



School of Science and Computer Studies
Master of Computer Application in AI/ML

Course Outcome (COs)

Batch 2026-2028

First Semester

8CSGC6601: ADVANCED DATA STRUCTURES USING C AND LAB

CO1: Understand evaluating efficiency of algorithms and performing operations on arrays. (L 2)

CO2: Understand and implement the concept of Dynamic memory management (L 3)

CO3: Understand and implement linear data structures and algorithms (L 3)

CO4: Implement and analyze non linear data structures (L 4)

CO5: Implement operations on graphs and analyze hashing techniques (L 5)

8CSGC6702: ADVANCED DATABASE MANAGEMENT SYSTEMS AND LAB

CO1: Understand the underlying principles of Relational Database Management System (L 2)

CO2: Apply advanced features of DBMS to implement Integrity and Security controls (L 3)

CO3: Understand the basic concepts of object oriented, object relational, distributed and parallel databases(L 2)

CO4: Implement the advanced DBMS concepts like Transaction processing and concurrency control (L 3).

CO5: Analyze, evaluate and create NoSql databases and perform data manipulation using MongoDB.(L 4,5 & 6)

8CSGC6441 : ADVANCED COMPUTER NETWORKS

CO1: Comprehend knowledge about network architecture and its functionality

CO2: Evaluate different network management techniques

CO3: Analyze the various software defined networks.

CO4: Comprehend the network functions knowledge and virtualisation

CO5: Comprehend the knowledge of network security.

8RESE6021 - Introduction to Research Methods and Techniques

CO1: Understand the significance of research, the research process, and selecting a problem (L1,L2)

CO2: Apply principles of research design, experimental design and literature review techniques. (L2, L3, L4)

CO3: Idea about research design for various research problems. (L3, L4)

CO4: Apply various methods of data to perform data analysis, interpret data and write a report(L3,L4,L5)

CO5: Understand Intellectual Property Rights and apply knowledge related to patents, copyrights and trademarks. (L2, L5)

8STAT5041: PROBABILITY AND STATISTICS

CO1: Represent data, apply/formulate the concepts and theories of measures of central tendency and Dispersion in the functional areas of business and research. (L3)

CO2: To forecast the data based on past data, to analyze the relationship and the degree of association between two variables. (L4)

CO3: To solve the problems by applying probability laws and theoretical results. (L3)

CO4: To understand the role of sampling techniques when large amounts of data are involved. (L2)

CO5: Explain the role of probability in hypothesis testing and describe issues related to interpreting statistical significance. (L3)

8CSAI6131 : ARTIFICIAL INTELLIGENCE AND LAB

CO1: Gain knowledge on task domains and problem spaces. (L2,L3)

CO2: Analyze problems and solve using searching techniques. (L4, L6)

CO3: Build problem solving agents and evaluate performance. (L5,L6)

CO4: Gain knowledge on various learning systems and apply best suited one to real world problems. (L3,L4,L5)

CO5: Gain knowledge on expert systems and design solutions for real life problems. (L2,L6)

GPSBD1111: Communicative Skills in Digital Era

CO1: Identify the differences in Listening and Hearing. (L1)

CO2: Express themselves in different professional settings. (L2)

CO3: Use the different methods of reading and share their reading experience (L3)

CO4: Draft letters, E-mails using appropriate tone and structure. (L3)

CO5: Express ideas clearly and concisely within paragraphs, avoiding unnecessary repetition or ambiguity. (L3)

GPSBD1172: Career Readiness Program-I

CO1: Understand the use of calculation techniques for quick calculations and manipulation of numbers. (L2)

CO2: Understand the concepts of percentages, exponents, ratios, proportions, and averages for computing simple, compound interests and calculating class /set relationships. (L2)

CO3: Understand linear and quadratic equations through equation formation methods, and grasp concepts of averages, mixtures, and alligations to analyze class or set relationships. (L2)

CO4: Understand how to solve problems of various arrangements (Circular and Linear). (L2)

CO5: Understand how to analyze the sufficiency of data and interpret its specific components by solving problems. (L2)

CO6: Understand the four types of logical statements to solve puzzles based on syllogisms and apply the concepts of Venn diagrams to solve puzzles using set theory. (L2)

CO7: Integrate industry trends and personal branding to optimize LinkedIn profiles, highlighting expertise and unique qualities.(L4)

CO8: Demonstrate advanced interpersonal communication skills, embodying effective collaboration and fostering stronger relationships and teamwork.(L3)

CO9: Implement effective strategies to draft well-structured resumes, profiles, cover letters, and professional portfolios. (L3)

CO10: Apply techniques to prioritize tasks, set boundaries, and manage stress. (L3)

CO11: Develop and deliver persuasive presentations that efficiently communicate ideas to the audience. (L3)

Second Semester

8CSDS6241 : Machine Learning Techniques and Lab

- CO1:** Explain the fundamental concepts of data handling, pre-processing, and visualization techniques for preparing datasets. (L2)
- CO2:** Apply various regression and classification algorithms to build predictive models using Python libraries. (L3)
- CO3:** Analyze clustering algorithms and evaluate their performance using distance metrics and cluster validation methods. (L4)
- CO4:** Evaluate the performance of machine learning models using statistical and cross-validation metrics. (L5)
- CO5:** Design and implement forecasting and reinforcement learning models for decision-making and optimization problems. (L6)

