



# LORDS INSTITUTE OF ENGINEERING & TECHNOLOGY

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

AY:2021-22

### COURSE OUTCOMES

#### Semester: III Semester

Name of the Course: Operations Research

Course.No	Outcomes
C211.01	<b>Annotating</b> the concepts, scope, need and phases of operations research. Preparing the L.P.P and derive optimal solutions to linear programming problems by graphical method, simplex method, Big-M method and two phase method.
C211.02	<b>Preparing</b> the Transportation and Assignment problems and determining optimum solutions for transportation, Assignment and travelling salesman problems.
C31.03	<b>Calculating</b> minimum processing times for sequencing of n-jobs-2/21/m & 2- jobs-n machines and best replacement time for deteriorate items when value of money is counted & not counted.
C211.04	<b>Illustrating</b> a game theory for pure and mixed strategy under competitive environment and preparing an inventory model for EOQ considering single & multiple price breaks.
C211.05	<b>Illustrating</b> the waiting line problems for M/M/1 and M/M/K queuing models and Dynamic Programming problems for shortest path & L.P.P model
C211.06	<b>Assessing</b> the applications of simulation process for queuing & inventory problems.

Name of the Course: Basic Electronics

Course.No	Outcomes
C212.01	<b>Obtain</b> the the V - I characteristics of diode and analyze various diode applications like rectifiers and regulators.
C212.02	<b>Analyse</b> the construction & working of active devices like BJT & FET in various modes.
C212.03	<b>Recognize</b> the type of feedback and analyze its effect on amplifier characteristics and calculate the frequency of oscillation for different types of oscillator circuits.
C212.04	<b>Analyze</b> and design different circuits using Ideal Op Amps; Design simple digital circuits using logic gates.
C212.05	<b>Understand</b> the principle of operation & applications of electronic devices, transducers.
C212.06	<b>Analyse</b> different data acquisition systems and data converters.

Name of the Course: Digital Electronics

Course.No	Outcomes
C213.01	Understand the Basics of Digital Electronics and concepts related to Digital Circuits design.
C213.02	Design various logic gates and simplify Boolean Expressions.
C213.03	Realize and analyse the operation of MUX, decoders, adder, subtractor, BCD adder, magnitude comparator circuit.
C213.04	Study and construction of Sequential logic Circuits.
C213.05	Understand various design of flip flops and to identify and realize circuits using flip-flop.
C213.06	Understand the concepts of programmable logic devices, shift registers, counters, FSM and various memory devices.

**Name of the Course: Data Structures and Algorithms**

Course.No	Outcomes
C214.01	Understand the importance of abstract data type and implementing the concepts of data structure using abstract data type.
C214.02	Evaluate an algorithm by using algorithmic performance and measures
C214.03	Apply Linear data structures such as stacks, queues, linked lists and develop applications using them.
C214.04	Apply Non-Linear data structures such as trees and develop applications using them.
C214.05	Determine the suitability of the standard algorithms: Searching, Sorting and Traversals.

**Name of the Course: Discrete Mathematics**

Course.No	Outcomes
C215.01	Illustrate by examples the basic terminology of functions, relations, and sets and demonstrate knowledge of their associated operations.
C215.02	Understand basics of counting, apply permutations and combinations to handledifferent types of objects.
C215.03	Describe and use recursively-defined relationships to solve problems using generating functions.
C215.04	Analyse semi group, monoid group and abelian group with suitable examples and appreciate group theory applications in computer arithmetic.
C215.05	Demonstrate in practical applications the use of basic counting principles of permutations, combinations, inclusion/exclusion principle and the pigeon hole methodology.

**Name of the Course: OOP using JAVA**

Course.No	Outcomes
C216.01	Achieve proficiency in object-oriented concepts and also learns to incorporate the same into the Java programming language.
C216.02	Create Java application programs using sound OOP practices e.g. Inheritance, interfaces and proper program structuring by using packages, access control specifiers
C216.03	Understand and Implement the concepts of Exception Handling in JAVA.
C216.04	Develop the ability to solve real-world problems through software development in high-level programming language using Large APIs of Java as well as the Java standard class library.
C216.05	Understand File, Streams, Input and Output Handling in java.

