| | | | | Computer Engineering |
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| Sem | Course Code | Course Name | CO Number | Course Outcome Statements |
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| | | | CSC7011 | Describe the concept of discrete time signal and systems and use signal processing techniques. |
| | | | CSC7012 | Implement Digital Signal Transform techniques DFT and FFT. |
| | | | CSC7013 | Explain process of image digitization and different image file types and formats. |
| | | | CSC7014 | Use the enhancement techniques for digital Image Processing. |
| | | | CSC7015 | Differentiate between the advantages and disadvantages of different edge detection techniques. |
| VII | CSC701 | Digital Signal & Image Processing | CSC7016 | Explore research trends in the area of digital signal and image processing or Compare and apply different digital signal and image processing techniques. |
| | | | CSC7021 | Identify basic concepts and principles in mobile communication & computing, cellular architecture |
| | | | CSC7022 | Describe the components and functioning of mobile networking |
| | | | CSC7023 | Classify variety of security techniques in mobile network. |
| | | | CSC7024 | Analyze the concepts of WLAN |
| | | Mobile Communication & Computing | CSC7025 | Describe and apply the concepts of mobility management |
| VII | CSC702 | | CSC7026 | Describe Long Term Evolution (LTE) architecture and its interfaces. |
| | | | CSC7031 | Identify the various characteristics of AI and SC techniques |
| | | Artificial Intelligence & Soft Computing | CSC7032 | Identify and apply the most suitable search strategy to design problem solving agent |
| VII | CSC703 | | CSC7033 | Represent a natural language description as statements in logic and apply the inference rules to design knowledge-based agent and planning agent |
| | | | CSC7034 | Construct supervised and unsupervised ANN for real world applications |
| | | | CSC7035 | Design fuzzy controller system |
| | | | CSC7036 | Apply Hybrid approach for expert system design |
| | | | CSDLO70321 | Identify the key issues in big data management and its associated applications for business decisions and strategy. |

| | | | CSDLO70322 | Develop problem solving and critical thinking skills in fundamental enabling techniques like Hadoop, MapReduce |
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| | | | CSDLO70323 | Apply NoSQL architectural patterns in big data analytics to create, manage, store, query various forms of Big Data |
| | | | CSDLO70324 | Analyze and apply data mining techniques in various applications of Big Data. |
| | | | CSDLO70325 | Adapt adequate perspectives of big data analytics in various applications |
| VII | CSDLO703 1 | Big Data & Analytics | CSDLO70326 | Design business models and solve complex real-world problems in various applications like recommender systems, social media applications, health and medical systems, etc. |
| | | | CSDLO70311 | CSDLO70311 Classify Cyber-attacks and vulnerabilities |
| | | | CSDLO70312 | Describe operating systems and programs vulnerabilities and protection mechanism |
| | | | CSDLO70313 | Describe Web application and WIFI vulnerabilities and protection mechanism |
| | | | CSDLO70314 | Discuss legal and ethical issues associated with cyber crime |
| | | Advance System Security & Digital Forensics | CSDLO70315 | Illustrate Access control policies and control mechanism |
| VII | CSDLO7 031 | | CSDLO70316 | Use different forensics tools to acquire and analyze compromised data. |
| | | | ILO70151 | Describe the theoretical working of simplex method |
| | | | ILO70152 | Distinguish between linear programming and its dual |
| | | | ILO70153 | Perform sensitivity analysis to determine the direction and magnitude of change of a model's optimal solution as the data change. |
| | | | ILO70154 | Solve the transportation, assignment and Game theory problems using linear programming. |
| VII | ILO7015 | Operation Research | ILO70155 | Solve the problems using network models like the shortest path, minimum spanning tree, and maximum flow problems |
| | | | ILO70156 | Explain the applications of integer programming, queuing model, inventory models and Simulation to compute important performance measures |
| | | | ILO70161 | Understand the concept of cybercrime and cyber offences. |
| | | | ILO70162 | Identify and classify cybercrimes to estimate their impact on society and mitigate the risks involved. |
| | | | ILO70163 | Understand the various tools used by cyber criminals. |
| | | | ILO70164 | Identify and interpret the various aspects of Cyber laws. |

