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| P1 | Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions. |
| P2 | Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program’s discipline. |
| P3 | Communicate effectively in a variety of professional contexts. |
| P4 | Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles. |
| P5 | Function effectively as a member or leader of a team engaged in activities appropriate to the program’s discipline. |
| P6 | Apply computer science theory and software development fundamentals to produce computing-based solutions. |

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| C1 | Explain how AI impacts society |
| C2 | Apply AI methods to perform practical tasks |
| C3 | Synthesize a simple AI system |
| C4 | Evaluate different AI approaches to solve a problem |
| C5 | Explain the basic principles of the data mining process. |
| C6 | Prepare data for mining and exploration |
| C7 | Use data mining techniques and modern tools to discover trends and patterns in realistic datasets |
| C8 | Evaluate different data mining models/techniques with respect to their performance accuracy. |
| C9 | Function on teams and communicate effectively in written and oral forms. |
| C10 | Explain techniques of mathematical models. |
| C11 | Design models for simple and complex problems. |
| C12 | Model discrete event systems. |
| C13 | Use simulation software to solve complicated problems. |
| C14 | Evaluate the performance of different systems using simulation techniques. |
| C15 | Describe the main components of a machine learning system. |
| C16 | Design training sets and testing sets for machine learning tasks. |
| C17 | Apply machine learning techniques to discover trends and patterns in realistic datasets. |
| C18 | Evaluate different machine learning techniques in terms of their applicability to different Machine Learning problems. |
| C19 | Explain the engineering design process, principles, and standards |
| C20 | Use project management tools in Computer Science projects |
| C21 | Apply the engineering design process to Computer Science projects |
| C22 | Function effectively on teams in Computer Science projects |
| C23 | Explain formalisms and operations of computer graphics |
| C24 | Use graphic software tools and methods to produce computer graphics |
| C25 | Compare methods and tools used in computer graphics |
| C26 | Develop a simple computer animation |
| C27 | Describe the impact of bioinformatics in exploring, analyzing and understanding genetic data. |
| C28 | Analyze biological sequences using web-based bioinformatics tools. |
| C29 | Design an algorithm to solve biology related problem. |
| C30 | Compare bioinformatics data types including sequences, structures, and expression data. |
| C31 | Explain the evolution of Internet technologies and Web applications concepts and architectures. |
| C32 | Develop Internet-based applications using client-side and server-side programming. |
| C33 | Write and parse XML documents |
| C34 | Develop Internet-based applications using Web Services technology. |
| C35 | Work on a team to build Internet-based applications |
| C36 | Discuss the basic concepts of Intelligent Systems. |
| C37 | Analyze current applications and limitations of intelligent robots. |
| C38 | Create mobile robots. |
| C39 | Develop software required to control intelligent robots |
| C40 | Design mobile User Interface (views, layout, controls, etc.) |
| C41 | Explain the key technological principles and methods for delivering and maintaining mobile applications |
| C42 | Apply Model-View-View-Model (MVVM) design principle |
| C43 | Use MVVM to develop a complete project/application for smart-phones and tablets. |
| C44 | Apply computer graphics techniques to visualize different types of data |
| C45 | Compare different types of animations |
| C46 | Demonstrate knowledge of scientific data visualization methods |
| C47 | Create a computer graphic animationusing industry standard tools |
| C48 | Explain the main aspects of data analysis process. |
| C49 | Demonstrate an understanding of basic techniques for intelligent data analysis. |
| C50 | Evaluate and analyze data-driven projects. |
| C51 | Apply Computational Intelligence techniques for data analysis. |
| C52 | Function effectively on teams for the successful completion of a project |
| C53 | Assess the feasibility and applications of the specialized topic |
| C54 | Recognize the methods, techniques, and skills specific to the topics. |
| C55 | Apply the specialized methods, techniques, and skills in Computer Science |
| C56 | Translate a problem expressed in English, mathematics or a diagram to a computer program. |
| C57 | Implement algorithms using programming constructs (variables, control structures, methods). |
| C58 | Solve problems using suitable data structures. |
| C59 | Implement searching, summing and selecting algorithms. |
| C60 | Design and implement algorithm to solve simple problems. |
| C61 | Choose suitable data type to represent the information. |
| C62 | Apply sequence, selection and repetition structures to solve problems. |
| C63 | Design and implement programs containing many methods. |
| C64 | Manipulate One-Dimension and Two-Dimension arrays. |
| C65 | Implement classes to solve a given problem. |
| C66 | Test simple classes. |
| C67 | Design classes using existing classes and libraries. |
| C68 | Develop a class hierarchy using inheritance. |
| C69 | Develop classes for simple data structures. |
| C70 | Design and implement small and medium size software problems using objects. |
| C71 | Use Arrays and Array-Lists in solving problems. |
| C72 | Implement user-defined classes to solve a given problem. |
| C73 | Use predefined libraries to develop programs with graphical user interface. |
| C74 | Develop a class hierarchy using inheritance. |
| C75 | Explain the logical progression of operating system development. |
| C76 | Explain the necessary components and structures of an operating system. |
| C77 | Install and customize an operating system. |
| C78 | Write simple shell scripts in operating systems |
| C79 | Evaluate various methods for process scheduling and inter-process communication. |
| C80 | Explain file-system interfaces. |
| C81 | Discuss issues related to the process of user-centered design. |
| C82 | Select appropriate interaction styles. |
| C83 | Apply usability principles and guidelines. |
| C84 | Build effective prototypes of user interfaces. |
| C85 | Evaluate user interfaces given design goals, user goals, and usability principles. |
| C86 | Apply recursion to solve problems. |
| C87 | Use APIs for implementing moderate size programs with data structures. |
| C88 | Design and implement linear data structures. |
| C89 | Design and implement tree data structures. |
| C90 | Model and Solve problems using graphs. |
| C91 | Explain the main concepts of Software Engineering. |
| C92 | Outline the fundamentals of software requirements. |
| C93 | Identify the software design methodologies. |
| C94 | Use different testing methods. |
| C95 | Produce a working software prototype. |
| C96 | Use CASE tools for design and implementation. |
| C97 | Determine the time and space complexity of algorithms. |
| C98 | Apply recurrence relations to estimate the time complexity of algorithms |
| C99 | Apply various algorithmic strategies to solve problems. |
| C100 | Explain Nondeterministic Polynomial completeness concepts. |
| C101 | Explain the various dimensions of a game. |
| C102 | Analyze the mechanics of games. |
| C103 | Develop a complete game design based on a game design template. |
| C104 | Implement a novel game. |
| C105 | Work effectively as members of a team. |
| C106 | Describe the main concepts of a database system. |
| C107 | Compare a database system approach to a file-based system approach. |
| C108 | Design a database using the entity-relationship diagram (ERD). |
| C109 | Use Relational Algebra to perform various operations on relations. |
| C110 | Apply normalization to database tables. |
| C111 | Function effectively as a team to create and query a database. |
| C112 | Analyze issues and case studies using ethical decision making based on a code of ethics and formal methods |
| C113 | Identify privacy, freedom of speech and crime issues in Cyberspace. |
| C114 | Discuss intellectual property and software development issues. |
| C115 | Discuss the implications of computing in the workplace on workers and employers. |
| C116 | Discuss the socio-economic implications of online communities and the Digital Divide. |
| C117 | Function in groups to assess current ethical issues and communicate the results in oral and written form |
| C118 | Define the computing requirements appropriate to design a computer science solution. |
| C119 | Apply knowledge of computer science theory and approaches to solve practical problems. |
| C120 | Develop a computer science application. |
| C121 | Function effectively on teams for the successful completion of a project |