

**SEM 1
Theory**

| Sr.No. | Subject Name | Subject code | Course Outcome No | Course outcome |
|--------|-------------------------------------|--------------|-------------------|--|
| 1 | Design and Analysis Algorithms | 410241 | CO1 | Formulate the problem |
| | | | CO2 | Analyze the asymptotic performance of algorithms |
| | | | CO3 | Decide and apply algorithmic strategies to solve given problem |
| | | | CO4 | Find optimal solution by applying various methods |
| | | | CO5 | Analyze and Apply Scheduling and Sorting Algorithms. |
| | | | CO6 | Solve problems for multi-core or distributed or concurrent environments |
| 2 | Machine Learning | 410242 | CO1 | Identify the needs and challenges of machine learning for real time applications. |
| | | | CO2 | Apply various data pre-processing techniques to simplify and speed up machine learning algorithms. |
| | | | CO3 | Select and apply appropriately supervised machine learning algorithms for real time applications. |
| | | | CO4 | Implement variants of multi-class classifier and measure its performance. CO5 :Compare and contrast different clustering algorithms. |
| | | | CO5 | Compare and contrast different clustering algorithms. |
| | | | CO6 | Design a neural network for solving engineering problems. |
| 3 | Blockchain Technology | 410243 | CO1 | Interpret the fundamentals and basic concepts in Blockchain |
| | | | CO2 | Compare the working of different blockchain platforms |
| | | | CO3 | Use Crypto wallet for cryptocurrency based transactions |
| | | | CO4 | Analyze the importance of blockchain in finding the solution to the real-world problems. |
| | | | CO5 | Illustrate the Ethereum public block chain platform |
| | | | CO6 | Identify relative application where block chain technology can be effectively used and implemented. |
| 4 | Object Oriented Modeling And Design | 410244D | CO1 | Describe the concepts of object-oriented and basic class modelling |
| | | | CO2 | Draw class diagrams, sequence diagrams and interaction diagrams to solve problems |
| | | | CO3 | Choose and apply a befitting design pattern for the given problem |
| | | | CO4 | To Analyze applications, architectural Styles & software control strategies |
| | | | CO5 | To develop Class design Models & choose Legacy Systems. |
| | | | CO6 | To Understand Design Patterns |

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| 5 | Software Testing And Quality Assurance | 410245D | CO1 | Describe fundamental concepts in software testing such as manual testing, automation testing and software quality assurance. |
| | | | CO2 | Design and Develop project test plan, design test cases, test data, and conduct test operations |
| | | | CO3 | Apply recent automation tool for various software testing for testing software. |
| | | | CO4 | Apply different approaches of quality management, assurance, and quality standard to software system |
| | | | CO5 | Apply and analyze effectiveness Software Quality Tools |
| | | | CO6 | Apply tools necessary for efficient testing framework. |
| 6 | Practical Laboratory Practice III | 410246 | CO1 | Apply preprocessing techniques on datasets. |
| | | | CO2 | Implement and evaluate linear regression and random forest regression models |
| | | | CO3 | Apply and evaluate classification and clustering techniques |
| | | | CO4 | Analyze performance of an algorithm. |
| | | | CO5 | Implement an algorithm that follows one of the following algorithm design strategies: divide and conquer, greedy, dynamic programming, backtracking, branch and bound. |
| | | | CO6 | Interpret the basic concepts in Blockchain technology and its applications |
| 7 | Laboratory Pra | 410247 | CO1 | Apply android application development for solving real life problems |
| | | | CO2 | Design and develop system using various multimedia components |
| | | | CO3 | Identify various vulnerabilities and demonstrate using various tools |
| | | | CO4 | Apply information retrieval tools for natural language processing |
| | | | CO5 | Develop an application using open source GPU programming languages |
| | | | CO6 | Apply software testing tools to perform automated testing |
| 8 | Project Stage | 410248 | CO1 | Solve real life problems by applying knowledge. |
| | | | CO2 | Analyze alternative approaches, apply and use most appropriate one for feasible solution. |
| | | | CO3 | Write precise reports and technical documents in a nutshell |
| | | | CO4 | Participate effectively in multi-disciplinary and heterogeneous teams exhibiting team work |
| | | | CO5 | Inter-personal relationships, conflict management and leadership quality. |
| 9 | Audit Course 7 | 410249 | CO1 | To acquire additional knowledge and skill. |
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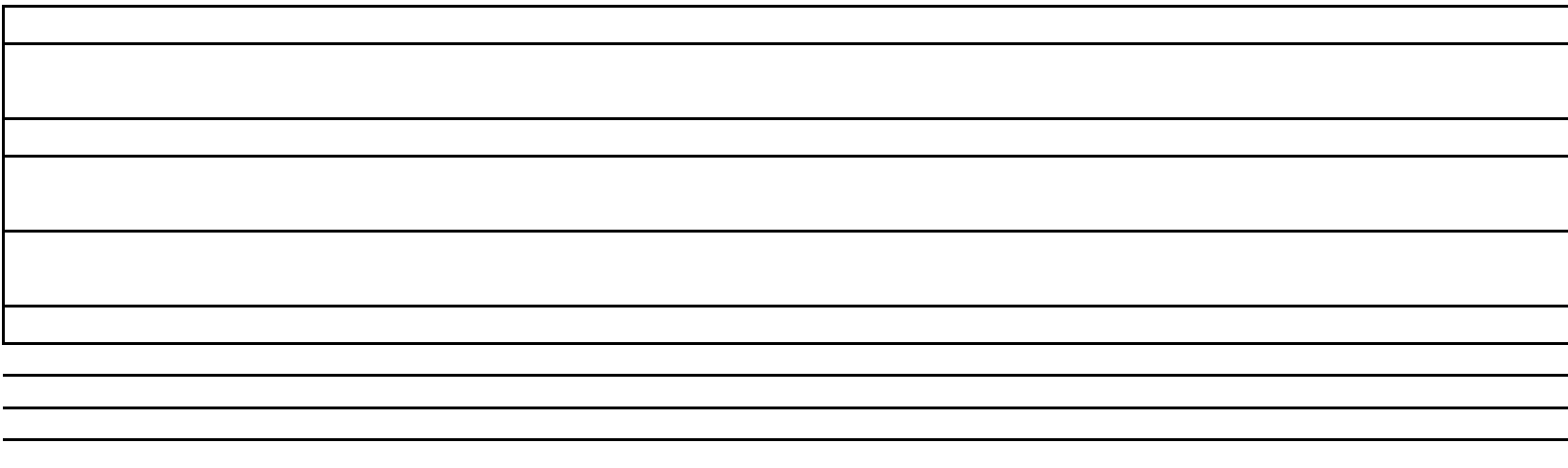
**SEM 2
Theory**

