

St. Xavier's Catholic College of Engineering, Chunkankadai, Nagercoil - 629003.
2020 -- 2021

Course Outcomes

Program: Master of Computer Applications

Semester:1

Course:Advanced Database Technology-[MC5105]
Upon completion of the course, the students will.../ will be able to... CO1 : Design a distributed database system and execute distributed queries CO2 : Use NoSQL database systems and manipulate the data associated with it. CO3 : Design a data warehouse system and apply OLAP operations. CO4 : Design XML database systems and validating with XML schema. CO5 : Apply knowledge of information retrieval concepts on web databases.
Course:Object Oriented Software Engineering-[MC5106]
Upon completion of the course, the students will.../ will be able to... CO1 : Able to identify the appropriate process model to develop the object oriented software CO2 : Gain knowledge about requirement elicitation and analyzing techniques CO3 : Able to choose and design suitable UML diagrams and methods CO4 : Able to apply correct testing methods and maintain software systems. CO5 : Able to estimate the object oriented application by applying metric data.
Course:Python Programming-[MC5107]
Upon completion of the course, the students will.../ will be able to... CO1 : Develop algorithmic solutions to simple computational problems CO2 : Structure simple Python programs for solving problems CO3 : Read and write data from/to files in Python Programs. CO4 : Represent compound data using Python lists, tuples, dictionaries. CO5 : Decompose a Python program into functions.
Course:Research Methodology and Intellectual Property Rights-[MC5108]
Upon completion of the course, the students will.../ will be able to... CO1 : Understand the research problem and Literature review. CO2 : Understand the various research designs and their characteristics. CO3 : Prepare a well-structured research paper and scientific presentations. CO4 : Explore on various IPR Components and process of filing. CO5 : Develop awareness the patent law and procedural mechanism in obtaining a patent.
Course:Advanced Database Technology Laboratory-[MC5114]
Upon completion of the course, the students will.../ will be able to... CO1 : Design and Implement databases. CO2 : Formulate complex queries using SQL CO3 : Design and Implement applications that have GUI and access databases for backend connectivity CO4 : To design and implement Mobile Databases CO5 : To design and implement databases to store spatial and temporal data objects
Course:Advanced Data Structures and Python Programming Laboratory-[MC5115]
Upon completion of the course, the students will.../ will be able to... CO1 : Develop algorithmic solutions to simple computational problems

CO2 : Develop and execute Python programs.
CO3 : Decompose a Python program into functions.
CO4 : Represent compound data using Python data structures.
CO5 : Apply Python features in developing software applications.
Course:Communication Skills Enhancement ? I-[MC5116]
Upon completion of the course, the students will.../ will be able to...
CO1 : Students will be able to make presentations and participate in Group discussions with confidence
CO2 : Students will be able to perform well in the interviews
CO3 : students will make effective presentations
Course:Advanced Data Structures and Algorithms-[MC5301]
Upon completion of the course, the students will.../ will be able to...
CO1 : Implement a program using stack, queue and linked list data structures
CO2 : Design and Implement Tree Data Structures and Sets
CO3 : Apply the Graph Data structure and to find shortest path among the several possibilities
CO4 : Perform Analysis of Various Algorithms
CO5 : Analyze and design algorithms to appreciate the impact of algorithm design in practice

Semester:2

Course:Software Project Management-[MC5003]
Upon completion of the course, the students will.../ will be able to...
CO1 : Understand the activities during the project scheduling of any software application.
CO2 : Learn the risk management activities and the resource allocation for the projects.
CO3 : Can apply the software estimation and recent quality standards for evaluation of the software projects
CO4 : Acquire knowledge and skills needed for the construction of highly reliable software project
CO5 : Able to create reliable, replicable cost estimation that links to the requirements of project planning and managing.
Course:Internet Programming-[MC5206]
Upon completion of the course, the students will.../ will be able to...
CO1 : To write client side scripting.
CO2 : To implement the server side of the web application.
CO3 : To implement Web Application using Spring.
CO4 : To implement a Java application using Java Persistence API.
CO5 : To implement a full-stack Single Page Application using React, Spring and JPA.
Course:Cloud Computing Technologies-[MC5207]
Upon completion of the course, the students will.../ will be able to...
CO1 : Use Distributed systems in Cloud Environment
CO2 : Articulate the main concepts, key technologies, strengths and limitations of Cloud computing
CO3 : Identify the Architecture, Infrastructure and delivery models of Cloud computing
CO4 : Install, choose and use the appropriate current technology for the implementation of Cloud
CO5 : Adopt Microservices and DevOps in Cloud environment

Course:Artificial Intelligence and Machine Learning-[MC5208]

Upon completion of the course, the students will.../ will be able to...

