



ACE

Engineering College

An Autonomous Institution

(NBA ACCREDITED B.TECH COURSES, ACCORDED NAAC 'A' GRADE)

Ghatkesar, Hyderabad- 501 301

R22- B.TECH. FOUR YEAR DEGREE COURSE

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE STRUCTURE – II Year I SEM

COURSE STRUCTURE

II Year				I Semester			
S.No.	Course Type	Course Code	Course Title	Periods Per Week			Credits
				L	T	P	
1	ESC	EC301ES	Analog and Digital Electronics	3	0	0	3
2	PCC	CS302PC	Data structures	3	1	0	4
3	BSC	MA303BS	Computer Oriented Statistical Methods	3	1	0	4
4	PCC	CS304PC	Computer Organization and Architecture	3	0	0	3
5	PCC	CS305PC	Object Oriented Programming using C++	2	0	0	2
6	ESC	EC306ES	Analog and Digital Electronics Lab	0	0	2	1
7	PCC	CS307PC	Data Structures Lab	0	0	3	1.5
8	PCC	CS308PC	IT Workshop Lab	0	0	3	1.5
9	PCC	CS309PC	C++ Programming Lab	0	0	2	1
10	MC	*MC309	Gender Sensitization Lab	0	0	2	0
Total				14	2	12	21

EC301ES: ANALOG AND DIGITAL ELECTRONICS

B.Tech. II Year I Semester								
Course Code	Category	Hours/Week			Credits	Maximum Marks		
EC301ES	ESC	L	T	P	C	CIA	SEE	Total
		3	0	0	3	30	70	100
Contact Classes: 45	Tutorial Classes: 0	Practical Classes: 0			Total Classes: 45			
Prerequisite: Nil								
Course Objectives: <ul style="list-style-type: none"> To introduce components such as diodes, BJTs and FETs. To know the applications of components. To give understanding of various types of amplifier circuits To learn basic techniques for the design of digital circuits and fundamental concepts used in the design of digital systems. To understand the concepts of combinational logic circuits and sequential circuits. 								
Course Outcomes: <p>Upon completion of the Course, the students will be able to:</p> <ul style="list-style-type: none"> Know the characteristics of various components. Understand the utilization of components. Design and analyze small signal amplifier circuits. Learn Postulates of Boolean algebra and to minimize combinational functions Design and analyze combinational and sequential circuits Know about the logic families and realization of logic gates. 								
Unit -1	Diodes and Applications					No. of Classes: 09		
Junction diode characteristics: Open circuited p-n junction, p-n junction as a rectifier, V-I characteristics, effect of temperature, diode resistance, diffusion capacitance, diode switching times, breakdown diodes, Tunnel diodes, photo diode, LED. Diode Applications - clipping circuits, comparators, Half wave rectifier, Full wave rectifier, rectifier with capacitor filter.								
Unit -2	BJTs					No. of Classes: 09		
Transistor characteristics: The junction transistor, transistor as an amplifier, CB, CE, CC configurations, comparison of transistor configurations, the operating point, self-bias or Emitter bias, bias compensation, thermal runaway and stability, transistor at low frequencies, CE amplifier response, gain bandwidth product, Emitter follower, RC coupled amplifier, two cascaded CE and multi stage CE amplifiers.								
Unit -3	FETs and Digital Circuits					No. of Classes: 09		

