



## Department of Computer Science & Engineering

### Course Outcomes

#### B. Tech. Fifth Semester (CBCS)

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| <b>Course Name: Artificial Intelligence</b>               |  |
| <b>Code: BTECH_CSE-501T</b>                               |  |
| <b>At the end of the course student will be able to :</b> |  |
| <b>CO1</b>  | Demonstrate knowledge of the building blocks of AI as presented in terms of intelligent agents.  |
| <b>CO2</b>  | Analyze and formalize the problem as a state space, graph, design heuristics and select amongst different search or game based techniques to solve them. |
| <b>CO3</b>  | Explain basic issues of knowledge representation   |
| <b>CO4</b>  | Formulate and solve problems with uncertain information using Bayesian approaches.   |
| <b>CO5</b>  | Attain the capability to represent various real life problem domains using logic based techniques  |

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| <b>Course Name: Design and Analysis of Algorithms</b>     |   |
| <b>Code: BTECH_CSE-502T</b>                               |   |
| <b>At the end of the course student will be able to :</b> |   |
| <b>CO1</b>  | Illustrate different approaches for analysis and design of efficient algorithms and Analyze performance of various algorithms using asymptotic notations. |
| <b>CO2</b>  | Determine and Apply various divide & conquer strategies and greedy approaches for solving a given computational problem                                   |
| <b>CO3</b>  | Demonstrate and Solve various realtime problems using the concepts of dynamic programming   |
| <b>CO4</b>  | Use backtracking and graph traversal techniques for solving real-world problems   |
| <b>CO5</b>  | Classify the NP-hard and NP-complete problems   |

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| <b>Course Name: Design and Analysis of Algorithms LAB</b> |  |
| <b>Code: BTECH_CSE-502P</b>                               |  |
| <b>At the end of the course student will be able to :</b> |  |
| <b>CO1</b>  | Calculate the time complexity of algorithm.                                    |
| <b>CO2</b>  | Sort the given numbers using various sorting algorithms.                       |
| <b>CO3</b>  | Develop programs for the problems using Divide and Conquer and greedy methods. |
| <b>CO4</b>  | Develop programs for the problems using Dynamic programming.                   |
| <b>CO5</b>  | Develop programs for the problems using Backtracking.                          |

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| <b>Course Name: Software Engineering and Project Management</b> |  |
| <b>Code: BTECH_CSE-503T</b>                                     |  |
| <b>At the end of the course student will be able to :</b>       |  |
| <b>CO1</b>  | Explain software engineering methods, practices, process models and application,   |
| <b>CO2</b>  | Analyse various software engineering life cycle models and apply methods for design and development of software projects.      |
| <b>CO3</b>  | Analyze and extract requirements for product and translate these into a documented design using different modeling techniques. |
| <b>CO4</b>  | Explain and apply software testing methods and types, And to Explain debugging concept with various testing methods,           |
| <b>CO5</b>  | Identify and apply the principles, processes and main knowledge areas for Software Project Management                          |

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| <b>Course Name: Elective 1: TCP/IP</b>                    |  |
| <b>Code: BTECH_CSE-504.1T</b>                             |  |
| <b>At the end of the course student will be able to :</b> |  |
| <b>CO1</b>  | Enumerate the layers of the TCP/IP model.  |
| <b>CO2</b>  | Analyze the services of TCP/IP protocol and be able to deal with its layers. Also the concepts of IP addressing                |
| <b>CO3</b>  | Acquire the knowledge of routing protocols   |
| <b>CO4</b>  | Familiarize students with the basic computer network protocols, and how they can be used to help develop and execute networks. |
| <b>CO5</b>  | Create the solution for basic issues of Internet Mechanism and its security.   |

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| <b>Course Name: Elective 1: Design Patterns</b>           |   |
| <b>Code: BTECH_CSE-504.2T</b>                             |   |
| <b>At the end of the course student will be able to :</b> |   |
| <b>CO1</b>  | Explain common design patterns in the context of incremental/iterative development.   |
| <b>CO2</b>  | Explain well-known Creational design patterns.  |
| <b>CO3</b>  | Distinguish between different types of structural design patterns.  |
| <b>CO4</b>  | Describe the appropriate design patterns, purpose and methods and use of Behavioural Design Pattern to solve object oriented design problems. |
| <b>CO5</b>  | Demonstrate and Explaining of Behavioural and other useful design patterns  |

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| <b>Course Name: Elective 1: Data Warehousing and Mining</b> |  |
| <b>Code: BTECH_CSE-504.3T</b>                               |  |
| <b>At the end of the course student will be able to :</b>   |  |
| <b>CO1</b>  | Explain the basic concepts of Data Warehouse and Data Mining techniques      |
| <b>CO2</b>  | Create a data warehouse and to process raw data .                            |
| <b>CO3</b>  | Apply basic classification, clustering on a set of data.                     |
| <b>CO4</b>  | Identify frequent data items and to apply association rule on a set of data. |
| <b>CO5</b>  | Explain recent trends of data mining such as web mining.                     |

