BRILLIANT GRAMMAR SCHOOL EDUCATIONAL SOCIETY'S
GROUP OF INSTITUTIONS-INTEGRATED CAMPUS

(Approved by A.I.C.T.E & P.C.I, New Delhi, Affiliated to JNTUH, Hyderabad)
Abdullapur (V), Abdullapurmet (M), R.R Dist. Hyderabad – 501505
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Computer Science and Engineering I & II Sem   Course Outcomes For The Academic

Year 2021-2022

S.NO.	YEAR/ SEM	COURSE NAME	Course Outcomes
1	II/I	Data Structures	CO1: Ability to select the data structures that efficiently model the information in a problem.
			CO2: Ability to assess efficiency trade-offs among different data structure implementations orcombinations.
			CO3: Implement and know the application of algorithms for sorting and pattern matching.
			CO4: Design programs using a variety of data structures, including hash tables, binary and generaltree structures, search trees, tries, heaps, graphs, and AVL-trees
2	II/I	COMPUTER ORGANIZATION AND ARCHITECTURE	CO1: Understand the basics of instructions sets and their impact on processor design
			CO2: Demonstrate an understanding of the design of the functional units of a digital computer system
			CO3: Evaluate cost performance and design trade-offs in designing and constructing a computerprocessor including memory.
			CO4: Design a pipeline for consistent execution of instructions with minimum hazards.
			CO5: Recognize and manipulate representations of numbers stored in digital computers.
		OBJECT ORIENTED PROGRAMMING	CO1: Able to develop programs with reusability
			CO2: Develop programs for file handling
			CO3: Handle exceptions in programming

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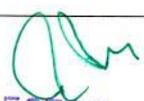Abdullapur (V), Abdullapurmet (M),
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3	II/I	USING C++	**CO4:** Develop applications for a range of problems using object-oriented programming techniques
4	II/I	**ANALOG AND DIGITAL ELECTRONICS**	**CO1:** Know the characteristics of various components
			CO2: Understand the utilization of components
			CO3: Design and analyze small signal amplifier circuits.
			CO4: Learn Postulates of Boolean algebra and to minimize combinational functions
			CO5: Design and analyze combinational and sequential circuits
			CO6: Know about the logic families and realization of logic gates.
5	II/I	**COMPUTER ORIENTED STATISTICAL METHODS**	**CO1:** Apply the concepts of probability and distributions to some case studies
			CO2: Correlate the material of one unit to the material in other units
			CO3: Resolve the potential misconceptions and hazards in each topic of study
			CO4: To measure experimental result based on hypothesis using chi square techniques
6	II/I	**ANALOG AND DIGITAL ELECTRONICS**	**Co1:** Know the characteristics of various components.
			CO2: Understand the utilization of components.
			CO3: Design and analyze small signal amplifier circuits
			CO4: Postulates of Boolean algebra and to minimize combinational functions
			CO5: Design and analyze combinational and sequential circuits
7	II/I	**Data Structure Lab**	**CO1:** Ability to develop C programs for computing and real-life applications using basic elements like control statements, arrays, functions, pointers and strings, and data structures like stacks, queues and linked lists.

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			CO2: Ability to Implement searching and sorting algorithms
8	**II/I**	**C++ LAB**	**CO1:** Ability to develop applications for a range of problems using object-oriented programming techniques
9	**II/I**	**Gender Sensitization Lab**	**CO1:** To develop students' sensibility with regard to issues of gender in contemporary India.
			CO2: To provide a critical perspective on the socialization of men and women.
			CO3: To introduce students to information about some key biological aspects of genders.
			CO4: To expose the students to debates on the politics and economics of work.
			CO5: To help students reflect critically on gender violence
			CO6: To expose students to more egalitarian interactions between men and women
10	**III/I**	**COMPUTER NETWORKS**	**CO1:** Gain the knowledge of the basic computer network technology
			CO2: Gain the knowledge of the functions of each layer in the OSI and TCP/IP reference model
			CO3: Obtain the skills of sub netting and routing mechanisms
			CO4: Familiarity with the essential protocols of computer networks, and how they can be applied innetwork design and implementation.
11	**III/I**	**Software Engineering**	**CO1:** Ability to translate end-user requirements into system and software requirements, using e.g.UML, and structure the requirements in a Software Requirements Document (SRD).
			CO2: Identify and apply appropriate software architectures and patterns to carry out high level designof a system and be able to critically compare alternative choices.
			CO3: Will have experience and/or awareness of testing problems and will be able to develop a simpletesting report

