



EASA COLLEGE

OF ENGINEERING & TECHNOLOGY (ECET)

— ULTIMATE DESTINATION FOR TECHNICAL EXCELLENCE —

APPROVED BY AICTE, NEW DELHI | AFFILIATED TO ANNA UNIVERSITY, CHENNAI

NH - 47, PALAKKAD MAIN ROAD, NAVAKKARAI (P.O), COIMBATORE, TAMIL NADU - 641105

Course Outcome Statements

Regulations 2021

COMPUTER SCIENCE AND ENGINEERING (CYBER SECURITY)

| | |
|---|---|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & I |
| Course Code & Name: | C101 & HS3152- Professional English - I |
| Year of Study : | 2022-2023 |

| Course Code and Name : C101 & HS3152- Professional English - I | | |
|---|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C101.1 | speak fluently and accurately in formal and informal communicative contexts | K1 |
| C101.2 | Use appropriate words in a professional context. | K3 |
| C101.3 | Gain understanding of basic grammatic structures and use them in right context. | K4 |
| C101.4 | Read and infer the denotative and connotative meanings of technical texts. | K2 |
| C101.5 | Write definitions, descriptions, narrations and essays on various topics | K5 |

| | |
|---|-------------------------------------|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & I |
| Course Code & Name: | C102 & MA3151 Matrices and Calculus |
| Year of Study : | 2022-2023 |

| Course Code and Name : C102 & MA3151 Matrices and Calculus | | |
|---|---|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C102.1 | Use the matrix algebra methods for solving practical problems. | K3 |
| C102.2 | Apply differential calculus tools in solving various application problems. | K5 |
| C102.3 | Able to use differential calculus ideas on several variable functions. | K1 |
| C102.4 | Apply different methods of integration in solving practical problems. | K2 |
| C102.5 | Apply multiple integral ideas in solving areas, volumes, and other practical problems. | K5 |



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| | |
|---|----------------------------------|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & I |
| Course Code & Name: | C103 &PH3151 Engineering Physics |
| Year of Study : | 2022-2023 |

| Course Code and Name : C103 &PH3151 Engineering Physics | | |
|--|---|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C103.1 | Achieve an effective understanding of mechanics. | K1 |
| C103.2 | Gain knowledge of electromagnetic waves and its applications | K3 |
| C103.3 | Introduce the basics of oscillations, optics and lasers | K2 |
| C103.4 | Understand the importance of quantum physics. | K2 |
| C103.5 | Understand the applications of quantum mechanics. | K2 |

| | |
|---|------------------------------------|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & I |
| Course Code & Name: | C104 &CY3151 Engineering Chemistry |
| Year of Study : | 2022-2023 |

| Course Code and Name : C104 & CY3151 Engineering Chemistry | | |
|---|---|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C104.1 | Infer the quality of water from quality parameter data and propose suitable treatment methodologies to treat water. | K3 |
| C104.2 | Identify and apply basic concepts of nanoscience and nanotechnology in designing the synthesis of nanomaterials for engineering and technology applications. | K2 |
| C104.3 | Apply the knowledge of phase rule and composites for material selection requirements | K3 |
| C104.4 | Recommend suitable fuels for engineering processes and applications. | K1 |
| C104.5 | Recognize different forms of energy resources and apply them for suitable applications in energy sectors | K3 |



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| | |
|---|---|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & I |
| Course Code & Name: | C105 &GE3151 Problem Solving and Python Programming |
| Year of Study : | 2022-2023 |

| Course Code and Name : C105 &GE3151 Problem Solving and Python Programming | | |
|---|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C105.1 | Develop algorithmic solutions to simple computational problems and execute simple Python programs | K3 |
| C105.2 | Write simple Python programs using conditionals and loops for solving problems | K3 |
| C105.3 | Decompose a Python program into functions | K3 |
| C105.4 | Represent compound data using Python lists, tuples, dictionaries etc | K4 |
| C105.5 | Develop python program for read and write data from/to files | K4 |

| | |
|---|--|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & I |
| Course Code & Name: | C106 &GE3171 Problem Solving and Python Programming Laboratory |
| Year of Study : | 2022-2023 |

| Course Code and Name : C106 &GE3171 Problem Solving and Python Programming Laboratory | | |
|--|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C106.1 | Develop algorithmic solutions to simple computational problems and execute simple Python programs | K3 |
| C106.2 | Implement programs in Python using conditionals and loops for solving problems | K3 |
| C106.3 | Deploy functions to decompose a Python program | K3 |
| C106.4 | Process compound data using Python data structures | K4 |
| C106.5 | Utilize Python packages in developing software applications | K4 |