8CSPL6421: ADVANCED JAVA PROGRAMMING AND LAB

- CO1:** Integrate SQL with Java for database applications. (L3)
- CO2:** Apply socket programming to communicate over the network. (L3)
- CO3:** Implement client and server interaction using servlet programming. (L3)
- CO4:** Design dynamic web pages using JSP and Java Beans. (L4)
- CO5:** Apply MVC concept for separating business logic, presentation and data. (L3)

8CSGC6241: Software Project Management

- CO1:** Identify and plan project management activities and develop Statement of Work. (L3, L4)
- CO2:** Estimate software costs, schedule projects and evaluate project metrics (L3, L4, L5)
- CO3:** Identify risks, manage software configurations, use software tools for project management (L3, L4)
- CO4:** Analyze the staff requirements of project, motivation, safety, professional and ethical concerns (L3, L4)
- CO5:** Analyze project performance, identify concerns, evaluate and control the projects (L4, L5)

8CSDS6411: Generative AI & LLMs

CO1: Explain the concepts of Generative AI, transformer models, and Large Language Models including embeddings, tokenisation, and attention mechanisms. (L1, L2)

CO2: Apply prompt engineering strategies, RAG techniques, semantic search, and fine-tuning methods for solving AI-based problems. (L3, L4)

CO3: Develop Generative AI applications for text generation, summarisation, question answering, code generation, and image processing tasks. (L3, L4, L5)

CO4: Analyze ethical, fairness, privacy, and explainability issues associated with Generative AI and propose responsible AI solutions. (L3, L4)

CO5: Evaluate advanced AI systems including AI agents, autonomous workflows, LLMOps, and Human-AI interaction models for real-world applications. (L4, L5)

8CSAI6161: Natural Language Processing Techniques

CO1: Describe fundamentals of computers and the basics of linguistics to understand various applications of language studies (L1, L2, L3)

CO2: Show sensitivity to linguistic phenomena and an ability to model them with formal grammars (L2, L3, L4)

CO3: Able to manipulate probabilities, construct statistical models over strings and trees, and estimate parameters using supervised and unsupervised training methods (L1, L3, L4)

CO4: To explore semantics of words and semantic role labeling of sentences (L2, L3, L4)

CO5: To know the applications of computers in linguistics and language studies (L1, L2, L4)

8MATH1051: Mathematical Foundation for AI & ML

CO1: Solve and apply some basic concepts of sets, groups and its properties, Ring theory and Field in AI and ML

CO2: Solve systems of linear equations and perform matrix operations relevant to data science applications.

CO3: Solve and apply the concepts of Vector space and Linear transformation in AI and ML

CO4: Implement multivariate techniques such as correlation analysis, PCA, and regression for data interpretation.

CO5: Apply and explain fundamental optimization techniques used in machine learning models.

8CSAI6142: Internet Of Things and lab

- CO1:** Explain about IoT and its network architecture. (L2)
- CO2:** Explain IoT things and various access technologies. (L2)
- CO3:** Analyze and optimize the IP for IoT. (L4)
- CO4:** Apply the data analytics tools for analyzing the IoT data. (L3)
- CO5:** Explain and analyze the risk factors of IoT. (L4)

8CSDS5341 : Predictive Analytics and Data Visualization

- CO1:** Explain fundamental concepts of data analytics and data-driven decision-making processes.(L2)
- CO2:** Apply predictive analytics methods including time series forecasting and interpret the results for decision-making.(L3)
- CO3:** Demonstrate Clustering and Factor analysis Techniques.(L3)
- CO4:** Demonstrate the principles of business intelligence and data visualization(L3)
- CO5:** Design effective data visualizations and dashboards.(L4)

GPSBT1041 - Design Thinking

- CO1:** Implement design thinking methodologies to identify and address complex problems.(L3)
- CO2:** Empathize with users and stakeholders to understand their needs effectively.(L2)
- CO3:** Generate innovative ideas by engaging in ideation and prototyping processes(L5)
- CO4:** Effectively communicate solutions using pitching techniques. (L4)

GPSLA1061:Career Readiness Program -II

- CO1:** Understand the concept of work-time-efficiency and distance-time-speed to solve problems. (L2)
- CO2:** Understand how to solve problems of permutations and probability. (L2)
- CO3:** Understand the perimeter and area of 2-dimensional and 3-dimensional objects. (L2)
- CO4:** Understand the laws of surds and indices to solve problems. (L2)
- CO5:** Understand the conceptual knowledge of blood relationships. (L2)
- CO6:** Understand the concepts of coding and decoding to discern specific patterns from given data to solve problems. (L2)

- CO7:** Demonstrate proper workplace etiquette and cultural sensitivity in diverse professional settings. (L3)
- CO8:** Demonstrate competence in participating effectively in Interviews and Group Discussions by implementing various strategies. (L3)
- CO9:** Employ and demonstrate comprehension of team dynamics and cultivate skills in team management (L3)