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12	III/I	WEB TECHNOLOGIES	CO1: gain knowledge of client-side scripting, validation of forms and AJAX programming
			CO2: understand server-side scripting with PHP language
			CO3: understand what is XML and how to parse and use XML Data with Java
			CO4: To introduce Server-side programming with Java Servlets and JSP
13	III/I	PRINCIPLES OF PROGRAMMING LANGUAGES	CO1: Acquire the skills for expressing syntax and semantics in formal notation
			CO2: Identify and apply a suitable programming paradigm for a given computing application
			CO3: Gain knowledge of and able to compare the features of various programming languages
			CO4:Combine the constructs of programming structures with efficiently using oops, concurrency management and event handling
			CO5: Demonstrate the working of functional and logic programming language
14	III/I	Formal languages & Automate theory	CO1: Able to understand the concept of abstract machines and their power to recognize thelanguages
			CO2: Able to employ finite state machines for modeling and solving computing problems
			CO3: Able to design context free grammars for formal languages
			CO4: Able to distinguish between decidability and undecidability.
			CO5: Able to gain proficiency with mathematical tools and formal methods.
			CO1:Ability to apply IR principles to locate relevant information large collections of data

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15	III/I	INFORMATION RETRIEVAL SYSTEMS	**CO2:** Ability to design different document clustering algorithms
			CO3: Implement retrieval systems for web search tasks.
			CO4: Design an Information Retrieval System for web search tasks
16	III/I	SOFTWARE ENGINEERING LAB	**CO1:** Ability to translate end-user requirements into system and software requirements
			CO2: Ability to generate a high-level design of the system from the software requirements
			CO3: Will have experience and/or awareness of testing problems and will be able to develop a simple testing report
17	III/I	CN&WT LAB	**CO1:** Implement data link layer farming methods
			CO2: Analyze error detection and error correction codes
			CO3: Implement and analyze routing and congestion issues in network design.
			CO4: Implement Encoding and Decoding techniques used in presentation layer
			CO5: To be able to work with different network tools
18	IV/I	DATA MINING	**CO1:** Ability to understand the types of the data to be mined and present a general classification of tasks and primitives to integrate a data mining system.
			CO2: Apply preprocessing methods for any given raw data.
			CO3: Extract interesting patterns from large amounts of data.
			CO4: Discover the role played by data mining in various fields
			CO5: Choose and employ suitable data mining algorithms to build analytical applications
			CO6: Evaluate the accuracy of supervised and unsupervised models and algorithms

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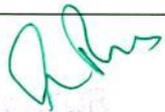of Institutions-Integrated Campus (7Q)

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19	IV-1	CLOUD COMPUTING	**CO1:**Ability to understand various service delivery models of a cloud computing architecture
			CO2: Ability to understand the ways in which the cloud can be programmed and deployed.
			CO3: Understanding cloud service providers.
20	IV-I	SOFTWARE PROCESS & PROJECT MANAGEMENT	**CO1:** Gain knowledge of software economics, phases in the life cycle of software development, project organization, project control and process instrumentation
			CO2: Analyze the major and minor milestones, artifacts and metrics from management and technicalperspective
			CO3: Design and develop software product using conventional and modern principles of softwareproject management
21	IV-I	PRINCIPLES OF PROGRAMMING LANGUAGES	**CO1:**Acquire the skills for expressing syntax and semantics in formal notation
			CO2: Identify and apply a suitable programming paradigm for a given computing application
			CO3: Gain knowledge of and able to compare the features of various programming languages
22	IV/I	PYTHON PROGRAMMING	**CO1:** Examine python syntax and semantics and befluent in the use of python basic types andfunctions.
			CO2: Demonstrate proficiency in handling Exceptions, modules and Files.
			CO3: Create, run and manipulate Python Multithreading programs and use Regular Expressions.
			CO4: Implement GUI Applications related to Web Services in Python.