- CO1 : Apply the techniques of Problem Solving in Artificial Intelligence
- CO2 : Implement Knowledge and Reasoning for real world problems
- CO3 : Model the various Learning features of Artificial Intelligence
- CO4 : Analyze the working model and features of Decision tree
- CO5 : Apply k-nearest algorithm for appropriate research problem

Course:Mobile Application Development-[MC5209]

Upon completion of the course, the students will.../ will be able to...

- CO1 : Understand the basics of mobile application development frameworks and tools
- CO2 : To be able to develop a UI for mobile application
- CO3 : To design mobile applications that manages memory dynamically
- CO4 : To build applications based on mobile OS like Android, iOS
- CO5 : To build location based services

Course:Cyber Security-[MC5210]

Upon completion of the course, the students will.../ will be able to...

- CO1 : Develop a set of risk and security requirements to ensure that there are no gaps in an organization's security practices.
- CO2 : Achieve management, operational and technical means for effective cyber security.
- CO3 : Audit and monitor the performance of cyber security controls.
- CO4 : To spot gaps in the system and devise improvements.
- CO5 : Identify and report vulnerabilities in the system.

Course:Internet Programming Laboratory-[MC5214]

Upon completion of the course, the students will.../ will be able to...

- CO1 : To implement client and server side of the web application.
- CO2 : To implement a real time application using WebSocket.
- CO3 : To use Spring framework in web development
- CO4 : To implement applications using Java Persistence API
- CO5 : To implement applications using the Javascript framework React

Course:Artificial Intelligence and Machine Learning Laboratory-[MC5215]

Upon completion of the course, the students will.../ will be able to...

- CO1 : Apply the techniques of Problem Solving in Artificial Intelligence.
- CO2 : Implement Knowledge and Reasoning for real world problems.
- CO3 : Model the various Learning features of Artificial Intelligence
- CO4 : Analyze the working model and features of Decision tree
- CO5 : Apply k-nearest algorithm for appropriate research problem.

Semester:3

Course:Advanced Data Structures and Algorithms-[MC5301]

Upon completion of the course, the students will.../ will be able to...

- CO1 : Describe, explain and use abstract data types including stacks, queues and lists
- CO2 : Design and Implement Tree data structures and Sets
- CO3 : Able to understand and implement non linear data structures - graphs
- CO4 : Able to understand various algorithm design and implementation.

Course:Web Programming Essentials-[MC5303]

Upon completion of the course, the students will.../ will be able to...

- CO1 : Create a basic website using HTML and Cascading Style Sheets
- CO2 : Design and implement dynamic web page with validation using JavaScript objects and by applying different event handling mechanisms
- CO3 : Design rich client presentation using AJAX.
- CO4 : Design and implement simple web page in PHP, and to present data in XML format.
- CO5 : Design front end web page and connect to the back end databases

Course:Programming with Java-[MC5304]

Upon completion of the course, the students will.../ will be able to...

- CO1 : Able to understand the basic concepts of core Java
- CO2 : Implement Java programs
- CO3 : Make use of hierarchy of Java classes to provide a solution to a given set of requirements found in the Java API
- CO4 : Able to write programs for database connectivity, Servlets, RMI and Swing
- CO5 : Design and implement server side programs using JSP/Servlets and use the framework spring and Hibernate
- CO6 : Able to understand java internals and java networking

Course:Web Programming Laboratory-[MC5312]

Upon completion of the course, the students will.../ will be able to...

- CO1 : Develop simple web applications using scripting languages
- CO2 : Implement server side and client side programming develop web applications with various web technology concepts
- CO3 : Design a Web application using various technologies such as AJAX, JQuery and JSON
- CO4 : Develop an application for social media using HTML5, CSS3, JQuery, AJAX & PHP

Course:Programming with Java Laborator-[MC5313]

Upon completion of the course, the students will.../ will be able to...