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| | |
|---|--|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & I |
| Course Code & Name: | C107 & BS3171 Physics and Chemistry Laboratory |
| Year of Study : | 2022-2023 |

| Course Code and Name : C107 & BS3171 Physics and Chemistry Laboratory (Physics) | | |
|--|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C107.1 | Understand the functioning of various physics laboratory equipment | K4 |
| C107.2 | Access, process and analyze scientific information. | K3 |
| C107.3 | Solve problems individually and collaboratively. | K5 |
| C107.4 | To demonstrate the analysis of metals and alloys | K1 |
| C107.5 | Identify basicity , acidity and pH of the material | K4 |

| Course Code and Name : C107 & BS3171 Physics and Chemistry Laboratory (chemistry) | | |
|--|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C107.1 | To analyse the quality of water samples with respect to their acidity, alkalinity, hardness and Dissolved Oxygen | K2 |
| C107.2 | To determine the amount of metal ions through volumetric and spectroscopic techniques | K1 |
| C107.3 | To analyse and determine the composition of alloys. | K3 |
| C107.4 | To learn simple method of synthesis of nanoparticles | K1 |
| C107.5 | To quantitatively analyse the impurities in solution by electroanalytical techniques | K5 |



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| | |
|---|---------------------------------|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & I |
| Course Code & Name: | C108 &GE3172 English Laboratory |
| Year of Study : | 2022-2023 |

| Course Code and Name : C108 &GE3172 English Laboratory | | |
|---|---|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C108.1 | Listen to and comprehend general as well as complex academic information | K2 |
| C108.2 | Listen to and understand different points of view in a discussion | K1 |
| C108.3 | Speak fluently and accurately in formal and informal communicative contexts | K3 |
| C108.4 | Describe products and processes and explain their uses and purposes clearly and accurately | K1 |
| C108.5 | Express their opinions effectively in both formal and informal discussions | K5 |

| | |
|---|--|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & II |
| Course Code & Name: | C109 &HS3252 Professional English - II |
| Year of Study : | 2022-2023 |

| Course Code and Name : C109 &HS3252 Professional English - II | | |
|--|---|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C109.1 | Compare products and ideas in technical texts | K1 |
| C109.2 | Identify cause and effects in events, industrial processes through technical texts | K3 |
| C109.3 | Analyse problems in order to arrive at feasible solutions and communicate them orally and in the written format. | K4 |
| C109.4 | Report events and the processes of technical and industrial nature. | K2 |
| C109.5 | Present their opinions in a planned and logical manner, and draft effective resumes in context of job search. | K5 |



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| | |
|---|--|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & II |
| Course Code & Name: | C110 & MA3251 Statistics and Numerical Methods |
| Year of Study : | 2022-2023 |

| Course Code and Name : C110 & MA3251 Statistics and Numerical Methods | | |
|--|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C110.1 | Apply the concept of testing of hypothesis for small and large samples in real life problems. | K2 |
| C110.2 | Apply the basic concepts of classifications of design of experiments in the field of agriculture. | K3 |
| C110.3 | Appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems. | K5 |
| C110.4 | Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations. | K2 |
| C110.5 | Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications. | K5 |

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|---|---|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & II |
| Course Code & Name: | C111 & PH3256 Physics for Information Science |
| Year of Study : | 2022-2023 |

| Course Code and Name : C111 & PH3256 Physics for Information Science | | |
|---|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C111.1 | Make the students effectively to achieve an understanding the importance of electrical properties of materials. | K2 |
| C111.2 | Enable the students to gain knowledge of semiconductor physics. | K2 |
| C111.3 | Instill the knowledge on magnetic properties of materials. | K2 |
| C111.4 | Understand the importance of optical properties of materials and its applications. | K3 |
| C111.5 | Inculcate an idea of significance of nano structures, quantum confinement, ensuing nano device applications and quantum computing | K4 |