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			CO5: Develop exemplary applications related to Databases.
23	IV/I	INDUSTRY ORIENTED MINI PROJECT	CO1: Student will able to learn about mini project
24	II/II	DISCRETE MATHEMATICS	CO1: Ability to understand and construct precise mathematical proofs
			CO2: Ability to use logic and set theory to formulate precise statements
			CO3: Ability to analyze and solve counting problems on finite and discrete structures
			CO4: Ability to describe and manipulate sequences
			CO5: Ability to apply graph theory in solving computing problems
25	II/II	OPERATING SYSTEMS	CO1: Will be able to control access to a computer and the files that may be shared
			CO2: Demonstrate the knowledge of the components of computer and their respective roles incomputing.
			CO3: Ability to recognize and resolve user problems with standard operating environments
			CO5: Understanding file system structure and directory structure.

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26	II/II	BUSINESS ECONOMICS AND FINANCIAL ANALYSIS	**CO1:** The students will understand the various Forms of Business and the impact of economic variables on the Business
			CO2: The Demand, Supply, Production, Cost, Market Structure, Pricingaspects are learnt.
			CO3: The Students can study the firm's financial position by analysing the Financial Statements of a Company.
27	II/II	DATABASE MANAGEMENT SYSTEMS	**CO1:** Gain knowledge of fundamentals of DBMS, database design and normal forms
			CO2: Master the basics of SQL for retrieval and management of data.
			CO3: Be acquainted with the basics of transaction processing and concurrency control.
			CO4: Familiarity with database storage structures and access techniques
28	II/II	JAVA PROGRAMMING	**CO1:** Able to solve real world problems using OOP techniques
			CO2: Able to understand the use of abstract classes.
			CO3: Able to solve problems using java collection framework and I/o classes.
			CO4: Able to develop multithreaded applications with synchronization.
			CO5: Able to develop applets for web applications.
			CO6: Able to design GUI based applications
29	II/II	OS LAB	**CO1:**Simulate and implement operating system concepts s
			CO2: Able to implement C programs using Unix system calls
30	II/II	DBMS LAB	**CO1:**Design database schema for a given application and apply

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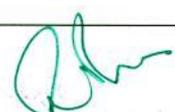Abdullapur (V), Abdullapurmet (M),
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			normalization
			CO2: Acquire skills in using SQL commands for data definition and data manipulation.
			CO3: Develop solutions for database applications using procedures, cursors and triggers
31	II/II	**JAVA LAB**	**CO1:**Able to write programs for solving real world problems using java collection frame work
			CO2: Able to write programs using abstract classes.
			CO3: Able to write multithreaded programs
			CO4: Able to write GUI programs using swing controls in Java.
32	III/II	**CONSTITUTION OF INDIA**	**CO1:** Able to understand the concept of abstract machines and GUI based applications.
			CO2: Able to employ finite state machines for modeling and solving computing problems.
			CO3: Able to design context free grammars for formal languages.
			CO4: Able to distinguish between decidability and undecidability.
			CO5: Able to gain proficiency with mathematical tools and formal methods.
			CO1: Demonstrate the ability to design a compiler given a set of language features.
			CO2: Demonstrate the the knowledge of patterns, tokens & regular expressions for lexical analysis.
			CO3: Acquire skills in using lex tool & yacc tool for devleoping a scanner and parser.
		COMPILER	CO4: Design and implement LL and LR parsers

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33	III/II	DESIGN	CO5: Design algorithms to do code optimization in order to improve the performance of a program interms of space and time complexity
			CO6: Design algorithms to generate machine code.
34	III/II	MACHINE LEARNING	CO1: Understand the concepts of computational intelligence like machine learning
			CO2: Ability to get the skill to apply machine learning techniques to address the real time problemsin different areas
			CO3: Understand the Neural Networks and its usage in machine learning application.
35	III/II	DESIGN AND ANALYSIS OF ALGORITHMS	CO1: Analyze algorithms and improve the efficiency of algorithm for the divide and conquer method.
			CO2: Ability to analyze the performance of algorithms
			CO3: Ability to choose appropriate data structures and algorithm design methods for a specifiedapplication
			CO4: Ability to understand how the choice of data structures and the algorithm design methodsimpact the performance of programs.
36	III/II	SOFTWARE TESTING METHODOLOGIES	CO1: Ability to apply the process of testing and various methodologies in testing for developed software.
			CO2: Ability to write test cases for given software to test it before delivery to the customer.
37	III/II	ML LAB	CO1: understand complexity of Machine Learning algorithms and their limitations;
			CO2: understand modern notions in data analysis-oriented