- CO1 : Apply the Object Oriented features of Java for programming on the internet
- CO2 : Implement, compile, test and run Java program
- CO3 : Make use of hierarchy of Java classes to provide a solution to a given set of requirements found in the Java API
- CO4 : Understand the components and patterns that constitute a suitable architecture for a web application using java servlets
- CO5 : Demonstrate systematic knowledge of backend and front end by developing an appropriate application.
- CO6 : Implement socket programming and Client side scripting in Java

Course:Computer Networks-[MC5302]

Upon completion of the course, the students will.../ will be able to...

- CO1 : Able to trace the flow of information from one node to another node in the network
- CO2 : Able to Identify the components required to build different types of networks
- CO3 : Able to understand the functionalities needed for data communication into layers
- CO4 : Able to choose the required functionality at each layer for given application
- CO5 : Able to understand the working principles of various application protocols and fundamentals of security issues and services available.

Course:Object Oriented Analysis and Design-[MC5305]

Upon completion of the course, the students will.../ will be able to...

CO1 : Able to understand the object oriented concepts and to apply object oriented life cycle model for a project
CO2 : Able to design static and dynamic models using UML diagrams.
CO3 : Able to perform object oriented analysis to identify the objects from the problem specification.
CO4 : Able to identify and refine the attributes and methods for designing the object oriented system
CO5 : Able learn the open source CASE tools and to apply them in various domains.
Course:Data Structures and Algorithms Laboratory-[MC5311]
Upon completion of the course, the students will.../ will be able to...
CO1 :Work with basic data structures that are suitable for the problems to be solved efficiently.
CO2 :Design and implement linear, tree, and graph structures and its applications
CO3 :Design various sorting techniques,its algorithm design and analysis

Semester:4

Course:Security in computing-[MC5004]
Upon completion of the course, the students will.../ will be able to...
CO1 :Apply cryptographic algorithms for encrypting and decryption for secure data transmission
CO2 :Understand the importance of Digital signature for secure e-documents exchange.
CO3 :Understand the program threats and apply good programming practice.
CO4 :Get the knowledge about the security services available for internet and web applications.
CO5 :Understand data vulnerability and sql injection.
CO6 :Gain the knowledge of security models and published standards.
Course:Resource Management Techniques-[MC5401]
Upon completion of the course, the students will.../ will be able to...
CO1 : Understand and apply linear, integer programming to solve operational problem with constraints
CO2 : Apply transportation and assignment models to find optimal solution in warehousing and Travelling
CO3 : To prepare project scheduling using PERT and CPM
CO4 : Identify and analyze appropriate queuing model to reduce the waiting time in queue.
CO5 : Able to use optimization concepts in real world problems
Course:Mobile Computing-[MC5402]
Upon completion of the course, the students will.../ will be able to...
CO1 :Gain the knowledge about various types of Wireless Data Networks and Voice Networks
CO2 :understand the architectures, the challenges and the Solutions of Wireless Communication
CO3 :Realize the role of Wireless Protocols in shaping the future Internet.
CO4 :Able to develop simple Mobile Application Using Android
Course:Advanced Databases and Datamining-[MC5403]
Upon completion of the course, the students will.../ will be able to...
CO1 : Create relational data models
CO2 : Preprocess the data for mining applications
CO3 : Apply the association rules for mining the data.
CO4 : Design and deploy appropriate classification techniques & Cluster the high dimensional data for better organization of the data.

CO5 : Evolve Multidimensional Intelligent model from typical system & evaluate various mining techniques on complex data objects.
Course:Web Application Development-[MC5404]
Upon completion of the course, the students will.../ will be able to...
CO1 : Design and implement Internet systems for enhancing education and engineering design
CO2 : Understand functionality of Internet system
CO3 : Design a system according to customer needs using the available Internet technologies
CO4 : Design and develop interactive, client-side, server-side executable web applications.
CO5 : Develop a rapid application in many areas on most platforms.
CO6 : Build better Web apps more quickly and with less code
Course:Web Application Development Laboratory-[MC5412]
Upon completion of the course, the students will.../ will be able to...
CO1 : Design and develop interactive, client-side, server-side executable web applications.
CO2 : Develop a simple online application using Spring MVC
CO3 : Create applications using web services such as JSON, WSDL and SOAP
CO4 : Develop a simple database application using Spring JDBC/Struts with CURD functionality
Course:Technical Seminar and Report Writing-[MC5413]
Upon completion of the course, the students will.../ will be able to...
CO1 : To study research papers for understanding of a new field, in the absence of a textbook , to summarise and review them
CO2 : To identify promising new directions of various cutting edge technologies
CO3 : To impart skills in preparing detailed report describing the project and results
CO4 : To effectively communicate by making an oral presentation before an evaluation committee
Course:Mobile Application Development Laboratory-[MP5411]
Upon completion of the course, the students will.../ will be able to...
CO1 : Install and configure Android application development tools.
CO2 : Design and develop user Interfaces for the Android platform
CO3 : Apply Java programming concepts to Android application development.
CO4 : Familiar with technology and business trends impacting mobile applications.
CO5 : competent with the characterization and architecture of mobile applications.