FETs: JFET, V-I characteristics, MOSFET, low frequency CS and CD amplifiers, CS and CD amplifiers.		
Digital Circuits: Digital (binary) operations of a system, OR gate, AND gate, NOT, EXCLUSIVE OR gate, De Morgan Laws, NAND and NOR DTL gates, modified DTL gates, HTL and TTL gates, output stages, RTL and DCTL, CMOS, Comparison of logic families.		
Unit -4	Combinational Logic Circuits	No. of Classes: 09
Basic Theorems and Properties of Boolean Algebra, Canonical and Standard Forms, Digital Logic Gates, The Map Method, Product-of-Sums Simplification, Don't-Care Conditions, NAND and NOR Implementation, Exclusive-OR Function, Binary Adder-Subtractor, Decimal Adder, Binary Multiplier, Magnitude Comparator, Decoders, Encoders, Multiplexers.		
Unit -5	Sequential Logic Circuits	No. of Classes: 09
Sequential Circuits, Storage Elements: Latches and flip flops, Analysis of Clocked Sequential Circuits, State Reduction and Assignment, Shift Registers, Ripple Counters, Synchronous Counters, Random-Access Memory, Read-Only Memory.		
Text Books:		
<ol style="list-style-type: none"> 1. Integrated Electronics: Analog and Digital Circuits and Systems, 2/e, Jaccob Millman, Christos Halkias and Chethan D. Parikh, <i>Tata McGraw-Hill Education</i>, India, 2010. 2. Digital Design, 5/e, Morris Mano and Michael D. Cilette, <i>Pearson</i>, 2011. 		
Reference Books:		
<ol style="list-style-type: none"> 1. Electronic Devices and Circuits, Jimmy J Cathey, <i>Schaum's outline series</i>, 1988. 2. Digital Principles, 3/e, Roger L. Tokheim, <i>Schaum's outline series</i>, 1994. 		
Web References:		
<ol style="list-style-type: none"> 1. https://www.geeksforgeeks.org/digital-electronics-logic-design-tutorials/ 2. https://silo.tips/download/analog-digital-electronics 		
E-Text Books:		
<ol style="list-style-type: none"> 1. https://www.google.com/url?sa=t&source=web&rct=j&url=http://csma31.csm.jmu.edu/physics/giovanetti/EE/digi.pdf&ved=2ahUKEwjxv5P17rDqAhX37nMBHTuPAI0QFjAAegQIAxAB&usg=AOvVaw2Jmvz2ThBCt02an4j0aaA6&cshid=1593772004644 2. https://drive.google.com/file/d/0B9LJy8vattSMTTJNVmFrMXc4cFk/view 		

CS302PC: DATA STRUCTURES

B.Tech. II Year I Semester								
Course Code	Category	Hours/Week			Credits	Maximum Marks		
CS302PC	PCC	L	T	P	C	CIA	SEE	Total
		3	1	0	4	30	70	100
Contact Classes: 45	Tutorial Classes:15	Practical Classes: Nil			Total Classes: 60			
Prerequisite: A course on “Programming for Problem Solving”.								
Course Objectives:								
<ul style="list-style-type: none"> Exploring basic data structures such as stacks and queues. Introduces a variety of data structures such as hash tables, search trees, tries, heaps, graphs. Introduces sorting and pattern matching algorithms 								
Course Outcomes:								
<ul style="list-style-type: none"> Ability to select the data structures that efficiently model the information in a problem. Ability to assess efficiency trade-offs among different data structure implementations or combinations. Implement and know the application of algorithms for sorting and pattern matching. Design programs using a variety of data structures, including hash tables, binary and general tree structures, search trees, tries, heaps, graphs, and AVL-trees. 								
Unit -1	Introduction to Data Structures					No. of Classes: 12		
Abstract data types, Linear list – singly linked list implementation, insertion, deletion and searching operations on linear list, Stacks-Operations, linked list representations of stacks , stack applications, Queues-operations, linked list representations of Queue .								
Unit -2	Dictionaries & Hash Table Representation					No. of Classes: 12		
Linear list representation, skip list representation, operations - insertion, deletion and searching. Hash functions, collision resolution-separate chaining, open addressing-linear probing, quadratic probing, double hashing, rehashing, extendible hashing.								
Unit -3	Search Trees:					No. of Classes: 12		
Binary Search Trees, Definition, Implementation, Operations- Searching, Insertion and Deletion, AVL Trees, Definition, Height of an AVL Tree, Operations – Insertion, Deletion and Searching, Red –Black, Splay Trees.								
Unit -4	Graphs & Sorting					No. of Classes: 12		
Implementation Methods. Graph Traversal Methods. Heap Sort, External Sorting- Model for external sorting, Merge Sort.								