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			computing;
			CO3:be capable of confidently applying common Machine Learning algorithms in practice and implementing their own;
			CO4:Be capable of performing experiments in Machine Learning using real-world data.
38	III/II	CD LAB	CO1:Design and develop interactive and dynamic web applications using HTML, CSS, JavaScript and XML
			CO2: Apply client-server principles to develop scalable and enterprise web applications.
			CO3:Ability to design, develop, and implement a compiler for any language.
			CO4: Able to use lex and yacc tools for developing a scanner and a parser.
			CO5: Able to design and implement LL and LR parsers.
39	III/II	ES LAB	CO1: : Based on this course, the Engineering graduate will understand /evaluate / develop technologies on the basis of ecological principles and environmental regulations which in turn helps in sustainable development
40	IV/II	ENVIRONMENTAL IMAPCT ASSESSMENT	CO1: Identify the environmental attributes to be considered for the EIA study
			CO2: Formulate objectives of the EIA studies
			CO3: Identify the methodology to prepare rapid EIA
			CO4: Prepare EIA reports and environmental management plans
			CO5: Preparation of EIA for developmental projects
			CO1: Be able to explain real-time concepts such as preemptive multitasking, task priorities, priority inversions, mutual exclusion, context switching, and synchronization, interrupt latency and response time, and

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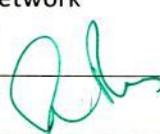|			
41	IV/II	REAL TIME SYTEMS	semaphores.
			CO2: Able describe how a real-time operating system kernel is implemented.
			CO3: Able explain how tasks are managed.
			CO4:Explain how the real-time operating system implements time management.
			CO5: Discuss how tasks can communicate using semaphores, mailboxes, and queues.
			CO6: Be able to implement a real-time system on an embedded processor.
			CO7: Be able to work with real time operating systems like RT Linux, Vx Works, MicroC /OSII, TinyOs.
42	IV/II	Web Services and Service Oriented Architecture	CO1: Basic details of WSDL, UDDI, SOAP
			CO2: Implement WS client and server with interoperable systems.
43	IV/II	PROJECT WORK	CO1: Student will be able to analyze a problem, identify and define the computing requirements appropriate to its solutions.
			CO2: Students will be able to function effectively on teams to accomplish a common goal.
			CO3: Students will be able to use current techniques, skill and tools necessary for computing practices.
			CO4: Students will be able to design and development principles in the construction of software systems of varying complexity.
			CO5: Students will be able to get an eye opener to bridge gap between Academic and real time industry issues on technological front

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Computer Science and Engineering (NETWORKS) I & II Sem   Course Outcomes For The Academic

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S.NO.	YEAR/ SEM	COURSE NAME	Course Outcomes
1	II/I	**Data Structures**	**CO1:** Ability to select the data structures that efficiently model the information in a problem.
			CO2: Ability to assess efficiency trade-offs among different data structure implementations orcombinations.
			CO3: Implement and know the application of algorithms for sorting and pattern matching.
			CO4: Design programs using a variety of data structures, including hash tables, binary and generaltree structures, search trees, tries, heaps, graphs, and AVL-trees
2	II/I	**COMPUTER ORGANIZATION AND ARCHITECTURE**	**CO1:** Understand the basics of instructions sets and their impact on processor design
			CO2: Demonstrate an understanding of the design of the functional units of a digital computer system
			CO3: Evaluate cost performance and design trade-offs in designing and constructing a computerprocessor including memory.
			CO4: Design a pipeline for consistent execution of instructions with minimum hazards.
			CO5: Recognize and manipulate representations of numbers stored in digital computers.
3	II/I	**PYTHON PROGRAMMING**	**CO1:** Examine Python syntax and semantics and be fluent in the use of Python flow control and functions.
			CO2: Demonstrate proficiency in handling Strings and File Systems.
			CO3: Create, run and manipulate Python Programs using core data structures like Lists, Dictionaries and use Regular Expressions.
			CO4: Interpret the concepts of Object-Oriented Programming as used in Python
			CO5: Implement exemplary applications related to Network Programming, Web Services and Databases in Python
			CO1: Know the characteristics of various components

