

ANNAMACHARYA INSTITUTE OF TECHNOLOGY AND SCIENCES – TIRUPATI
AUTONOMOUS
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
AK20 Course Outcomes

COURSE NAME	COURSE OUTCOMES	
Algebra and Calculus (20ABS9901)	CO1	Develop the use of matrix algebra techniques that is needed by engineers for practical applications.
	CO2	Utilize mean value theorems to real life problems.
	CO3	Familiarize with functions of several variables which is useful in optimization.
	CO4	Students will also learn important tools of calculus in higher dimensions. Students will become familiar with 2- dimensional coordinate systems
	CO5	Students will become familiar with 3- dimensional coordinate systems and also learn the utilization of special functions
Chemistry (20ABS9904)	CO1	Understand the behaviour of, and interactions between mater and energy at both the atomic and molecular levels
	CO2	Compare the materials of construction for battery and electrochemical sensors
	CO3	Understand the preparation, properties, and applications of thermoplastics & thermo settings, elastomers & conducting polymers.
	CO4	HPLC and GC methods used for separation of gaseous and liquid mixtures.
	CO5	Understand the disadvantages of using hard water and select suitable treatments domestically and industrially.
Problem Solving and Programming (20AES0501)	CO1	Construct computer using parts.
	CO2	Recognize the importance of programming language independent constructs
	CO3	Solve computational problems
	CO4	Select the features of C language appropriate for solving a problem
	CO5	Design computer programs for real world problems
	CO6	Organize the data which is more appropriated for solving a problem
Engineering Graphics (20AES0301)	CO1	Draw various curves applied in engineering.
	CO2	Show projections of solids and sections graphically.
	CO3	Draw the development of surfaces of solids.
	CO4	Use computers as a drafting tool.
	CO5	Draw isometric and orthographic drawings using CAD packages.
Information Technology And Numerical Methods (20AES0505)	CO1	Usage of Digital World and Exploring Cyber space
	CO2	Explain the needs of hardware and software required for a computation task
	CO3	Familiarize peripheral devices, networking and internet
	CO4	Analyze the concepts of Errors, Relative and Percentage Errors
	CO5	Analyze the concepts of Algebraic & Transcendental Equations to solve different Engineering problems
	CO6	Analyze Interpolation using the concepts of the Numerical Methods
	CO7	Apply the concepts of Integration in Numerical Methods

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	CO8	Apply the concepts of O.D.E on Numerical Methods
Computer Science And Engineering Workshop (20AES0506)	CO1	Construct a computer from its parts and prepare it for use
	CO2	Develop Documents using Word processors
	CO3	Develop presentations using the presentation tool
	CO4	Perform computations using spreadsheet tool
	CO5	Design Graphics, Videos and Web pages
	CO6	Connect things to computers
Chemistry Lab (20ABS9909)	CO1	To familiarize the students with the basic concepts of chemistry of materials
	CO2	Prepare advanced polymer materials
	CO3	Measure the strength of an acid present in secondary batteries
	CO4	To familiarize with digital and instrumental methods of analysis
Problem Solving And Programming Lab (20AES0503)	CO1	Construct a Computer given its parts
	CO2	Select the right control structure for solving the problem
	CO3	Analyze different sorting algorithms
	CO4	Design solutions for computational problems
	CO5	Develop C programs which utilize the memory efficiently using programming constructs like pointers.
Applied Physics Lab (20ABS9902)	CO1	Analyze the wave properties of light and the interaction of energy with the matter.
	CO2	Apply electromagnetic wave propagation in different guided media
	CO3	Asses the electromagnetic wave propagation and its power in different media
	CO4	Analyze the conductivity of semiconductors.
	CO5	Interpret the difference between normal conductor and superconductor and apply the nonmaterial's for engineering applications
Probability And Statistics (20ABS9911)	CO1	Interpret the association of characteristics and through correlation and regression tools.
	CO2	Make use of the concepts of probability and their applications.
	CO3	Apply discrete and continuous probability distributions.
	CO4	Design the components of a classical hypothesis test for large sample.
	CO5	Design the components of a classical hypothesis test for small samples.
Communicative English (20AHS9901)	CO1	Identify the context, topic, and pieces of specific information from social or transactional dialogues spoken by native speakers of English
	CO2	Formulate sentences using proper grammatical structures and correct word forms
	CO3	Speak clearly on a specific topic using suitable discourse markers in informal discussions
	CO4	Write summaries based on global comprehension of reading/listening texts
	CO5	Produce a coherent paragraph interpreting a figure/graph/chart/table