Unit -5	Pattern Matching and Tries	No. of Classes: 12
<p>Pattern matching algorithms-Brute force, the Boyer –Moore algorithm, the Knuth-Morris-Pratt algorithm, Standard Tries, Compressed Tries, Suffix tries.</p>		
<p>Text Books:</p> <ol style="list-style-type: none"> 1. Fundamentals of Data Structures in C, 2nd Edition, E. Horowitz, S. Sahni and Susan Anderson Freed, <i>Universities Press</i>. 2. Data Structures using C – A. S. Tanenbaum, Y. Langsam, and M.J. Augenstein, <i>PHI/Pearson Education</i>. 		
<p>Reference Books:</p> <ol style="list-style-type: none"> 1. Data Structures: A Pseudocode Approach with C, 2nd Edition, R. F. Gilberg and B.A. Forouzan, Cengage Learning. 		
<p>Web References:</p>		
<p>E-Text Books:</p>		

MA303BS : COMPUTER ORIENTED STATISTICAL METHODS

B.Tech. II Year I Semester								
Course Code	Category	Hours/Week			Credits	Maximum Marks		
MA303BS	BSC	L	T	P	C	CIA	SEE	Total
		3	1	-	4	30	70	100
Contact Classes: 45	Tutorial Classes: 15	Practical Classes: Nil			Total Classes: 60			
Prerequisite: Mathematics courses of first year of study.								
Course Objectives: To learn <ul style="list-style-type: none"> • The theory of Probability, and probability distributions of single and multiple random variables • The sampling theory and testing of hypothesis and making inferences • Stochastic process and Markov chains. 								
Course Outcomes: After learning the contents of this paper the student must be able to <ul style="list-style-type: none"> • Apply the concepts of probability and distributions to some case studies • Correlate the material of one unit to the material in other units • Resolve the potential misconceptions and hazards in each topic of study. 								
Unit - 1	Probability, Random Variables and Probability Distributions				No.of Classes: 09(L), 03(T)			
Probability: Sample Space, Events, Counting Sample Points, Probability of an Event, Additive Rules, Conditional Probability, Independence, and the Product Rule, Bayes' Rule. Random Variables and Probability Distributions: Concept of a Random Variable, Discrete Probability Distributions, Continuous Probability Distributions, Statistical Independence.								
Unit - 2	Mathematical Expectation, Discrete Probability Distributions				No.of Classes: 09(L), 03(T)			
Mathematical Expectation: Mean of a Random Variable, Variance and Covariance of Random Variables, Means and Variances of Linear Combinations of Random Variables, Chebyshev's Theorem. Discrete Probability Distributions: Introduction and Motivation, Binomial, Distribution, Geometric Distributions and Poisson distribution.								
Unit - 3	Continuous Probability Distributions, Fundamental Sampling Distributions				No.of Classes: 09(L), 03(T)			
Continuous Probability Distributions : Continuous Uniform Distribution, Normal Distribution, Areas under the Normal Curve, Applications of the Normal Distribution, Normal Approximation to the Binomial, Gamma and Exponential Distributions. Fundamental Sampling Distributions: Random Sampling, Some Important Statistics, Sampling Distributions, Sampling Distribution of Means and the Central Limit Theorem, Sampling Distribution of S^2 , t –Distribution, F-Distribution.								