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| | |
|---|--|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & II |
| Course Code & Name: | C112 & BE3251 Basic Electrical and Electronics Engineering |
| Year of Study : | 2022-2023 |

| Course Code and Name : C112 & BE3251 Basic Electrical and Electronics Engineering | | |
|--|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C112.1 | Compute the electric circuit parameters for simple problems | K3 |
| C112.2 | Explain the working principle and applications of electrical machines | K2 |
| C112.3 | Analyze the characteristics of analog electronic devices | K3 |
| C112.4 | Explain the basic concepts of digital electronics | K2 |
| C112.5 | Explain the operating principles of measuring instruments | K2 |

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|---|------------------------------------|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & II |
| Course Code & Name: | C113 & GE3251 Engineering Graphics |
| Year of Study : | 2022-2023 |

| Course Code and Name : C113 & GE3251 Engineering Graphics | | |
|--|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C113.1 | Use BIS conventions and specifications for engineering drawing | K2 |
| C113.2 | Construct the conic curves, involutes and cycloid | K3 |
| C113.3 | Solve practical problems involving projection of lines | K3 |
| C113.4 | Draw the development of simple solids | K4 |
| C113.5 | Draw the orthographic, isometric and perspective projections of simple solids | K3 |



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| | |
|---|--------------------------------|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & II |
| Course Code & Name: | C114 & CS3251 Programming in C |
| Year of Study : | 2022-2023 |

| Course Code and Name : C114 & CS3251 Programming in C | | |
|--|---|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C114.1 | Demonstrate knowledge on C Programming constructs | K2 |
| C114.2 | Develop simple applications in C using basic constructs | K2 |
| C114.3 | Design and implement applications using arrays and strings | K3 |
| C114.4 | Develop and implement modular applications in C using functions, structures and pointers | K3 |
| C114.5 | Design applications using sequential and random access file processing | K3 |

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|---|--|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & II |
| Course Code & Name: | C115 & GE3271 Engineering Practices Laboratory |
| Year of Study : | 2022-2023 |

| Course Code and Name : C115 & GE3271 Engineering Practices Laboratory | | |
|--|---|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C115.1 | Draw pipe line plan ; lay and connect various pipe fittings used in common household plumbing work; Saw; plan; make joints in wood materials used in common household wood work. | K4 |
| C115.2 | Wire various electrical joints in common household electrical wire work | K3 |
| C115.3 | Weld various joints in steel plates using arc welding work; Machine various simple processes like turning, drilling, tapping in parts; | K3 |
| C115.4 | Assemble simple mechanical assembly of common household equipments; Make a tray out of metal sheet using sheet metal work | K3 |
| C115.5 | Solder and test simple electronic circuits; Assemble and test simple electronic components on PCB | K3 |



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| | |
|---|--|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & II |
| Course Code & Name: | C116- CS3271 Programming in C Laboratory |
| Year of Study : | 2022-2023 |

| Course Code and Name : C116- CS3271 Programming in C Laboratory | | |
|--|---|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C116.1 | Demonstrate knowledge on C programming constructs | K3 |
| C116.2 | Develop programs in C using basic constructs | K3 |
| C116.3 | Develop programs in C using arrays and structures | K3 |
| C116.4 | Develop applications in C using strings, pointers, functions | K3 |
| C116.5 | Develop applications in C using file processing | K3 |

| | |
|---|---|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | I & II |
| Course Code & Name: | C117 & GE3272 Communication Laboratory / Foreign Language |
| Year of Study : | 2022-2023 |

| Course Code and Name : C117 & GE3272 Communication Laboratory / Foreign Language | | |
|---|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C117.1 | Speak effectively in group discussions held in a formal/semi formal contexts | K2 |
| C117.2 | Discuss , analyse and present concepts and problems from various perspectives to arrive at suitable solutions | K1 |
| C117.3 | Write emails, letters and effective job applications | K3 |
| C117.4 | Write critical reports to convey data and information with clarity and precision | K1 |
| C117.5 | Give appropriate instructions and recommendations for safe execution of tasks | K5 |