**Name of the Course: Data Structures and Algorithms Lab**

Course.No	Outcomes
C217.01	Understand and Implement the abstract data type and reusability of a particular data structure.
C217.02	Implement linear data structures such as stacks, queues using array and linked list.
C217.03	Understand and implements non-linear data structures such as trees, graphs
C217.04	Implement various kinds of searching, sorting and traversal techniques and know when to choose which technique.
C217.05	Understanding and implementing hashing techniques
C217.06	Decide a suitable data structure and algorithm to solve a real world problem.

**Name of the Course: Advanced Computer Skills Lab**

<b>Course.No</b>	<b>Outcomes</b>
<b>C218.01</b>	Implement basic syntax in python.
<b>C218.02</b>	Analyse and implement different kinds of OOP concept in real world problems.
<b>C218.03</b>	Implement MATLAB operations and graphic functions.
<b>C218.04</b>	Implement object oriented concepts,
<b>C218.05</b>	Implement database and GUI applications
<b>C218.06</b>	Implement basic syntax in python.

**Name of the Course: Basic Electronics Lab**

<b>Course.No</b>	<b>Outcomes</b>
<b>C219.01</b>	Study and understand about CRO and Resistors, diodes, transistor components and their Applications.
<b>C219.02</b>	Analyze the Characteristics of Bipolar Junction Transistor and Field Effect Transistor.
<b>C219.03</b>	Analyze the RC phase shift oscillator and Hartley and Colpitts Oscillators and its applications.
<b>C219.04</b>	Design and analyze the BJT CE Amplifier and Operational Amplifier and its applications.
<b>C219.05</b>	Construct and analyze the Full wave rectifier with and without filter.
<b>C219.06</b>	Study and measurement of Strain gauge.

**Name of the Course: OOP using JAVA Lab**

<b>Course.No</b>	<b>Outcomes</b>
<b>C2110.01</b>	Design the programs involving the basics programming constructs
<b>C2110.02</b>	Analyze the concepts of classes, objects, methods constructors, overloading and overriding along with access controls
<b>C2110.03</b>	Use the data abstraction, inheritance, polymorphism, encapsulation principles in structuring java applications
<b>C2110.04</b>	Develop java programming using multithreading, files, collections with necessary exception handling
<b>C2110.05</b>	Develop java programming using Database concepts with necessary exception handling
<b>C2110.06</b>	Develop GUI applications using AWTs, Swings and applets.



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**COURSE OUTCOMES**

**Semester: V Semester**

**Name of the Course: Software Engineering**

Course.No	Outcomes
C311.01	Demonstrate software Engineering methods and practices and implement the software process models such as the waterfall and evolutionary models
C311.02	Identify and Translate end-user requirements into system and software
C311.03	Define the modeling concept and design within the context of software engineering
C311.04	Analyze the Architectural Design of the software
C311.05	Evaluate the testing problems and will be able to develop a simple testing report and maintain the quality of the software

**Name of the Course: Operating Systems**

Course.No	Outcomes
C312.01	Understand the fundamental components of a computer operating system and Identify System Calls.
C312.02	Implement process, Thread and Evaluate process scheduling criteria .
C312.03	Develop procedure for process synchronization of an OS and explain the policies for deadlocks.
C312.04	Differentiate the concept of memory management, Virtual Memory and Paging systems.
C312.05	Demonstrate the concept of disk management and solve issues related to file system, Input output systems

**Name of the Course: Automata Languages & Computation**

Course.No	Outcomes
C313.01	Design the Finite Automata to accept set of strings of languages.
C313.02	Determine whether the given language regular or not.
C313.03	Design Context Free Grammars to generate strings of Context Free Languages.
C313.04	Determine equivalence of language accepted by Unrestricted grammars and language generated by Turing Machine..
C313.05	Distinguish between computability and Non-computability and decidability and Non-decidability.