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	CO6	Produce a coherent paragraph interpreting a figure/graph/chart/table
	CO7	Take notes while listening to a talk/lecture to answer questions
Data Structures (20AES0502)	CO1	Select Appropriate Data Structure for solving a real world problem
	CO2	Select appropriate file organization technique depending on the processing to be done
	CO3	Construct Indexes for Databases
	CO4	Analyse the Algorithms
	CO5	Develop Algorithm for Sorting large files of data
Web Design (20AES0507)	CO1	Add elements to web pages, including colors, text, images, and more
	CO2	Add advanced features to your website including special effects
Communicative English Lab (20AHS9902)	CO1	Remember and understand the different aspects of the English language proficiency with emphasis on LSRW skills
	CO2	Apply communication skills through various language learning activities
	CO3	Analyze the English speech sounds, stress, rhythm, intonation and syllable division for better listening and speaking comprehension.
	CO4	Evaluate and exhibit acceptable etiquette essential in social and professional settings.
	CO5	Create awareness on mother tongue influence and neutralize it in order to improve fluency in spoken English
Applied Physics Lab (20ABS9907)	CO1	Analyze the wave properties of light and the interaction of energy with the matter.
	CO2	Apply electromagnetic wave propagation in different guided media.
	CO3	Asses the electromagnetic wave propagation and its power in different media
	CO4	Analyze the conductivity of semiconductors
	CO5	Interpret the difference between normal conductor and superconductor and apply the nanomaterials for engineering applications
Data Structures Lab (20AES0504)	CO1	Select the data structure appropriate for solving the problem
	CO2	Implement searching and sorting algorithms
	CO3	Design new data types
	CO4	Illustrate the working of stack and queue
	CO5	Organize the data in the form of files
Environmental Studies (20AMC9903)	CO1	Students get sufficient information that clarifies modern environmental concepts like equitable use of natural resources, more sustainable life styles etc.
	CO2	Students realize the need to change their approach, so as to perceive our own environmental issues correctly, using practical approach based on observation and self learning
	CO3	Students become conversant with the fact that there is a need to create a concern for our environment that will trigger pro-environmental action; including simple activities we can do in our daily life to protect it.
	CO4	Interpretation of different types of environmental pollution problems and designing of new solid waste management techniques usage
	CO5	To get knowledge on various environmental acts and to engage all the students life - long learning of rain water harvesting
Discrete	CO1	Apply mathematical logic to solve problems

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Mathematical Structures (20ABS9914)	CO2	Understand the concepts and perform the operations related to sets, relations and functions.
	CO3	Gain the conceptual background needed and identify structures of algebraic nature.
	CO4	Apply basic counting techniques to solve combinatorial problems.
	CO5	Formulate problems and solve recurrence relations.
	CO6	Apply Graph Theory in solving computer science problems
Digital Electronics & Microprocessors (20APC0503)	CO1	Design any Logic circuit using basic concepts of Boolean algebra.
	CO2	Design any Logic circuit using basic concepts of PLDs.
	CO3	Design and develop any application using 8086 Microprocessor.
	CO4	Design and develop any application using 8051 Microcontroller
Database Management Systems (20APC0502)	CO1	Know the fundamentals of Databases
	CO2	Understand SQL and PL/SQL Concepts
	CO3	Design a database for a real-world information system
	CO4	Process and Optimize the query
	CO5	Working of transaction and concurrency techniques in real time applications
Basics of Python Programming (20AES0509)	CO1	Apply the features of Python language in various real applications.
	CO2	Select appropriate data structure of Python for solving a problem.
	CO3	Design object oriented programs using Python for solving real-world problems.
	CO4	Apply modularity to programs
Basics of Electrical & Electronics Engineering (20AES0202)	CO1	Apply concepts of KVL/KCL in solving DC circuits
	CO2	Illustrate working principles of induction motor - DC Motor
	CO3	Identify type of electrical machine based on their operation
	CO4	Describe operation and characteristics of diodes and transistors.
	CO5	Make use of diodes and transistors in simple, typical circuit applications.
	CO6	Understand operation of basic op-amp circuits
Database Management Systems Lab (20APC0505)	CO1	Design database for any real world problem
	CO2	Implement PL/SQL programs
	CO3	Define SQL queries
	CO4	Decide the constraints
	CO5	Investigate for data inconsistency
Basics of Python Programming Lab (20AES0510)	CO1	Write, Test and Debug Python Programs
	CO2	Implement Conditionals and Loops for Python Programs
	CO3	Use functions and represent Compound data using Lists, Tuples and Dictionaries