Unit - 4	Estimation & Tests of Hypotheses, Statistical Hypotheses	No.of Classes: 09(L), 03(T)
<p>Estimation & Tests of Hypotheses: Introduction, Statistical Inference, Classical Methods of Estimation. Estimating the Mean, Standard Error of a Point Estimate, Prediction Intervals, Tolerance Limits, Estimating the Variance, Estimating a Proportion for single mean , Difference between Two Means, between Two Proportions for Two Samples and Maximum Likelihood Estimation.</p> <p>Statistical Hypotheses: General Concepts, Testing a Statistical Hypothesis, Tests Concerning a Single Mean, Tests on Two Means, Test on a Single Proportion, Two Samples: Tests on Two Proportions.</p>		
Unit - 5	Stochastic Processes and Markov Chains	No.of Classes: 09(L), 03(T)
<p>Stochastic Processes and Markov Chains: Introduction to Stochastic processes- Markov process. Transition Probability, Transition Probability Matrix, First order and Higher order Markov process, n-step transition probabilities, Markov chain, Steady state condition, Markov analysis.</p>		
<p>Text Books:</p> <ol style="list-style-type: none"> 1. Ronald E. Walpole, Raymond H. Myers, Sharon L. Myers, Keying Ye, Probability & Statistics for Engineers & Scientists, 9th Ed. Pearson Publishers. 2. S C Gupta and V K Kapoor, Fundamentals of Mathematical statistics, Khanna publications. 		
<p>Reference Books:</p> <ol style="list-style-type: none"> 1. T.T. Soong, Fundamentals of Probability And Statistics For Engineers, John Wiley & Sons Ltd, 2004. 2. Sheldon M Ross, Probability and statistics for Engineers and scientists, Academic Press. 3. S. D. Sharma, Operations Research, Kedarnath and Ramnath Publishers, Meerut, Delhi 		
<p>Web References:</p> <ol style="list-style-type: none"> 1) SWAYAM Online Courses https://storage.googleapis.com/uniquecourses/online.html 2) Directory of Open Access Journals https://doaj.org/ 3) Springer Open Journals https://www.springeropen.com/journals 4) UG/PG MOOCs http://ugcmoocs.inflibnet.ac.in/ugcmoocs/moocs_courses.php 		
<p>E-Text Books:</p> <ol style="list-style-type: none"> 1) National Digital Library: https://ndl.iitkgp.ac.in/ 2) NCERT Text Books http://ncert.nic.in/textbook/textbook.htm 3) Directory of Open Access Books https://www.doabooks.org/ 		

CS304PC: COMPUTER ORGANIZATION and ARCHITECTURE

B.Tech. II Year I Semester								
Course Code	Category	Hours/Week			Credits	Maximum Marks		
CS304PC	PCC	L	T	P	C	CIA	SEE	Total
		3	0	0	3	30	70	100
Contact Classes: 50	Tutorial Classes: 0	Practical Classes: 0			Total Classes: 50			
Prerequisite: Nil								
Course Objectives:								
<ul style="list-style-type: none"> Students should grasp the basic concepts of computer organization and microprocessors, and understand the key skills needed for constructing cost-effective computer systems. To familiarize the students with the assembly language programming and interfacing of microprocessors. 								
Course Outcomes:								
At the end of the Course Student will be able to:								
<ul style="list-style-type: none"> Master the binary and hexadecimal number systems including computer arithmetic. (L1) Understand the basic components and the design of CPU, ALU , Memory and Control Unit.(L2) Analyze the instruction set, instruction formats and addressing modes of 8086 and select appropriate for solving real world problems.(L3) Apply knowledge and demonstrate programming proficiency using the various addressing modes and data transfer instructions of the target microprocessor.(L3) Design a pipeline for consistent execution of instructions with minimum hazards.(L4) 								
Unit - 1	Digital Computers					No.of Classes: 10		
Introduction, Block diagram of Digital Computer, Definition of Computer Organization, Computer Design and Computer Architecture. Register Transfer Language and Micro operations: Register Transfer language, Register Transfer, Bus and memory transfers, Arithmetic Micro operations, logic micro operations, shift micro operations, Arithmetic logic shift unit. Basic Computer Organization and Design: Instruction codes, Computer Registers, Computer instructions, Timing and Control, Instruction cycle, Memory Reference Instructions, Input – Output and Interrupt. CISC Characteristics, RISC Characteristics.								
Unit - 2	Microprogrammed Control					No.of Classes: 10		
Control memory, Address sequencing, micro program example, design of control unit. Central Processing Unit: General Register Organization, Stack Organization, Instruction Formats, Addressing modes, Data Transfer and Manipulation, Program Control Instructions, Zero, One, Two and Three address instructions.								
Unit - 3	Data Representation & Computer Arithmetic					No.of Classes: 10		
Data types, Complements, Fixed Point Representation, Floating Point Representation. Addition and subtraction, multiplication Algorithms, Division Algorithms, Floating – point Arithmetic operations								
Unit - 4	Input-Output Organization					No.of Classes: 10		

Input-Output Interface, Asynchronous data transfer, Modes of Transfer, Priority Interrupt Direct memory Access.

