Course Outcomes Regulation 2021

Course Name	Course Outcomes
SEMESTER I	
HS3152-PROFESSIONA LENGLISH - I	CO1:Apply appropriate words in a professional context CO2:Apply the basic grammatic structures and use them in right context. CO3:Apply the denotative and connotative meanings of technical texts CO4: Write definitions, descriptions, narrations and essays on various topics CO5: Apply basic grammar principles and be able to synthesize and transform sentences.
MA3151 MATRICES AND CALCULUS	CO1:Use the matrix algebra methods for solving practical problems. CO2:Apply differential calculus tools in solving various application problems. CO3:Able to use differential calculus ideas on several variable functions. CO4:Apply different methods of integration in solving practical problems. CO5:Apply multiple integral ideas in solving areas, volumes and other practical problems.
PH3151 ENGINEERIN GPHYSICS	CO1:Understand the importance of mechanics. CO2:Express their knowledge in electromagnetic waves. CO3:Demonstrate a strong foundational knowledge in oscillations, optics and lasers. CO4:Understand the importance of quantum physics. CO5:Comprehend and apply quantum mechanical principles towards the formation of energy bands.
CY3151 ENGINEERING CHEMISTRY	CO1:To infer the quality of water from quality parameter data and propose suitable treatment methodologies to treat water. CO2:To identify and apply basic concepts of nanoscience and nanotechnology in designing the synthesis of nanomaterials for engineering and technology applications. CO3:To apply the knowledge of phase rule and composites for material selection requirements. CO4:To recommend suitable fuels for engineering processes and applications. CO5:To recognize different forms of energy resources and apply them for suitable applications in energy sectors.
GE3151 PROBLEM SOLVING AND PYTHON PROGRAMMING	CO1: Develop algorithmic solutions to simple computational problems. CO2: Develop and execute simple Python programs. CO3: Write simple Python programs using conditionals and loops for solving problems. CO4: Decompose a Python program into functions. CO5: Represent compound data using Python lists, tuples, dictionaries etc. CO6: Read and write data from/to files in Python programs.

Course Name	Course Outcomes
GE3171 PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY	CO1: Develop algorithmic solutions to simple computational problems CO2: Develop and execute simple Python programs. CO3: Implement programs in Python using conditionals and loops for solving problems.. CO4: Deploy functions to decompose a Python program. CO5: Process compound data using Python data structures. CO6: Utilize Python packages in developing software applications.
BS3171 PHYSICS AND CHEMISTRY LABORATORY	CO1:Understand the functioning of various physics laboratory equipment. CO2:Use graphical models to analyze laboratory data. CO3:Use mathematical models as a medium for quantitative reasoning and describing physical reality. CO4:Access, process and analyze scientific information. CO5:Solve problems individually and collaboratively.
GE3172 ENGLISH LABORATORY	CO1:To listen to and comprehend general as well as complex academic information CO2:To listen to and understand different points of view in a discussion CO3:To speak fluently and accurately in formal and informal communicative contexts CO4:To describe products and processes and explain their uses and purposes clearly and accurately CO5:To express their opinions effectively in both formal and informal discussions
SEMESTER II	
HS3252 PROFESSIONA LENGLISH - II	CO1:To compare and contrast products and ideas in technical texts. CO2:To identify and report cause and effects in events, industrial processes through technical texts CO3:To analyse problems in order to arrive at feasible solutions and communicate them in the written format. CO4:To present their ideas and opinions in a planned and logical manner CO5:To draft effective resumes in the context of job search.
MA3251 STATISTICS AND NUMERICAL METHODS	CO1:Apply the concept of testing of hypothesis for small and large samples in real life problems. CO2:Apply the basic concepts of classifications of design of experiments in the field of agriculture. CO3:Appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems. CO4:Understandthe knowledge of various techniques and methods for solving first and second order ordinary differential equations. CO5:Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications.