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	CO4	Read and write data from & to files in Python and develop Application using Pygame
Basics of Electrical & Electronics Engineering Lab (20AES0204)	CO1	Verify Kirchoff's Laws & Superposition theorem for dc supply
	CO2	Analyze the performance of AC and DC Machines by testing.
	CO3	Study I – V Characteristics of PV Cell & Perform speed control of dc shunt motor
	CO4	Ability to construct and operate rectifiers without & with filters
	CO5	Ability to construct and operate BJT & FET Characteristics.
Client Side Scripting (20ASC0501)	CO1	Analyze and understand the basic concepts of web programming.
	CO2	Apply techniques of form validation using Java Script.
	CO3	Describe important concepts related to client side Web Security.
	CO4	Demonstrate the function of Hypertext Markup Language (HTML) in Web communications.
	CO5	Develop the function of JavaScript as a dynamic webpage creating tool
Constitution Of India (20AMC9902)	CO1	Discuss the growth of the demand for civil rights in India for the bulk of Indians before the arrival of Gandhi in Indian politics.
	CO2	Discuss the intellectual origins of the framework of argument that informed the conceptualization of social reforms leading to revolution in India
	CO3	Discuss the circumstances surrounding the foundation of the Congress Socialist Party [CSP] under the leadership of Jawaharlal Nehru and the eventual failure of the proposal of direct elections through adult suffrage in the Indian Constitution.
	CO4	Discuss the Powers and functions of Governor, President, Judiciary
	CO5	Discuss the functions of local administration bodies
Computer Organization (20APC0506)	CO1	Understand computer architecture concepts related to the design of modern processors, memories and I/Os
	CO2	Identify the hardware requirements for cache memory and virtual memory
	CO3	Design algorithms to exploit pipelining and multiprocessors
	CO4	Understand the importance and trade-offs of different types of memories.
	CO5	Identify pipeline hazards and possible solutions to those hazards
Design And Analysis Of Algorithms (20APC0511)	CO1	Analyze the complexity of the algorithms
	CO2	Use techniques divide and conquer, greedy, dynamic programming, backtracking, branch and bound to solve the problems.
	CO3	Identify and analyze criteria and specifications appropriate to new problems, and choose the appropriate algorithmic design technique for their solution.
	CO4	Able to prove that a certain problem is NP-Complete
Operating Systems (20APC0515)	CO1	Realize how applications interact with the operating system
	CO2	Analyze the functioning of a kernel in an Operating system.
	CO3	Summarize resource management in operating systems
	CO4	Analyze various scheduling algorithms
	CO5	Examine concurrency mechanism in Operating Systems
	CO6	Apply memory management techniques in the design of operating systems

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	CO7	Understand the functionality of the file system
	CO8	Compare and contrast memory management techniques.
	CO9	Understand deadlock prevention and avoidance.
	CO10	Perform administrative tasks on Linux based systems
Managerial Economics And Financial Analysis (20AHSMB01)	CO1	Understand the fundamentals of Economics and Managerial economics viz., Demand, Production, cost, revenue and markets.
	CO2	Apply the Concept of Production cost and revenues for effective Business decision
	CO3	Analyze how to invest their capital and maximize returns.
	CO4	Evaluate the capital budgeting techniques.
	CO5	Define the concepts related to financial accounting and management and able to develop the Accounting statements and evaluate the financial performance of business entity
Universal Human Values (20AHS9905)	CO1	Students are expected to become more aware of themselves, and their surroundings (family, society, nature)
	CO2	They would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
	CO3	They would have better critical ability.
	CO4	They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society).
	CO5	It is hoped that they would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction
Object Oriented Programming through Java (20APC0512)	CO1	Understanding the Syntax, Semantics and features of Java Programming Language.
	CO2	To gain knowledge on Object Oriented Programming concepts.
	CO3	Design the method of creating Multi-threading programs and handle exceptions.
	CO4	Understanding the concepts of java Collection Framework and Applets.
	CO5	Ability to create GUI applications & perform event handling.
Computer Organization Lab (20APC0504)	CO1	Represent numbers and perform arithmetic operations.
	CO2	Minimize the Boolean expression using Boolean algebra and design it using logic gates
	CO3	Analyze and design combinational circuit.
	CO4	Design and develop sequential circuits
	CO5	Understand and apply the working of different operations on binary numbers
Object Oriented Programming through Java Lab (20APC0514)	CO1	Demonstrate java compiler and eclipse platform and learn how to use net beans IDE to create java application
	CO2	Ability to create user friendly interfaces
	CO3	Ability to solve the problem using object oriented approach and design solutions which are robust
	CO4	Implement exception handling and Templates
Operating Systems Lab (20APC0513)	CO1	Ensure the development of applied skills in operating systems related areas.
	CO2	Able to write software routines modules or implementing various concepts of operating system

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Server Side Scripting (20ASC0502)	CO1	Learn the installation guide of MYSQL,XAMPP5,APACHE and PHP
	CO2	Able to design code for simple dynamic web pages
	CO3	Design PHP and SQL/MySQL Integration.
	CO4	Design Basic Projects like Creating an Online Address Book - Creating a Simple Discussion Forum etc.
	CO5	Able to provide protection to web server