the new challenges that exist in monetizing businesses around block chains and smart contracts
	310916D.6	State-of-the-art, open research challenges, and future directions.
310917 Database Management System Laboratory	310917.1	To install and configure database systems.
	310917.2	To analyze database models & entity relationship models.
	310917.3	To design and implement a database schema for a given problem-domain.
	310917.4	To understand the relational and document type database systems.
	310917.5	To populate and query a database using SQL DML/DDL commands.
	310917.6	To populate and query a database using MongoDB commands.
310918 Operating System Lab	310918.1	Understand the basics of Linux commands and program the shell of Linux.
	310918.2	Develop various system programs for the functioning of operating system.
	310918.3	Implement basic building blocks like processes, threads
	310918.4	Develop various system programs for the functioning of OS concepts in user space like concurrency control and file handling in Linux.
	310918.5	Implement page replacement algorithm.
	310918.6	Develop the system program for the functioning of OS concepts in kernel space like embedding the system call in any Linux kernel.
310919 Java Programming Laboratory	310919.1	Describe the core concept of Java programming
	310919.2	Discover the need for working with the multithreading and file handling
	310919.3	Illustrate the purpose of applet and AWT in Java programming
	310919.4	Indicate the use of database connectivity using Java Programming
	310919.5	Articulate the networking concepts in Java
	310919.6	Implement Java Servlet and JSP concept in Java
310920 Project Based Learning-I	310920.1	Able to analyze and solve problems by applying programming knowledge
	310920.2	Prepare requirements and Design Documents
	310920.3	Develop Inter-personal and leadership qualities
	310920.4	Demonstrate system with results and interpretation
	310920.5	Describe software testing methods
	310920.6	Design and develop technical documentation
310921A Audit Course-2-I Foreign Language-	310921A.1	Have ability of basic communication.
	310921A.2	Have the knowledge of Japanese script.
	310921A.3	Get introduced to reading , writing and listening skills
	310921A.4	Will develop interest to pursue professional Japanese Language course.
310921A Audit Course-2-I- Foreign Language-FRENCH	310921A.1	Have ability of basic communication. Will develop interest to pursue professional French Language course. Course C
	310921A.2	Have the knowledge of French script.
	310921A.3	Get introduced to reading , writing and listening skills
	310921A.4	Will develop interest to pursue professional French Language course. Course C
310921B Audit Course-2-II- Environmental Studies	310921B.1	Recognize the physical, chemical, and biological components of the earth‟s systems and show how they function.
	310921B.2	See how natural systems and human-designed systems work together, as well as in conflict with each other.
	310921B.3	Correlate the human population growth and its trend to the environmental degradation.
	310921B.4	Identify different types of environmental pollution and control measures
	310921B.5	Correlate the exploitation and utilization of conventional and non-conventional resources.
310921C Audit Course-2-III- Augmented Reality and Virtual	310921C.1	Apply virtual reality concepts
	310921C.2	Understand the concepts of IO interface and visual computation
	310921C.3	Develop augmented reality applications using various tools and framework.
SYMCA Semester-III		
410901	410901.1	Explain flow process for data science problems.
	410901.2	Elaborate data preprocessing and warehouse.
	410901.3	Utilize various classification techniques for commercially available datasets.

Data Science	410901.4	Implement association rule mining for commercially available datasets.
	410901.5	Apply standard clustering methods for commercially available datasets.
	410901.6	Compare appropriate data visualization method for effective visualization of data
410902 Web Technologies	410902.1	Design web-based application using client-side Technology.
	410902.2	Develop the structure of web sites using XML components.
	410902.3	Analyze current client-side web technologies: JavaScript in detail.
	410902.4	Apply recent client-side web technologies: Angular JS in detail.
	410902.5	Apply the server side technologies for web development
	410902.6	Create the effective web applications for business functionalities using ASP.NET
410903 Cloud Computing	410903.1	Understand the different Cloud Computing environment
	410903.2	Use appropriate data storage technique on Cloud
	410903.3	Analyze virtualization technology
	410903.4	Develop and deploy applications on Cloud
	410903.5	Apply security in cloud applications
	410903.6	Use advance techniques in Cloud Computing
410904A Elective: II-Big Data Analytics	410904A.1	Understand big data analytics concepts
	410904A.2	Solve big data problems using Hadoop
	410904A.3	Apply different Supervised learning and Unsupervised Learning algorithms
	410904A.4	Understand different data visualization techniques.
	410904A.5	Understand Hadoop Architecture
	410904A.6	Solve Complex real world problems in various applications like recommender systems, social media applications, etc.
410904B Elective: II-Machine Learning	410904B.1	Understand basic concepts of Machine Learning.
	410904B.2	Understand classification concepts
	410904B.3	Apply different regression and generalization techniques.
	410904B.4	Apply various logic Based and algebraic algorithms for real world applications.
	410904B.5	Use probabilistic models for machine learning
	410904B.6	Understand trends In Machine Learning
410904C Elective: II-Object Oriented Analysis and Design	410904C.1	Analyze the problem statement (SRS) and choose proper design technique for designing web-based/ desktop application.