Course Name	Course Outcomes
PH3256 PHYSICS FOR INFORMATION SCIENCE	CO1:gain knowledge on classical and quantum electron theories, and energy band structures CO2:acquire knowledge on basics of semiconductor physics and its applications in various devices CO3:get knowledge on magnetic properties of materials and their applications in data storage, CO4:have the necessary understanding on the functioning of optical materials for optoelectronics CO5:understand the basics of quantum structures and their applications and basics of quantum computing
BE3251 BASIC ELECTRICALAND ELECTRONICS ENGINEERING	CO1: Compute the electric circuit parameters for simple problems CO2: Explain the working principle and applications of electrical machines CO3: Analyze the characteristics of analog electronic devices CO4: Explain the basic concepts of digital electronics CO5: Explain the operating principles of measuring instruments
GE3251 ENGINEERING GRAPHICS	CO1:Use BIS conventions and specifications for engineering drawing. CO2:Construct the conic curves, involutes and cycloid. CO3:Solve practical problems involving projection of lines. CO4:Draw the orthographic, isometric and perspective projections of simple solids. CO5:Draw the development of simple solids.
CS3251 PROGRAMMING IN C	CO1: Demonstrate knowledge on C Programming constructs CO2: Develop simple applications in C using basic constructs CO3: Design and implement applications using arrays and strings CO4: Develop and implement modular applications in C using functions. CO5: Develop applications in C using structures and pointers. CO6: Design applications using sequential and random access file processing.
GE3271 ENGINEERING PRACTICES LABORATORY	CO1: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. CO2:Wire various electrical joints in common household electrical wire work. CO3:Weld various joints in steel plates using arc welding work; Machine various simple processes like turning, drilling, tapping in parts; Assemble simple mechanical assembly of common household equipments; Make a tray out of metal sheet using sheet metal work. CO4:Solder and test simple electronic circuits; Assemble and test simple electronic components on PCB.
CS3271 PROGRAMMING IN CLABORATORY	CO1: Demonstrate knowledge on C programming constructs. CO2: Develop programs in C using basic constructs. CO3: Develop programs in C using arrays. CO4: Develop applications in C using strings, pointers, functions. CO5: Develop applications in C using structures. CO6: Develop applications in C using file processing.

Course Name	Course Outcomes
GE3272 COMMUNICATIO NLABORATORY	CO 1:Speak effectively in group discussions held in a formal/semi formal contexts. CO 2: Discuss, analyse and present concepts and problems from various perspectives to arrive at suitable solutions CO 3: Write emails, letters and effective job applications. CO 4: Write critical reports to convey data and information with clarity and precision CO 5: Give appropriate instructions and recommendations for safe execution of tasks
SEMESTER III	
MA3354 DISCRETE MATHEMATICS	CO1:Have knowledge of the concepts needed to test the logic of a program. CO2:Have an understanding in identifying structures on many levels. CO3: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. CO4:Be aware of the counting principles. CO5:Be exposed to concepts and properties of algebraic structures such as groups, rings and fields.
CS3351 DIGITAL PRINCIPLESAND COMPUTER ORGANIZATION	CO1 : Design various combinational digital circuits using logic gates CO2 : Design sequential circuits and analyze the design procedures CO3 : State the fundamentals of computer systems and analyze the execution of an instruction CO4 : Analyze different types of control design and identify hazards CO5 : Identify the characteristics of various memory systems and I/O communication.
CS3352 FOUNDATIONS OFDATA SCIENCE	CO1: Define the data science process CO2: Understand different types of data description for data science process CO3: Gain knowledge on relationships between data CO4: Use the Python Libraries for Data Wrangling CO5: Apply visualization Libraries in Python to interpret and explore data
CD3291 DATA STRUCTURES AND ALGORITHMS	CO1:Explain abstract data types CO2:Design, implement, and analyze linear data structures, such as lists, queues, and stacks, according to the needs of different applications CO3:Design, implement, and analyze efficient tree structures to meet requirements such as searching, indexing, and sorting CO4:Model problems as graph problems and implement efficient graph algorithms to solve them