| VII | ILO7016 | Cyber Security and Laws | ILO70165 | Apply and Interpret the Indian IT Act 2008 and its latest amendments. |
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|     |         |                         | ILO70166 | Apply Information Security Standards compliance during software design and development. |
| VII | ILO7013 | Management Information System | ILO70131 | Explain the importance of information systems and the impact of information technology on an organization to transform business. |
|     |         |                         | ILO70132 | Identify the principal tools and technologies for storing and accessing information in an organization to improve business performance and decision making. |
|     |         |                         | ILO70133 | Describe ethical issues related to information technology, potential threat to the privacy of the data and control measures that organizations can use to protect their information resources. |
|     |         |                         | ILO70134 | Identify current and emerging technologies and apply them to today's businesses |
|     |         |                         | ILO70135 | Describe use of the Internet and World Wide Web to provide a global platform for e-business, business mobility and communications, collaboration, and cloud computing. |
|     |         |                         | ILO70136 | Explain the types of support that information systems can provide for each functional area of the organization. |
| VII | CSL701  | Digital Signal & Image Processing Lab | CSL7011 | Demonstrate process of signal conversion. |
|     |         |                         | CSL7012 | Implement Discrete Convolution and Discrete Correlation. |
|     |         |                         | CSL7013 | Implement the Discrete Fourier Transform and the Fast Fourier Transform. |
|     |         |                         | CSL7014 | Demonstrate point operations in digital image processing. |
|     |         |                         | CSL7015 | Illustrate and implement image Enhancement techniques. |
|     |         |                         | CSL7016 | Demonstrate Image Segmentation techniques. |
| VII | CSL702  | Mobile App. Development. Tech. Lab | CSL7021 | To develop and demonstrate mobile application using various tools |
|     |         |                         | CSL7022 | Students will articulate the knowledge of GSM, CDMA & Bluetooth technologies and demonstrate it. |
|     |         |                         | CSL7023 | Students will able to carry out simulation of frequency reuse, hidden terminal problem. |
|     |         |                         | CSL7024 | To develop security algorithm for mobile communication network. |
|     |         |                         | CSL7025 | To demonstrate simulation and compare the performance of wireless LAN |
|     |         |                         | CSL7026 | To implement and demonstrate mobile node discovery and route maintains. |

| | | | CSL7031 | Formulate PEAS description for the given intelligent agent. |
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| | | | CSL7032 | Write a program in PROLOG to represent natural language description as statements in Logic and apply inference rules to it |
| VII | CSL703 | Artificial Intelligence & Soft Computing Lab | CSL7033 | Apply suitable search techniques to design a problem-solving agent. |
| | | | CSL7034 | Implement Supervised and unsupervised neural network learning rules. |
| | | | CSL7035 | Design a fuzzy controller system. |
| | | | CSL7036 | Design an application using AISC techniques |
| VII | CSL704 | Computational Lab-I | CSL7041 | Demonstrate program and operating system vulnerabilities |
| | | | CSL7042 | Implement network security |
| | | | CSL7043 | Use and analyze different security tools to detect web application and browservulnerabilities |
| | | | CSL7044 | Use and explore forensics tools for data acquisition, duplication and analysis |
| | | | CSL7045 | Use different tools to secure mobile device |
| | | | CSL7046 | Use and explore Authentication and access control mechanism |
| VII | CPP701 | Project-I | CS9051 | Identify the customer requirements and define problem. |
| | | | CS9052 | Define objective, outcomes and scope of the project. |
| | | | CS9053 | Design different modules of the system and identify tools and techniques required to implement the modules. |
| | | | CS9054 | Implement the proposed design partly and present the work done effectively group wise. |