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| <b>Course Name: Professional Skills Lab I</b>             |   |
| <b>Code: BTECH_CSE-505P</b>                               |   |
| <b>At the end of the course student will be able to :</b> |   |
| <b>CO1</b>  | List various tags in HTML , DHTML and use these, apply Cascaded style sheet to create web page. |
| <b>CO2</b>  | Explain and evaluate web application architecture, technologies and frameworks                  |
| <b>CO3</b>  | Apply the knowledge of web technology in developing web applications                            |
| <b>CO4</b>  | Develop an interactive web applications using ASP.NET   |
| <b>CO5</b>  | Evaluate different solutions in field of web application development                            |

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| <b>Course Name: Effective Technical Communication</b>     |  |
| <b>Code: BTECH_CSE-506T</b>                               |  |
| <b>At the end of the course student will be able to :</b> |  |
| <b>CO1</b>  | Acquire knowledge of structure of language.  |
| <b>CO2</b>  | Describe face competitive exams and the interview process and can become employable.                           |
| <b>CO3</b>  | Develop business writing skills.   |
| <b>CO4</b>  | Become familiar with technology enabled communication and can develop technical and scientific writing skills. |

## B. Tech. Sixth Semester (CBCS)

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| <b>Course Name: Compiler Design</b>                       |  |
| <b>Code: BTECH_CSE-601T</b>                               |  |
| <b>At the end of the course student will be able to :</b> |  |
| <b>CO1</b>  | Define the Compiler along with phases and basic programs in LEX.                     |
| <b>CO2</b>  | Develop programs for various kinds of the Parsers.                                   |
| <b>CO3</b>  | Develop simple programs related to Type Checking, Parameter Passing and Overloading. |
| <b>CO4</b>  | Implement the concepts of Code Optimizations and Code Generations.                   |
| <b>CO5</b>  | Illustrate the Case Studies of Object-Oriented Compilers.                            |

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| <b>Course Name: Compiler Design Lab</b>                   |   |
| <b>Code: BTECH_CSE-601P</b>                               |   |
| <b>At the end of the course student will be able to :</b> |   |
| <b>CO1</b>  | Develop scanner and parser from formal specification.   |
| <b>CO2</b>  | Develop top down and bottom up parsing tables using Predictive parsing, SLR and LR Parsing techniques.        |
| <b>CO3</b>  | Apply the knowledge of YACC to syntax directed translations for generating intermediate code -3 address code. |
| <b>CO4</b>  | Build a code generator using different intermediate codes and optimize the target code.                       |
| <b>CO5</b>  | Create scanner and parser from formal specification   |

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| <b>Course Name: Elective 2: Machine Learning</b>          |  |
| <b>Code: BTECH_CSE-602.1T</b>                             |  |
| <b>At the end of the course student will be able to :</b> |  |
| <b>CO1</b>  | Explain basics of Machine Learning Techniques..                          |
| <b>CO2</b>  | Explain different types of Regression Techniques.                        |
| <b>CO3</b>  | Apply classification techniques.   |
| <b>CO4</b>  | Apply unsupervised machine learning techniques.                          |
| <b>CO5</b>  | Apply & evaluate the machine learning techniques to real world problems. |

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| <b>Course Name:Elective 2: Internet of Things</b>         |   |
| <b>Code: BTECH_CSE-602.2T</b>                             |   |
| <b>At the end of the course student will be able to :</b> |   |
| <b>CO1</b>  | Explain the vision of IoT from a global context.                |
| <b>CO2</b>  | Explain M2M to IoT — A Basic Perspective                        |
| <b>CO3</b>  | Use of Devices, Gateways and Data Management in IoT             |
| <b>CO4</b>  | Explain the Internet of Things Privacy, Security and Governance |
| <b>CO5</b>  | Implement basic IoT applications on embedded platform           |

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| <b>Course Name:Elective 2: Cloud Computing</b>            |   |
| <b>Code: BTECH_CSE-602.3T</b>                             |   |
| <b>At the end of the course student will be able to :</b> |   |
| <b>CO1</b>  | Explain the different Cloud Computing environment                           |
| <b>CO2</b>  | Analyze virtualization technology and install virtualization software       |
| <b>CO3</b>  | Use appropriate data storage technique on Cloud, based on Cloud application |
| <b>CO4</b>  | Apply security in cloud applications  |
| <b>CO5</b>  | Use advance techniques in Cloud Computing                                   |