Course Name	Course Outcomes
CS3391 OBJECT ORIENTED PROGRAMMING	CO1:Apply the concepts of classes and objects to solve simple problems CO2:Develop programs using inheritance, packages and interfaces CO3:Make use of exception handling mechanisms and multithreaded model to solve real world problems CO4:Build Java applications with I/O packages, string classes, Collections and generics concepts CO5:Integrate the concepts of event handling and JavaFX components and controls for developing GUI based applications
CD3281 DATA STRUCTURES AND ALGORITHMS LABORATORY	CO1:Implement ADTs as Python classes CO2:Design, implement, and analyse linear data structures, such as lists, queues, and stacks, according to the needs of different applications CO3:Design, implement, and analyse efficient tree structures to meet requirements such as searching, indexing, and sorting CO4:Model problems as graph problems and implement efficient graph algorithms to solve them
CS3381 OBJECT ORIENTED PROGRAMMING LABORATORY	CO1 : Design and develop java programs using object oriented programming concepts CO2 : Develop simple applications using object oriented concepts such as package, exceptions CO3: Implement multithreading, and generics concepts CO4 : Create GUIs and event driven programming applications for real world problems CO5: Implement and deploy web applications using Java
CS3361 DATA SCIENCE LABORATORY	CO1: Make use of the python libraries for data science CO2: Make use of the basic Statistical and Probability measures for data science. CO3: Perform descriptive analytics on the benchmark data sets. CO4: Perform correlation and regression analytics on standard data sets CO5: Present and interpret data using visualization packages in Python
GE3361 PROFESSIONAL DEVELOPMENT	CO1:Use MS Word to create quality documents, by structuring and organizing content for their day to day technical and academic requirements CO2:Use MS EXCEL to perform data operations and analytics, record, retrieve data as per requirements and visualize data for ease of understanding CO3:Use MS PowerPoint to create high quality academic presentations by including common tables, charts, graphs, interlinking other elements, and using media objects.
SEMESTER IV	
CS3452 THEORY OF COMPUTATION	CO1: Construct automata theory using Finite Automata CO2: Write regular expressions for any pattern CO3: Design context free grammar and Pushdown Automata CO4: Design Turing machine for computational functions CO5: Differentiate between decidable and undecidable problems

Course Name	Course Outcomes
CS3491 ARTIFICIAL INTELLIGENCE ANDMACHINE LEARNING	CO1: Use appropriate search algorithms for problem solving CO2: Apply reasoning under uncertainty CO3: Build supervised learning models CO4: Build ensembling and unsupervised models CO5: Build deep learning neural network models
CS 3492 DATABASE MANAGEMENT SYSTEMS	CO1:Construct SQL Queries using relational algebra CO2:Design database using ER model and normalize the database CO3:Construct queries to handle transaction processing and maintain consistency of the database CO4:Compare and contrast various indexing strategies and apply the knowledge to tune the performance of the database CO5:Appraise how advanced databases differ from Relational Databases and find a suitable database for the given requirement.
IT3401 WEB ESSENTIALS	CO 1: Apply JavaScript, HTML and CSS effectively to create interactive and dynamic websites. CO 2: Create simple PHP scripts CO 3: Design and deploy simple web-applications. CO 4: Create simple database applications. CO 5: Handle multimedia components
CS3451 INTRODUCTION TO OPERATING SYSTEMS	CO1 : Analyze various scheduling algorithms and process synchronization. CO2 : Explain deadlock prevention and avoidance algorithms. CO3 : Compare and contrast various memory management schemes. CO4 : Explain the functionality of file systems, I/O systems, and Virtualization CO5 : Compare iOS and Android Operating Systems.
GE3451 ENVIRONMENTAL SCIENCES AND SUSTAINABILITY	CO1:To recognize and understand the functions of environment, ecosystems and biodiversity and their conservation. CO2:To identify the causes, effects of environmental pollution and natural disasters and contribute to the preventive measures in the society. CO3:To identify and apply the understanding of renewable and non-renewable resources and contribute to the sustainable measures to preserve them for future generations. CO4:To recognize the different goals of sustainable development and apply them for suitable technological advancement and societal development. CO5:To demonstrate the knowledge of sustainability practices and identify green materials, energy cycles and the role of sustainable urbanization
CS3451 OPERATING SYSTEMS LABORATORY	CO1 : Define and implement UNIX Commands. CO2 : Compare the performance of various CPU Scheduling Algorithms. CO3 : Compare and contrast various Memory Allocation Methods. CO4 :Define File Organization and File Allocation Strategies. CO5 : Implement various Disk Scheduling Algorithms.