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| | |
|---|----------------------------------|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | II & III |
| Course Code & Name: | C201&MA8351 Discrete Mathematics |
| Year of Study : | 2023-2024 |

| Course Code and Name : C201 &MA3354 Discrete Mathematics | | |
|---|---|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C201.1 | Have knowledge of the concepts needed to test the logic of a program. | K1 |
| C201.2 | Have an understanding in identifying structures on many levels. | K2 |
| C201.3 | Be aware of a class of functions which transform a finite set into another finite set which relates to input and output functions in computer science. | K3 |
| C201.4 | Apply counting principles. | K3 |
| C201.5 | understand concepts and properties of algebraic structures such as groups, rings and fields. | K2 |

| | |
|---|---|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | II & III |
| Course Code & Name: | C202 &CS3351 Digital Principles and Computer Organization |
| Year of Study : | 2023-2024 |

| Course Code and Name : C202 & CS3351 Digital Principles and Computer Organization | | |
|--|---|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C202.1 | Design various combinational digital circuits using logic gates | K2 |
| C202.2 | Design sequential circuits and analyze the design procedures | K3 |
| C202.3 | State the fundamentals of computer systems and analyze the execution of an instruction | K2 |
| C202.4 | Analyze different types of control design and identify hazards | K4 |
| C202.5 | Identify the characteristics of various memory systems and I/O communication | K2 |



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| | |
|---|---|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | II & III |
| Course Code & Name: | C203 & CS3352 Foundations of Data Science |
| Year of Study : | 2023-2024 |

| Course Code and Name : C203 & CS3352 Foundations of Data Science | | |
|---|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C203.1 | Define the data science process | K1 |
| C203.2 | Understand different types of data description for data science process | K2 |
| C203.3 | Gain knowledge on relationships between data | K2 |
| C203.4 | Use the Python Libraries for Data Wrangling | K3 |
| C203.5 | Apply visualization Libraries in Python to interpret and explore data | K3 |

| | |
|---|--|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | II & III |
| Course Code & Name: | C204 & CD3291 Data Structures and Algorithms |
| Year of Study : | 2023-2024 |

| Course Code and Name : C204 & CD3291 Data Structures and Algorithms | | |
|--|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C204.1 | Explain abstract data types | K2 |
| C204.2 | Design , implement, and analyze linear data structures, such as lists, queues, and stacks, according to the needs of different applications | K3 |
| C204.3 | Design , implement, and analyze efficient tree structures to meet requirements such as searching, indexing, and sorting | K3 |
| C204.4 | Model problems as graph problems and implement efficient graph algorithms to solve them | K4 |
| C204.5 | | |



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| | |
|---|---|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | II & III |
| Course Code & Name: | C205 & CS3391 Object Oriented Programming |
| Year of Study : | 2023-2024 |

| Course Code and Name : C205 & CS3391 Object Oriented Programming | | |
|---|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C205.1 | Apply the concepts of classes and objects to solve simple problems | K3 |
| C205.2 | Develop programs using inheritance, packages and interfaces | K3 |
| C205.3 | Make use of exception handling mechanisms and multithreaded model to solve real world problems | K3 |
| C205.4 | Build Java applications with I/O packages, string classes, Collections and generics concepts | K3 |
| C205.5 | Integrate the concepts of event handling and JavaFX components and controls for developing GUI based applications | K3 |

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|---|---|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | II & III |
| Course Code & Name: | C206 & CD3281 Data Structures and Algorithms Laboratory |
| Year of Study : | 2023-2024 |

| Course Code and Name : C206 & CD3281 Data Structures and Algorithms Laboratory | | |
|---|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C206.1 | Implement ADTs as Python classes | K2 |
| C206.2 | Design , implement, and analyse linear data structures, such as lists and queues according to the needs of different applications | K3 |
| C206.3 | Design , implement, and analyse linear data structures like stacks, according to the needs of different applications | K3 |
| C206.4 | Design , implement, and analyse efficient tree structures to meet requirements such as searching, indexing, and sorting | K3 |
| C206.5 | Model problems as graph problems and implement efficient graph algorithms to solve them | K4 |