**Name of the Course: Artificial Intelligence**

Course.No	Outcomes
C314.01	Formalize the problem in the language/framework of different AI methods
C314.02	Illustrate basic principles of AI in solution that requires problem solving, search, inference
C314.03	Represent natural language/English using predicate logic to build knowledge through various representation mechanisms
C314.04	Demonstrate understanding of steps involved in building of intelligent agents, expert systems, Bayesian networks

<b>C314.05</b>	Differentiate between learning paradigms to be applied for an application
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**Name of the Course: Web and Internet Technologies**

<b>Course.No</b>	<b>Outcomes</b>
<b>C315.01</b>	To introduce PHP language for server-side scripting
<b>C315.02</b>	To introduce XML and processing of XML Data with Java
<b>C315.03</b>	To introduce Server-side programming with Java Servlets and JSP
<b>C315.04</b>	To introduce Client-side scripting with Javascript and AJAX, gain knowledge of client-side scripting, validation of forms and AJAX programming
<b>C315.05</b>	Understand server-side scripting with PHP

**Name of the Course: Information Retrieval Systems**

<b>Course.No</b>	<b>Outcomes</b>
<b>C316.01</b>	Understand the fundamental components of Information Retrieval Systems.
<b>C316.02</b>	Understand the algorithms and techniques for information retrieval (document indexing and retrieval, query processing)
<b>C316.03</b>	Quantitatively evaluate information retrieval systems
<b>C316.04</b>	Differentiate the concept of Classify and cluster documents
<b>C316.05</b>	Understand the practical aspects of information retrieval such as those in web search engines.

**Name of the Course: Software Engineering Lab**

<b>Course.No</b>	<b>Outcomes</b>
<b>C317.01</b>	Understand the software engineering methodologies involved in the phases for project development
<b>C317.02</b>	Knowledge about open source tools used for implementing software engineering methods.
<b>C317.03</b>	Ability to develop product-startups implementing software process models in software engineering methods
<b>C317.04</b>	Understanding Open source Tools: StarUML / UMLGraph / Topcased
<b>C317.05</b>	Will have experience and/or awareness of testing problems and will be able to develop a simple testing report

**Name of the Course: Operating System Lab**

<b>Course.No</b>	<b>Outcomes</b>
<b>C318.01</b>	Simulate operating system concepts such as scheduling, deadlock management, file management and memory management
<b>C318.02</b>	Choose the best CPU scheduling algorithm for a given problem instance algorithm
<b>C318.03</b>	Able to implement Identify the performance of various page replacement
<b>C318.04</b>	Develop algorithm for deadlock avoidance, detection and file allocation strategies
<b>C318.05</b>	Use different system calls for writing application programs.

**Name of the Course: Mini Project**

<b>Course.No</b>	<b>Outcomes</b>
<b>C319.01</b>	Identify and define problems in the area of Computer science
<b>C319.02</b>	Explain and illustrate their practical skills needed to understand and modify problems related to programming and designing.
<b>C319.03</b>	Apply current technologies and develop applications for the problems.
<b>C319.04</b>	Practice as teams on multidisciplinary projects with effective writing and communication skills.
<b>C319.05</b>	Apply the engineering and management principles to achieve the goal of the project



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**COURSE OUTCOMES**

**Semester: VII Semester**

**Name of the Course: Cryptography And Network Security**

<b>Course.No</b>	<b>Outcomes</b>
<b>C411.1</b>	Illustrate the different classical encryption techniques
<b>C411.2</b>	Use mathematical concepts for different cryptographic algorithms.
<b>C411.3</b>	Demonstrate cryptographic algorithms for encryption/key exchange.
<b>C411.4</b>	Identify security issues in network, transport and application layers and outline appropriate security protocols.
<b>C411.5</b>	Generate and distribute a PGP key pair and use the PGP package to send an encrypted e-mail message.

**Name of the Course: Data Mining**

<b>Course.No</b>	<b>Outcomes</b>
<b>C412.1</b>	Perform the preprocessing of data and apply mining techniques on it.
<b>C412.2</b>	Identify the association rules, classification and clusters in data sets clusters in large data sets combinations.
<b>C412.3</b>	solve real world problems in business and scientific information using data mining
<b>C412.4</b>	Classify web pages, extracting knowledge from the web.
<b>C412.5</b>	Analyze strengths and limitations of various data mining models.