	410904C.2	Apply static modeling design to applications.
	410904C.3	Understand application of UML in different systems.
	410904C.4	Apply dynamic modeling design to applications.
	410904C.5	Evaluate software architectures.
	410904C.6	Understand various software design patterns.
410904D Elective: II-Internet of Things	410904D.1	Understand general concepts of Internet of Things (IoT)
	410904D.2	Analyze various M2M and IoT architectures
	410904D.3	Implement an architectural design for IoT for specified requirement
	410904D.4	Analyze applications of IoT in real time scenario
	410904D.5	Analyze the challenges of IoT architectures.
	410904D.6	Recognize various devices, sensors and application
410905 Software Testing and Quality Assurance	410905.1	Illustrate different approaches of quality management, assurance, and quality standard to software system
	410905.2	Create test plan, test cases and defect repository using case study.
	410905.3	Apply the concept of white box and block box testing techniques.
	410905.4	Analyze various testing types
	410905.5	To analyze recent automation tools for software testing.
	410905.6	Apply software testing automation concepts using Selenium
410906 Web Technologies Lab	410906.1	Design web-based application using client-side Technology.
	410906.2	Develop the structure of web sites using XML components.
	410906.3	Analyze current client-side web technologies: JavaScript in detail.
	410906.4	Understand recent client-side web technologies: Angular JS in detail.
	410906.5	Understand current server-side web technologies and uses.
	410906.6	Analyze ASP.NET in detail.
410907 Computer Laboratory	410907.1	Implement white box and block box testing techniques for any software systems
	410907.2	Create Test plan and test cases using case studies.
	410907.3	Apply automation testing using tools
	410907.4	Interpret business models and scientific computing paradigms, and apply software tools for big data analytics.
	410907.5	Design and develop machine learning model for a real time applications
	410907.6	Implement an architectural design for IoT for specified requirement
	410907.7	Interpret the importance of Computational Intelligence for solving the different problems
410908 Data Science Laboratory	410908.1	Describe framework of any Data Analytics Tool
	410908.2	Write basic applications using the fundamentals of any Data Analytics Tool.
	410908.3	Apply Modeling techniques using any Data Analytics Tool.
	410908.4	Implement Mining techniques using any Data Analytics Tool

Laboratory	410908.5	Employ data analysis using graphs.
	410908.6	Implement Data Visualization
410909 Project Based Learning –II	410909.1	Identify the real life problem from societal need point of view
	410909.2	Choose and compare alternative approaches to select most feasible one
	410909.3	Choose and compare alternative approaches to select most feasible one perspective
	410909.4	Design the reliable and scalable solution to meet challenges
	410909.5	Inculcate the habit of lifelong learning.
	410909.6	Design and develop technical documentation
410910A AC 3-I : Foreign Language (Japanese	410910A.1	Apply language to communicate confidently and clearly in the Japanese language
	410910A.2	: Understand and use Japanese script to read and write
	410910A.3	Apply knowledge for next advance level reading, writing and listening skills
	410910A.4	Develop interest to pursue further study, work and leisure
410910B AC3 – II: Professional Ethics and Etiquettes	410910B.1	Describe the major elements of ethical theory.
	410910B.2	Analyze and present results of complex ethics cases
	410910B.3	Develop basic life skills or etiquettes in order to succeed in corporate culture.
	410910B.4	Acquire effective writing skills for drafting academic, business and technical documents
	410910B.5	Demonstrate the understanding of professionalism in terms of workplace behaviors and relationships
	410910B.6	Develop professional attitude
410910C Audit Course AC3-III: Mobile App development	410910C.1	Install and configure Android application development tools.
	410910C.2	Design and develop User Interfaces for the Android platform.
	410910C.3	Understanding enterprise scale requirements of mobile applications.
	410910C.4	Demonstrate their ability to develop software with reasonable complexity on mobile platform
	410910C.5	Demonstrate their ability to deploy software to mobile devices
	410910C.6	Apply development tools, techniques, programming languages and libraries required for Mobile app development
SYMCA Semester-IV		
410912 Major Project	410912.1	Learn team work and professionalism.
	410912.2	Apply SDLC to project
	410912.3	Apply communication and presentation skills
	410912.4	Recognize the importance of documentation.
410913 Seminar on Major Project	410913.1	Analyze recent topic or emerging trends
	410913.2	Summarize literature survey
	410913.3	Identify, understand and discuss current real-world issues.
	410913.4	Suggest future scope for the topic
	410913.5	Use professional ethics
	410913.6	Develop proficiency in presentation skills and written communication
410914A Audit Course 4-I: Entrepreneurship Development	410914A.1	Develop awareness about entrepreneurship
	410914A.2	Develop an entrepreneurial mind-set by learning key skills such as design, personal ing, and communication
	410914A.3	Identify business opportunities.
	410914A.4	Develop comprehensive business plans.
	410914A.5	Understand the entrepreneurial finances and policies
410914B AC4-II Digital and Social Media	410914B.1	Understand social media marketing
	410914B.2	Define social media marketing goal setting necessary to achieve successful online campaigns.
	410914B.3	Understand digital marketing concepts