Memory Organization: Memory Hierarchy, Main Memory, Auxiliary memory, Associate Memory, Cache Memory.

Unit - 5

Pipeline and Vector Processing

No.of Classes: 10

Parallel Processing, Pipelining, Arithmetic Pipeline, Instruction Pipeline, RISC Pipeline, Vector Processing, Array Processor.

8086 Processor: Register Organization of 8086, Architecture, PIN diagram, Minimum and Maximum Modes, Instruction formats, Addressing Modes, Instruction set, Assembler Directives and Operators.

Assembly Language Programming with 8086: Assembly Language Example programs.

Text Books:

1. Computer System Architecture – M. Moris Mano, Third Edition, Pearson/PHI.

Reference Books:

1. Computer Organization – Car Hamacher, ZvonksVranesic, SafeaZaky, VthEdition, McGraw Hill.
2. Computer Organization and Architecture – William Stallings Sixth Edition, Pearson/PHI.
3. Structured Computer Organization – Andrew S. Tanenbaum, 4thEdition, PHI/Pearson.

Web References:

0. <https://nptel.ac.in/courses/106/105/106105163/>

E-Text Books:

1. https://www.academia.edu/31003870/Computer_System_Architecture_3rd_Ed_by_M_Morris_Mano_text.pdf

CS305PC: OBJECT ORIENTED PROGRAMMING USING C++

B.Tech. II Year I Semester								
Course Code	Category	Hours/Week			Cre dits	Maximum Marks		
CS305PC	PCC	L	T	P	C	CIA	SEE	Total
		2	0	0	2	30	70	100
Contact Classes:50	Tutorial Classes:	Practical Classes: Nil			Total Classes:50			
Prerequisite: A course on “Programming for Problem Solving using C”.								
Course Objectives:								
<ul style="list-style-type: none"> • Introduces Object Oriented Programming concepts using the C++language. • Introduces the principles of data abstraction, inheritance andpolymorphism; • Introduces the principles of virtual functions andpolymorphism • Introduces handling formatted I/O and unformattedI/O • Introduces exceptionhandling 								
Course Outcomes:								
<ul style="list-style-type: none"> • Able to develop programs withreusability • Develop programs for filehandling • Handle exceptions inprogramming • Develop applications for a range of problems using object-oriented programmingtechniques 								
Unit - 1	Object-Oriented Thinking & C++ Basics					No. of Classes: 09		
<p>Different paradigms for problem solving, need for OOP paradigm, differences between OOP and Procedure oriented programming, Overview of OOP concepts- Abstraction, Encapsulation, Inheritance and Polymorphism.</p> <p>Structure of a C++ program, Data types, Declaration of variables, Expressions, Operators, Operator Precedence, Evaluation of expressions, Type conversions, Pointers, Arrays, Pointers and Arrays, Strings, Structures, References. Flow control statement- if, switch, while, for, do, break, continue, goto statements. Functions - Scope of variables, Parameter passing, Default arguments, inline functions, Recursive functions, Pointers to functions. Dynamic memory allocation and de-allocation operators-new and delete, Preprocessor directives.</p>								
Unit - 2	C++ Classes and Data Abstraction					No. of Classes: 09		
<p>Class definition, Class structure, Class objects, Class scope, this pointer, Friends to a class, Static class members, Constant member functions, Constructors and Destructors, Dynamic creation and destruction of objects, Data abstraction, ADT and information hiding.</p>								
Unit - 3	Inheritance					No. of Classes: 10		
<p>Inheritance: Defining a class hierarchy, Different forms of inheritance, Defining the Base and Derived classes, Access to the base class members, Base and Derived class construction, Destructors, Virtual base class.</p> <p>Virtual Functions and Polymorphism: Static and Dynamic binding, virtual functions, Dynamic binding through virtual functions, Virtual function call</p>								