Semester:5

Course:Professional Ethics-[MC5006]
Upon completion of the course, the students will.../ will be able to...
CO1 : Helps to examine situations and to internalize the need for applying ethical principles, values to tackle with various situations
CO2 : Develop a responsible attitude towards the use of computer as well as the technology.
CO3 : Able to envision the societal impact on the products/ projects they develop in their career
CO4 : Understanding the code of ethics and standards of computer professionals
CO5 : Analyze the professional responsibility and empowering access to information in the work place.

Course:Service Oriented Architecture-[MC5012]

Upon completion of the course, the students will.../ will be able to...

CO1 :Able to know the structure of XML and to design and store data in XML

CO2 :Able to apply SOAP , HTTP and UDDI services in the web applications.

CO3 :Able to apply SOA architecture and the underlying design principles for the web projects

CO4 :Able to understand the role of SOA in J2EE and .NET

CO5 :Able to know the cloud computing architecture and the types of clouds

Course:Cloud Computing-[MC5501]

Upon completion of the course, the students will.../ will be able to...

CO1 : Compare the strengths and limitations of cloud computing

CO2 :Identify the architecture, infrastructure and delivery models of cloud computin

CO3 :Apply suitable virtualization concept.

CO4 :Choose the appropriate cloud player, Programming Models and approach.

CO5 :Address the core issues of cloud computing such as security, privacy and interoperability.

CO6 :Design Cloud Services and Set a private cloud

Course:Big Data Analytics-[MC5502]

Upon completion of the course, the students will.../ will be able to...

CO1 : Work with big data platform and Understand the fundamentals of various big data analysis techniques

CO2 : Analyze the big data analytic techniques for useful business applications.

CO3 : Design efficient algorithms for mining the data from large volumes.

CO4 : Analyze the HADOOP and Map Reduce technologies associated with big data analytics

CO5 : Explore the applications of Big Data

Course:Software Testing and Quality Assurance-[MC5503]

Upon completion of the course, the students will.../ will be able to...

CO1 : Able to test the software by applying various testing techniques.

CO2 : Able to debug the project and to test the entire computer based systems at all levels.

CO3 : Able to test the applications in the specialized environment using various automation tools.

CO4 : Able to evaluate the web applications using bug tracking tools.

CO5 : Able to apply quality and reliability metrics to ensure the performance of the software.

Course:Cloud and Big Data Laboratory-[MC5511]

Upon completion of the course, the students will.../ will be able to...

CO1 : Use the cloud and big data tool kits.

CO2 : Design and Implement applications on the Cloud environment

CO3 : Set up and implement Hadoop clusters

CO4 : Use the map reduce tasks for various applications

Course:Software Testing Laboratory-[MC5512]

Upon completion of the course, the students will.../ will be able to...

CO1 : Able to test the software by applying various testing techniques.

CO2 : Able to debug the project and to test the entire computer based systems at all levels.

CO3 : Able to test the applications in the specialized environment using various automation tools.

CO4 : Able to evaluate the web applications using bug tracking tools.

CO5 : Able to apply quality and reliability metrics to ensure the performance of the software.

Course:Mini Project-[MC5513]

Upon completion of the course, the students will.../ will be able to...

CO1 : To plan, analyze, design and implement a software project using SDLC model.

CO2 : To learn to work as a team and to focus on getting a working project done within a stipulated period of time.

CO3 : Gain confidence to implement small ideas into real life working software projects through testing

CO4 : To promote the concept of entrepreneurship.

CO5 : To inculcate innovative thinking and thereby preparing students for main project.