4	II/I	**ANALOG AND DIGITAL ELECTRONICS**	**CO2**: Understand the utilization of components
			CO3: Design and analyze small signal amplifier circuits.
			CO4: Learn Postulates of Boolean algebra and to minimize combinational functions
			CO5: Design and analyze combinational and sequential circuits
			CO6: Know about the logic families and realization of logic gates.
5	II/I	**COMPUTER ORIENTED** **STATISTICAL METHODS**	**CO1:** Apply the concepts of probability and distributions to some case studies
			CO2: Correlate the material of one unit to the material in other units
			CO3: Resolve the potential misconceptions and hazards in each topic of study
			CO4: To measure experimental result based on hypothesis using chi square techniques
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			CO2: Ability to Implement searching and sorting algorithms
8	II/I	**PYTHON PROGRAMMING LAB**	**CO1:** Student should be able to understand the basic concepts scripting and the contributions of scripting language
			CO2: Ability to explore python especially the object-oriented concepts, and the built in objects of Python.
			CO3: Ability to create practical and contemporary applications such as TCP/IP network programming, Web applications, discrete event simulation
			CO1: To develop students' sensibility with regard to issues of gender in contemporary India.
			CO2: To provide a critical perspective on the socialization of men and women.

9	II/I	**Gender Sensitization Lab**	**CO3:** To introduce students to information about some key biological aspects of genders.
			CO4: To expose the students to debates on the politics and economics of work.
			CO5: To help students reflect critically on gender violence
			CO6: To expose students to more egalitarian interactions between men and women
10	II/II	**DISCRETE MATHEMATICS**	**CO1:** Ability to understand and construct precise mathematical proofs
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			CO2: Demonstrate the knowledge of the components of computer and their respective roles incomputing.
			CO3: Ability to recognize and resolve user problems with standard operating environments
			CO4: Gain practical knowledge of how programming languages, operating systems, and architectures interact and how to use each effectively.
13	II/II	**COMPUTER NETWORKS**	**CO1:** Gain the knowledge of the basic computer network technology
			CO2: Gain the knowledge of the functions of each layer in the OSI and TCP/IP reference model
			CO3: Obtain the skills of sub netting and routing mechanisms
			CO4: Familiarity with the essential protocols of computer networks, and how they can be applied innetwork design and implementation.

14	II/II	**JAVA PROGRAMMING**	**CO1:** Able to solve real world problems using OOP techniques
			CO2: Able to understand the use of abstract classes.
			CO3: Able to solve problems using java collection framework and I/o classes.
			CO4: Able to develop multithreaded applications with synchronization.
			CO5: Able to develop applets for web applications.
			CO6: Able to design GUI based applications
15	II/II	**OS LAB**	**CO1:** Simulate and implement operating system concepts s
			CO2: Able to implement C programs using Unix system calls
16	II/II	**COMPUTER NETWORKS LAB**	**CO1:** Implement data link layer farming methods
			CO2: Analyze error detection and error correction codes
			CO3: Implement and analyze routing and congestion issues in network design.
17	II/II	**JAVA PROGRAMMING LAB**	**CO1:** Able to write programs for solving real world problems using java collection frame work
			CO2: Able to write programs using abstract classes.
			CO3: Able to write multithreaded programs
			CO4: Able to write GUI programs using swing controls in Java.
18	II/II	**CONSTITUTION OF INDIA**	**CO1:** Able to understand the concept of abstract machines and GUI based applications.
			CO2: Able to employ finite state machines for modeling and solving computing problems.
			CO3: Able to design context free grammars for formal languages.
			CO4: Able to distinguish between decidability and undecidability.
			CO5: Able to gain proficiency with mathematical tools and formal methods.