

| | |
|---|---|
| Course Title | AUTOMATA THEORY AND COMPILER DESIGN |
| Course Code | BSC 21CS51 |
| Course outcomes (COs): At the end of the course the student will be able to: | |
| C301.1 | Acquire fundamental understanding of the core concepts in automata theory and compiler design |
| C301.2 | Describe regular expression, lexical analysis and their importance |
| C301.3 | Design context free grammar and describe the role of parsers and top down parsing. |
| C301.4 | Design PDA for the given problem and describe bottom up parsing. |
| C301.5 | Understand the variants of Turing machine., and the importance of syntax directed translation, various representation of intermediate codes & issues in code generation |

| | |
|--|--|
| Course Title | COMPUTER NETWORKS |
| Course Code | IPCC 21CS52 |
| Course outcomes (COs): At the end of the course the student will be able to | |
| C302.1 | Understand and explain the fundamentals of data communication networks, including different network topologies, types of networks, and basic network architecture. |
| C302.2 | Analyze and apply the various software and hardware interfaces used in networks, emphasizing the roles of routers, switches, and other networking devices. |
| C302.3 | Implement and manage different physical components and protocols, assessing their applications and effectiveness in real-world networking scenarios. |
| C302.4 | Identify common communication challenges and apply strategic remedies to enhance network performance, reliability, and security. |
| C502.5 | Design, simulate, and evaluate network models to meet specific user requirements, employing modern tools and techniques to optimize network operations. |

| | |
|---|--|
| Course Title | DATABASE MANAGEMENT SYSTEMS |
| Course Code | PCC 21CS53 |
| Course outcomes (COs): At the end of the course the student will be able to: | |
| C303.1 | Identify, analyze and define database objects, enforce integrity constraints on a database using RDBMS |
| C303.2 | Use Structured Query Language (SQL) for database manipulation and also demonstrate the basic of query evaluation. |
| C303.3 | Design and build simple database systems and relate the concept of transaction, concurrency control and recovery in database |
| C304.4 | Develop application to interact with databases, relational algebra expression. |
| C305.5 | Develop applications using tuple and domain relation expression from queries. |

| | |
|---|---|
| Course Title | ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING |
| Course Code | 21CS54 |
| Course outcomes (COs): At the end of the course the student will be able to: | |
| C304.1 | Apply the knowledge of searching and reasoning techniques for different applications. |
| C304.2 | Have a good understanding of machine leaning in relation to other fields and fundamental issues and challenges of machine learning. |
| C304.3 | Apply the knowledge of classification algorithms on various dataset and compare results |
| C304.4 | Model the neuron and Neural Network, and to analyze ANN learning and its applications. |
| C304.5 | Identifying the suitable clustering algorithm for different pattern |

| | |
|---|---|
| Course Title | DATABASE MANAGEMENT SYSTEM LABORATORY WITH MINI PROJECT |
| Course Code | 21CSL55 |
| Course outcomes (COs): At the end of the course the student will be able to: | |
| C305.1 | Utilize appropriate techniques to create, update, and query databases effectively, demonstrating application-level knowledge. |
| C305.2 | Demonstrate the functionality of various database management system components, highlighting their practical significance. |
| C305.3 | Implement and analyze database-driven projects, and evaluate their efficiency and effectiveness in addressing real-world application needs. |

| | |
|---|--|
| Course Title | ANGULAR JS |
| Course Code | 21CSL581 |
| Course outcomes (COs): At the end of the course the student will be able to: | |
| C308.1 | Develop Angular JS programs using basic features |
| C308.2 | Develop dynamic Web applications using AngularJS modules |
| C308.3 | Make use of form validations and controls for interactive applications |
| C308.4 | Apply the concepts of Expressions, data bindings and filters in developing Angular JS programs |
| C308.5 | Make use of modern tools to develop Web applications |

| | |
|---|--|
| Course Title | SOFTWARE ENGINEERING & PROJECT MANAGEMENT |
| Course Code | 21CS61 |
| Course outcomes (COs): At the end of the course the student will be able to: | |
| C309.1 | Understand the activities involved in software engineering and analyze the role of various process models. |
| C309.2 | Describe Requirements Engineering, including elicitation, modeling, use case development, negotiation, and validation, |
| C309.3 | Describe various software testing methods and to understand the importance of agile methodology. |
| C309.4 | Illustrate the role of project planning and quality management in software development |
| C309.5 | Understand the importance of activity planning and different planning models |

| | |
|---|--|
| Course Title | FULLSTACK DEVELOPMENT |
| Course Code | 21CS62 |
| Course outcomes (COs): At the end of the course the student will be able to: | |
| C310.1 | Develop Angular JS programs using basic features |
| C310.2 | Develop dynamic Web applications using AngularJS modules |
| C310.3 | Make use of form validations and controls for interactive applications |
| C310.4 | Apply the concepts of Expressions, data bindings and filters in developing Angular JS programs |
| C310.5 | Make use of modern tools to develop Web applications |

| | |
|---|--|
| Course Title | Computer Graphics and Fundamentals of Image Processing |
| Course Code | 21CS63 |
| Course outcomes (COs): At the end of the course the student will be able to: | |
| C311.1 | Construct geometric objects using Computer Graphics principles and OpenGL APIs |
| C311.2 | Use OpenGL APIs and related mathematics for 2D and 3D geometric Operations on the objects |
| C311.3 | Design GUI with necessary techniques required to animate the created objects |
| C311.4 | Understand the fundamental concepts of image processing and demonstrate the knowledge of basic relationships, distance metrics, and types of image processing operations |

| | |
|--------|---|
| C311.5 | Analyze and apply image segmentation techniques |
|--------|---|

| | |
|---|--|
| Course Title | ADVANCED JAVA PROGRAMMING |
| Course Code | 21CS642 |
| Course outcomes (COs): At the end of the course the student will be able to: | |
| C312.1 | Understanding the fundamental concepts of Enumerations and Annotations |
| C312.2 | Apply the concepts of Generic classes in Java programs |
| C312.3 | Demonstrate the concepts of String operations in Java |
| C312.4 | Develop web-based applications using Java servlets and JSP |
| C312.5 | Illustrate database interaction and transaction processing in Java |

| | |
|---|--|
| Course Title | DATA SCIENCE AND VISUALIZATION |
| Course Code | 21CS644 PE |
| Course outcomes (COs): At the end of the course the student will be able to: | |
| C312.1 | Understand and analyze data in different forms, including structured, semi-structured, and unstructured data. |
| C312.2 | Apply various techniques for Exploratory Data Analysis (EDA) and implement the data science process from data collection to insights. |
| C312.3 | Analyze and apply feature selection algorithms to improve model performance and design a recommender system for practical applications. |
| C312.4 | Evaluate and utilize different data visualization tools and libraries to create insightful and effective visual representations of data. |
| C312.5 | Develop advanced charts and graphs, incorporating mathematical expressions for analytical insights. |