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| | |
|---|--|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | II & III |
| Course Code & Name: | C207 & CS3381 Object Oriented Programming Laboratory |
| Year of Study : | 2023-2024 |

| Course Code and Name : C207 & CS3381 Object Oriented Programming Laboratory | | |
|--|---|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C207.1 | Design and develop java programs using object oriented programming concepts | K3 |
| C207.2 | Develop simple applications using object oriented concepts such as package, exceptions | K3 |
| C207.3 | Implement multithreading, and generics concepts | K3 |
| C207.4 | Create GUIs and event driven programming applications for real world problems | K4 |
| C207.5 | Implement and deploy web applications using Java | K4 |

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|---|---------------------------------------|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | II & III |
| Course Code & Name: | C208 & CS3361 Data Science Laboratory |
| Year of Study : | 2023-2024 |

| Course Code and Name : C208 & CS3361 Data Science Laboratory | | |
|---|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C208.1 | Make use of the python libraries for data science | K3 |
| C208.2 | Make use of the basic Statistical and Probability measures for data science | K3 |
| C208.3 | Perform descriptive analytics on the benchmark data sets | K4 |
| C208.4 | Perform correlation and regression analytics on standard data sets | K4 |
| C208.5 | Present and interpret data using visualization packages in Python | K4 |



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NH - 47, PALAKKAD MAIN ROAD, NAVAKKARAI (P.O), COIMBATORE, TAMIL NADU - 641105

| | |
|---|--|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | II & III |
| Course Code & Name: | C209 & GE3361 Professional Development |
| Year of Study : | 2023-2024 |

| Course Code and Name : C209 & GE3361 Professional Development | | |
|--|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C209.1 | Use MS Word to create quality documents, by structuring and organizing content for their day to day technical and academic requirements | K3 |
| C209.2 | Use MS EXCEL to perform data operations and analytics | K3 |
| C209.3 | Use MS EXCEL to record, retrieve data as per requirements and visualize data for ease of understanding | K3 |
| C209.4 | Use MS PowerPoint to create high quality academic presentations by including common tables, charts, graphs | K3 |
| C209.5 | Use MS PowerPoint to create high quality academic presentations by interlinking other elements, and using media objects | K3 |

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| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | II & IV |
| Course Code & Name: | C210 & CS3452 Theory of Computation |
| Year of Study : | 2023-2024 |

| Course Code and Name : C210 & CS3452 Theory of Computation | | |
|---|---|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C210.1 | Construct automata theory using Finite Automata | K2 |
| C210.2 | Write regular expressions for any pattern | K2 |
| C210.3 | Design context free grammar and Pushdown Automata | K2 |
| C210.4 | Design Turing machine for computational functions | K2 |
| C210.5 | Differentiate between decidable and undecidable problems | K2 |



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| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
|--|--|
| Year & Semester: | II & IV |
| Course Code & Name: | C211 & CS3491 Artificial Intelligence and Machine Learning |
| Year of Study : | 2023-2024 |

| Course Code and Name : C211 & CS3491 Artificial Intelligence and Machine Learning | | |
|---|--|-----------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C211.1 | Use appropriate search algorithms for problem solving | K2 |
| C211.2 | Apply reasoning under uncertainty | K2 |
| C211.3 | Build supervised learning models | K3 |
| C211.4 | Build ensembling and unsupervised models | K3 |
| C211.5 | Build deep learning neural network models | K3 |

| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
|--|--|
| Year & Semester: | II & IV |
| Course Code & Name: | C212 & CB3401 Database Management Systems and Security |
| Year of Study : | 2023-2024 |

| Course Code and Name : C212 & CB3401 Database Management Systems and Security | | |
|---|---|-----------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C212.1 | Construct SQL Queries using relational algebra | L2 |
| C212.2 | Design database using ER model and normalize the database | K3 |
| C212.3 | Construct queries to handle transaction processing and maintain consistency of the database | K3 |
| C212.4 | Compare and contrast various indexing strategies and apply the knowledge to tune the performance of the database | K3 |
| C212.5 | Appraise how advanced databases differ from Relational Databases and find a suitable database for the given requirement. | K2 |