**Name of the Course: Cloud Computing**

<b>Course.No</b>	<b>Outcomes</b>
<b>C413.1</b>	Understand various service delivery models of a cloud computing architecture.
<b>C413.2</b>	Evaluate the ways in which the cloud can be programmed and deployed combinations.
<b>C413.3</b>	Understanding cloud service providers.
<b>C413.4</b>	Analyzing the Infrastructure as a Service in Cloud computing
<b>C413.5</b>	Apply cloud programming and software environments in different systems

**Name of the Course: Real Time Systems**

<b>Course.No</b>	<b>Outcomes</b>
<b>C414.1</b>	Explain real-time concepts such as preemptive multitasking, task priorities, priority inversions, mutual exclusion, context switching, and synchronization, interrupt latency and response time, and semaphores
<b>C414.2</b>	Describe how a real-time operating system kernel is implemented
<b>C414.3</b>	Explain how tasks are managed.
<b>C414.4</b>	Explain how the real-time operating system implements time management
<b>C414.5</b>	Implement a real-time system on an embedded processor.

<b>C414.6</b>	work with real time operating systems like RT Linux, Vx Works, MicroC /OSII, Tiny Os
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**Name of the Course: Remote Sensing & GIS**

<b>Course.No</b>	<b>Outcomes</b>
<b>C415.1</b>	Understand the concept and principles of Remote sensing, energy interaction with atmosphere & surface features, sensors and satellites.
<b>C415.2</b>	Understand the concept and principles of GIS
<b>C415.3</b>	Understand components of GIS, spatial data & attribute data, data analysis, coordinate system
<b>C415.4</b>	Understand Spatial Data input and Editing methods and spatial data analysis
<b>C415.5</b>	Applications of GIS and creation of maps
<b>C415.6</b>	Applications of GIS in various fields

**Name of the Course: Cryptography And Network Security Lab**

<b>Course.No</b>	<b>Outcomes</b>
<b>C416.01</b>	Implement the methods of conventional encryption.
<b>C416.02</b>	Understand the concepts of public key encryption and number theory.
<b>C416.03</b>	Use various applications of cryptography and security issues practically.
<b>C416.04</b>	Differentiate the concepts of public key encryption algorithms.
<b>C416.05</b>	Understand the concepts of public key real time applications.

**Name of the Course: Industry Oriented Mini Project**

<b>Course.No</b>	<b>Outcomes</b>
<b>C417.01</b>	Acquire practical knowledge in spite of theoretical concepts he/she acquired (Application).
<b>C417.02</b>	Recognise uncertainty of open ended investigations like technical problems and difficulties in collecting the required data (knowledge).
<b>C417.03</b>	Differentiate open ended projects and set of practicals(Comparasion) .
<b>C417.04</b>	Develop their communication and team work skills (synthesys).
<b>C417.05</b>	Asses different tools /soft ware's and protocols which he used in the project(Evaluation).
<b>C417.06</b>	Simulate their Software results and dump into hardware for testing (Analysis)

**Name of the Course: Seminar**

<b>Course.No</b>	<b>Outcomes</b>
<b>C418.01</b>	Improve oral and written communication skills.
<b>C418.02</b>	Explore an appreciation of the self in relation to its larger diverse social and academic contexts.
<b>C418.03</b>	Identify, understand and discuss current, real-world issues
<b>C418.04</b>	Distinguish and integrate differing forms of knowledge and academic disciplinary approaches
<b>C418.05</b>	Apply principles of ethics and respect in interaction with others.

**Name of the Course: Project Stage - I**

<b>Course.No</b>	<b>Outcomes</b>
<b>C419.01</b>	Acquire practical knowledge in spite of theoretical concepts he/she acquired.
<b>C419.02</b>	Analyze uncertainty of open ended investigations like technical problems and difficulties in collecting the required data.

<b>C419.03</b>	Asses different tools /soft ware's and protocols which he used in the project.
<b>C419.04</b>	Simulate their Software results and dump into hardware for testing.