Course Name	Course Outcomes
CS3481 DATABASE MANAGEMENTSYSTEMS LAB	CO1: Create databases with different types of key constraints. CO2: Construct simple and complex SQL queries using DML and DCL commands. CO3: Use advanced features such as stored procedures and triggers and incorporate in GUI based application development. CO4: Create an XML database and validate with meta-data (XML schema). CO5: Create and manipulate data using NOSQL database.
SEMESTER – V	
CS3591 COMPUTER NETWORKS	CO 1: Explain the basic layers and its functions in computer networks. CO 2: Understand the basics of how data flows from one node to another. CO 3: Analyze routing algorithms. CO 4: Describe protocols for various functions in the network. CO 5: Analyze the working of various application layer protocols.
IT3501 FULL STACK WEB DEVELOPMENT	CO1: Understand the various stacks available for web application development CO2: Use Node.js for application development CO3: Develop applications with MongoDB CO4: Use the features of Angular and Express CO5: Develop React applications
CS3551 DISTRIBUTED COMPUTING	CO1: Explain the foundations of distributed systems (K2) CO2: Solve synchronization and state consistency problems (K3) CO3 Use resource sharing techniques in distributed systems (K3) CO4: Apply working model of consensus and reliability of distributed systems (K3) CO5: Explain the fundamentals of cloud computing (K2)
CS3691 EMBEDDED SYSTEMS AND IOT	CO1: Explain the architecture of embedded processors. CO2: Write embedded C programs. CO3: Design simple embedded applications. CO4: Compare the communication models in IOT CO5: Design IoT applications using Arduino/Raspberry Pi /open platform.
CCW331 BUSINESS ANALYTICS	CO1: Explain the real world business problems and model with analytical solutions. CO2: Identify the business processes for extracting Business Intelligence CO3 : Apply predictive analytics for business fore-casting CO4: Apply analytics for supply chain and logistics management CO5: Use analytics for marketing and sales.

Course Name	Course Outcomes
CCS335 CLOUD COMPUTING	CO1: Understand the design challenges in the cloud. CO2: Apply the concept of virtualization and its types. CO3: Experiment with virtualization of hardware resources and Docker. CO4: Develop and deploy services on the cloud and set up a cloud environment. CO5: Explain security challenges in the cloud environment.
IT3511 FULL STACK WEB DEVELOPMENT LAB	CO1: Design full stack applications with clear understanding of user interface, business logic and data storage. CO2: Design and develop user interface screens CO3: Implement the functional requirements using appropriate tool CO4: Design and develop database based on the requirements C O5: Integrate all the necessary components of the application
SEMESTER VI	
CCS356 OBJECT ORIENTED SOFTWARE ENGINEERING	CO1: Compare various Software Development Lifecycle Models CO2: Evaluate project management approaches as well as cost and schedule estimation strategies. CO3: Perform formal analysis on specifications. CO4: Use UML diagrams for analysis and design. CO5: Architect and design using architectural styles and design patterns, and test the system
CCS341 DATA WAREHOUSING	CO1: Design data warehouse architecture for various Problems CO2: Apply the OLAP Technology CO3: Analyse the partitioning strategy CO4: Critically analyze the differentiation of various schema for given problem CO5: Frame roles of process manager & system manager
CCS362 SECURITY AND PRIVACY IN CLOUD	CO1: Understand the cloud concepts and fundamentals. CO2: Explain the security challenges in the cloud. CO3: Define cloud policy and Identity and Access Management. CO4: Understand various risks and audit and monitoring mechanisms in the cloud. CO5: Define the various architectural and design considerations for security in the cloud.
OBT351 FOOD, NUTRITION AND HEALTH	CO 1.To be able to understand the nutritional values of the various types of foods CO 2.To be able to Analyze the role of food in the metabolic activity of the healthy diet CO 3. To be able to Infer the BMI calculation and stress related diseases. CO 4. To be able to Elaborate the independent decision on the choice of food to prevent life style disorders and diseases CO 5. To be able to Assess about the food laws governance CO 6. To be able to Compare junk, modified and super foods
CCS370 UI AND UX DESIGN	CO1:Build UI for user Applications CO2:Evaluate UX design of any product or application CO3:Demonstrate UX Skills in product development CO4:Implement Sketching principles CO5:Create Wireframe and Prototype