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| | |
|---|--|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | II & IV |
| Course Code & Name: | C213 & CB3402 Operating Systems and Security |
| Year of Study : | 2023-2024 |

| Course Code and Name :C213 &CB3402 Operating Systems and Security | | |
|--|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C213.1 | Apply JavaScript, HTML and CSS effectively to create interactive and dynamic websites | K3 |
| C213.2 | Create simple PHP scripts | K3 |
| C213.3 | Design and deploy simple web-applications. | K3 |
| C213.4 | Create simple database applications | K3 |
| C213.5 | Handle multimedia components | K2 |

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| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | II & IV |
| Course Code & Name: | C214 & CB 3491 Cryptography and Cyber Security |
| Year of Study : | 2023-2024 |

| Course Code and Name :C214 & CB 3491 Cryptography and Cyber Security | | |
|---|---|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C214.1 | Analyze various scheduling algorithms and process synchronization | K4 |
| C214.2 | Explain deadlock prevention and avoidance algorithms. | K2 |
| C214.3 | Compare and contrast various memory management schemes. | K2 |
| C214.4 | Explain the functionality of file systems, I/O systems, and Virtualization | K2 |
| C214.5 | Compare iOS and Android Operating Systems | K2 |



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| | |
|---|---|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | II & IV |
| Course Code & Name: | C215 & GE3451 Environmental Sciences and Sustainability |
| Year of Study : | 2023-2024 |

| Course Code and Name : C215 & GE3451 Environmental Sciences and Sustainability | | |
|---|--|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C215.1 | Recognize and understand the functions of environment, ecosystems and biodiversity and their conservation. | K1 |
| C215.2 | Identify the causes, effects of environmental pollution and natural disasters and contribute to the preventive measures in the society. | K2 |
| C215.3 | Identify and apply the understanding of renewable and non-renewable resources and contribute to the sustainable measures to preserve them for future generations. | K4 |
| C215.4 | Recognize the different goals of sustainable development and apply them for suitable technological advancement and societal development. | K6 |
| C215.5 | Demonstrate the knowledge of sustainability practices and identify green materials, energy cycles and the role of sustainable urbanization. | K5 |

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| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | II & IV |
| Course Code & Name: | C216 & Cryptography and Cyber Security Laboratory |
| Year of Study : | 2023-2024 |

| Course Code and Name : C216 & Cryptography and Cyber Security Laboratory | | |
|---|---|------------------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C216.1 | Define and implement UNIX Commands | K3 |
| C216.2 | Compare the performance of various CPU Scheduling Algorithms | K4 |
| C216.3 | Compare and contrast various Memory Allocation Methods | K4 |
| C216.4 | Define File Organization and File Allocation Strategies | K4 |
| C216.5 | Implement various Disk Scheduling Algorithms | K4 |



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| | |
|---|---|
| Programme: B. E. Computer Science and Engineering (Cyber Security) | |
| Year & Semester: | II & IV |
| Course Code & Name: | C217 & CB3412 Database Management Systems and Security Laboratory |
| Year of Study : | 2023-2024 |

| C217 & CB3412 Database Management Systems and Security Laboratory | | |
|---|--|-----------------|
| Course Code | CO Statements | Knowledge Level |
| The students should be able to | | |
| C217.1 | Create databases with different types of key constraints | K3 |
| C217.2 | Construct simple and complex SQL queries using DML and DCL commands | K3 |
| C217.3 | Use advanced features such as stored procedures and triggers and incorporate in GUI based application development | K4 |
| C217.4 | Create an XML database and validate with meta-data (XML schema) | K4 |
| C217.5 | Create and manipulate data using NOSQL database | K4 |