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| <b>Course Name:Elective 3: Data Science</b>               |   |
| <b>Code: BTECH_CSE-603.1T</b>                             |   |
| <b>At the end of the course student will be able to :</b> |   |
| <b>CO1</b>  | Explaining the significance of exploratory data analysis in Data Science.               |
| <b>CO2</b>  | Demonstrate the usage of Random Sampling and bias in a given dataset.                   |
| <b>CO3</b>  | Analyse various Statistical Experiments through various types popular Testing methods,  |
| <b>CO4</b>  | Design and analysis of regression techniques to estimate outcomes and detect anomalies. |
| <b>CO5</b>  | Implement classification Techniques.  |

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| <b>Course Name: Elective 3: Distributed Operating Systems</b> |   |
| <b>Code: BTECH-CSE-603.2T</b>                                 |   |
| <b>At the end of the course student will be able to :</b>     |   |
| <b>CO1</b>  | Describe the principles, architectures, algorithms and programming models used in distributed systems.                                      |
| <b>CO2</b>  | Explain the core concepts of distributed systems.   |
| <b>CO3</b>  | Design and implement sample distributed systems, using different algorithm.   |
| <b>CO4</b>  | Explain the Distributed File System, Architecture, and Mechanism.   |
| <b>CO5</b>  | Analyze the Distributed Scheduling, Issues in Load Distributing, components of a Load Distributing Algorithm, Load Distributing Algorithms. |

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| <b>Course Name: Elective 3: Human Computer Interaction</b> |   |
| <b>Code: BTECH-CSE-603.3T</b>                              |   |
| <b>At the end of the course student will be able to :</b>  |   |
| <b>CO1</b>   | Explain the Importance of user Interface                      |
| <b>CO2</b>   | Design effective dialog for HCI                               |
| <b>CO3</b>   | Develop navigation panes in windows                           |
| <b>CO4</b>   | Explain HCI using software tools, prototypes and golden rules |
| <b>CO5</b>   | Analyse and apply various evaluation techniques.              |

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| <b>Course Name: Open Elective 1: Linux Fundamentals</b>   |  |
| <b>Code: BTECH-CSE-604.1T</b>                             |  |
| <b>At the end of the course student will be able to :</b> |  |
| <b>CO1</b>  | Explain Linux Architecture, different Linux installation and Linux commands.                               |
| <b>CO2</b>  | Effectively use Linux Environment using shell, file system, scripts, filters and program development tools |
| <b>CO3</b>  | Create user, group management , package management through commands  |
| <b>CO4</b>  | Implement storage management and failure recovery through commands.  |
| <b>CO5</b>  | Automate tasks and write simple programs using shell scripts.  |

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| <b>Course Name: Open Elective 1: Android Application Development</b> |   |
| <b>Code: BTECH-CSE-604.2T</b>  |   |
| <b>At the end of the course student will be able to :</b>            |   |
| <b>CO1</b>   | Describe the components and structure of a mobile development framework                               |
| <b>CO2</b>   | Explain the specific requirements, possibilities and challenges when developing for a mobile context. |
| <b>CO3</b>   | Apply Java programming concepts to Android application development                                    |
| <b>CO4</b>   | Design and develop user Interfaces for the Android platform   |
| <b>CO5</b>   | Explain how to publish an application to the Android Market   |

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| <b>Course Name:Open Elective 1: Block-chain Technologies</b> |  |
| <b>Code: BTECH-CSE-604.3T</b>                                |  |
| <b>At the end of the course student will be able to :</b>    |  |
| <b>CO1</b>   | Explain emerging abstract models for Block chain Technology  |
| <b>CO2</b>   | Analyse the concept of urrency and mathematical background behind it   |
| <b>CO3</b>   | Apply the tools for Explaining the background of bitcoins  |
| <b>CO4</b>   | Identify major research challenges and technical gaps existing between theory and practice in crypto currency domain |
| <b>CO5</b>   | Explain of latest advances and its applications in Block Chain Technology  |

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| <b>Course Name:Intellectual Property Rights (Audit Course)</b> |  |
| <b>Code: BTECH_CSE-609T</b>                                    |  |
| <b>At the end of the course student will be able to :</b>      |  |
| <b>CO1</b>   | Explain fundamental aspects of Intellectual property Rights.   |
| <b>CO2</b>   | Apply knowledge on patents, patent regime in India and abroad and registration aspects   |
| <b>CO3</b>   | Be capable of getting copyrights and its related rights and registration aspects   |
| <b>CO4</b>   | Be capable of getting trademarks and registration aspects  |
| <b>CO5</b>   | Apply knowledge on Design, Geographical Indication (GI), Plant Variety and Layout Design Protection and their registration aspects |