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CCW332 DIGITAL MARKETING	CO1: To examine and explore the role and importance of digital marketing in today's rapidly changing business environment. CO2: To focuses on how digital marketing can be utilized by organizations and how its effectiveness can be measured CO3: To know the key elements of a digital marketing strategy. CO4: To study how the effectiveness of a digital marketing campaign can be measured CO5: To demonstrate advanced practical skills in common digital marketing tools such as SEO, SEM, Social media and Blogs.
IT3681 MOBILE APPLICATIONS DEVELOPMENT LABORATORY	CO1:Design and build simple mobile applications supporting multiple platforms. CO2:Apply various programming techniques and patterns to build mobile applications. CO3:Build real-time mobile applications for society/environment CO4:Build gaming and multimedia based mobile applications CO5:Build AI based mobile applications for society/environment following ethical practices
MX3089 INDUSTRIA LSAFETY	CO1: Discuss d the basic concept of safety. CO2: Apply knowledge of Statutory Regulations and standards. CO3: Discuss about the safety Activities of the Working Place. CO4: Analyze on the impact of Occupational Exposures and their Remedies. CO5: Apply knowledge of Risk Assessment Techniques
SEMESTER VII	
GE3791 HUMAN VALUES AND ETHICS	CO1: Construct a basic perception on various moral, human values and ethics. CO2:Identify and analyze profession, professional ethics, moral issues and the role of ethical theories in engineering field CO3: Identify an insight of social responsibilities and the code of ethics to be followed by an engineer. CO4: Identify the professional rights and responsibilities of an engineer for safety and risk benefit analysis. CO5:Apply ethical principles to resolve situations that arise in their professional lives
GE3751 PRINCIPLES OF MANAGEMENT	CO1: Upon completion of the course, students will be able to have clear understanding of managerial functions like planning, organizing, staffing, leading & controlling. CO2: Have same basic knowledge on international aspect of management. CO3: Ability to understand management concept of organizing. CO4: Ability to understand management concept of directing. CO5: Ability to understand management concept of controlling.

Course Name	Course Outcomes
AI3021 IT IN AGRICULTURALSYSTEM	CO1:The students shall be able to understand the applications of IT in remote sensing applications such as Drones etc. CO2:The students will be able to get a clear understanding of how a greenhouse can be automated and its advantages. CO3:The students will be able to apply IT principles and concepts for management of field operations. CO4:The students will get an understanding about weather models, their inputs and applications. CO5:The students will get an understanding of how IT can be used for e-governance in agriculture.
ORA351 FOUNDATION OF ROBOTICS	CO1: Interpret the features of robots and technology involved in the control. CO2: Apply the basic engineering knowledge and laws for the design of robotics. CO3: Explain the basic concepts like various configurations, classification and parts of end effectors compare various end effectors and grippers and tools and sensors used in robots. CO4: Explain the concept of kinematics, degeneracy, dexterity and trajectory planning. CO5: Demonstrate the image processing and image analysis techniques by machine vision system.
OGI352 GEOGRAPHICAL INFORMATION SYSTEM	CO1 Have basic idea about the fundamentals of GIS. CO2 Understand the types of data models. CO3 Get knowledge about data input and topology CO4 Gain knowledge on data quality and standards CO5 Understand data management functions and data output
IT3711 SUMMER INTERNSHIP	CO1: Industry Practices, Processes,Techniques, technology, automation and other core aspects of software industry CO2: Analyze, Design solutions to complex business problems CO3: Build and deploy solutions for target platform CO4: Preparation of Technical reports and presentation
SEMESTER VIII	
IT3811 PROJECT WORK / INTERNSHIP	CO1: Gain Domain knowledge and technical skill set required for solving industry / research problems CO2: Provide solution architecture, module level designs, algorithms CO3: Implement, test and deploy the solution for the target platform CO4: Prepare detailed technical report, demonstrate and present the work