| Sr.No | Subject Name | Subject code | Matched POs(out of 12) | Course outcome |
|-------|----------------------------|--------------|------------------------|---|
| 1 | High Performance Computing | 410250 | CO1 | Understand various Parallel Paradigm |
| | | | CO2 | Design and Develop an efficient parallel algorithm to solve given problem |
| | | | CO3 | Illustrate data communication operations on various parallel architecture |
| | | | CO4 | Analyze and measure performance of modern parallel computing systems |
| | | | CO5 | Apply CUDA architecture for parallel programming. |
| | | | CO6 | Analyze the performance of HPC applications |
| 2 | Deep Learning | 410251 | CO1 | Understand the basics of Deep Learning and apply the tools to implement deep learning applications |
| | | | CO2 | Evaluate the performance of deep learning models (e.g., with respect to the bias-variance trade-off, overfitting and underfitting, estimation of test error). |
| | | | CO3 | To apply the technique of Convolution (CNN) and Recurrent Neural Network (RNN) for implementing Deep Learning models |
| | | | CO4 | To implement and apply deep generative models. |
| | | | CO5 | Construct and apply on-policy reinforcement learning algorithms |
| | | | CO6 | To Understand Reinforcement Learning Process |
| 3 | Software Defined Networks | 410252D | CO1 | Interpret the need of Software Defined networking solutions. |
| | | | CO2 | Analyze different methodologies for sustainable Software Defined Networkingsolutions. CO3: Select best practices for design, deploy and troubleshoot of next generation networks. |
| | | | CO3 | Develop programmability of network elements. |
| | | | CO4 | Develop programmability of network elements. |
| | | | CO5 | Demonstrate virtualization and SDN Controllers using Open Flow protocol |
| | | | CO6 | Design and develop various applications of SDN |
| 4 | Soft Computing | 410253B | CO1 | Understand requirement of soft computing and be aware of various soft computing techniques. |
| | | | CO2 | Understand Artificial Neural Network and its characteristics and implement ANN algorithms. |
| | | | CO3 | Understand and Implement Evolutionary Computing Techniques. |
| | | | CO4 | Understand the Fuzzy logic and Implement fuzzy algorithms for solving real life problems. |
| | | | CO5 | Apply knowledge of Genetic algorithms for problem solving. |
| | | | CO6 | Develop hybrid systems for problem solving. |

| | Practical | | | |
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| 5 | Laboratory Practice V | 410254 | CO1 | Analyze and measure performance of sequential and parallel algorithms. |
| | | | CO2 | Design and Implement solutions for multicore/Distributed/parallel environment. |
| | | | CO3 | Identify and apply the suitable algorithms to solve AI/ML problems.andclassification. |
| | | | CO4 | Apply the technique of Deep Neural network for implementing Linear regression |
| | | | CO5 | Apply the technique of Convolution (CNN) for implementing Deep Learning models. |
| | | | CO6 | Design and develop Recurrent Neural Network (RNN) for prediction. |
| 6 | Laboratory Pra | 410255 | CO1 | Apply basic principles of elective subjects to problem solving and modeling. |
| | | | CO2 | Use tools and techniques in the area of software development to build mini projects |
| | | | CO3 | Design and develop applications on subjects of their choice. |
| | | | CO4 | Generate and manage deployment, administration & security. |
| 7 | Project Stage II | 410256 | CO1 | Show evidence of independent investigation |
| | | | CO2 | Critically analyze the results and their interpretation. |
| | | | CO3 | Report and present the original results in an orderly way and placing the open questions in the rightperspective. |
| | | | CO4 | Link techniques and results from literature as well as actual research and future research lines withthe research. |
| | | | CO5 | Appreciate practical implications and constraints of the specialist subject |
| 8 | Audit Course 8 | 410257 | CO1 | Describe the human centered design process and usability engineering process and theirroles in system design and development. |
| | | | CO2 | Discuss usability design guidelines, their foundations, assumptions, advantages, andweaknesses. |
| | | | CO3 | Design a user interface based on analysis of human needs and prepare a prototype system. |
| | | | CO4 | Assess user interfaces using different usability engineering techniques. |
| | | | CO5 | Present the design decisions |



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