mechanism, Pure virtual functions, Abstract classes, Implications of polymorphic use of classes, Virtual destructors		
Unit - 4	C++ I/O	No. of Classes: 10
I/O using C functions, Stream classes hierarchy, Stream I/O, File streams and String streams, Overloading operators, Error handling during file operations, FormattedI/O.		
Unit - 5	Exception Handling	No. of Classes: 12
Benefits of exception handling, Throwing an exception, The try block, Catching anexception, Exception objects, Exception specifications, Stack unwinding, Rethrowing an exception, Catching all exceptions.		
Text Books:		
<ol style="list-style-type: none"> 1. The Complete Reference C++, 4thEdition, Herbert Schildt, Tata McGrawHill. 2. Problem solving with C++: The Object of Programming, 4thEdition, Walter Savitch, Pearson Education. 		
Reference Books:		
<ol style="list-style-type: none"> 1. The C++ Programming Language, 3rd Edition, B. Stroutstrup, PearsonEducation. 2. OOP in C++, 3rd Edition, T. Gaddis, J. Walters and G. Muganda, Wiley Dream TechPress. 3. Object Oriented Programming in C++, 3rd Edition, R. Lafore, Galigotia Publications PvtLtd. 		
Web References:		
E-Text Books:		

EC306ES: ANALOG AND DIGITAL ELECTRONICS LAB

B.Tech. II Year I Semester								
Course Code	Category	Hours/Week			Credits	Maximum Marks		
EC306ES	ESC	L	T	P	C	CIA	SEE	Total
		0	0	2	1	30	70	100
Contact Classes: 0	Tutorial Classes: 0	Practical Classes: 45			Total Classes: 45			
Prerequisite: Nil								
Course Objectives:								
<ul style="list-style-type: none"> • To introduce components such as diodes, BJTs and FETs. • To know the applications of components. • To give understanding of various types of amplifier circuits • To learn basic techniques for the design of digital circuits and fundamental concepts used in the design of digital systems. • To understand the concepts of combinational logic circuits and sequential circuits. 								
List of Experiments:								
<ol style="list-style-type: none"> 1. Full Wave Rectifier with & without filters 2. Common Emitter Amplifier Characteristics 3. Common Base Amplifier Characteristics 4. Common Source amplifier Characteristics 5. Measurement of h-parameters of transistor in CB, CE, CC configurations 6. Input and Output characteristics of FET in CS configuration 7. Realization of Boolean Expressions using Gates 8. Design and realization logic gates using universal gates 9. generation of clock using NAND / NOR gates 10. Design a 4 – bit Adder /Subtractor 11. Design and realization a Synchronous and Asynchronous counter using flip-flops 12. Realization of logic gates using DTL, TTL, ECL etc. 								

CS307PC: DATA STRUCTURES LAB

B.Tech. II Year I Semester								
Course Code	Category	Hours/Week			Credits	Maximum Marks		
CS307PC	PCC	L	T	P	C	CIA	SEE	Total
				0	0	3	1.5	30
Contact Classes: 0	Tutorial Classes: 0	Practical Classes: 45			Total Classes: 45			
Prerequisite: A Course on “Programming for problem solving”.								
Course Objectives:								
<ul style="list-style-type: none"> • It covers various concepts of C programming language • It introduces searching and sorting algorithms • It provides an understanding of data structures such as stacks and queues. 								
List of Experiments:								
<ol style="list-style-type: none"> 1. Write a program that uses functions to perform the following operations on singly linked list: <ol style="list-style-type: none"> i) Creation ii) Insertion iii) Deletion iv) Traversal 2. Write a program that uses functions to perform the following operations on doubly linked list: <ol style="list-style-type: none"> i) Creation ii) Insertion iii) Deletion iv) Traversal 3. Write a program that uses functions to perform the following operations on circular linked list: <ol style="list-style-type: none"> i) Creation ii) Insertion iii) Deletion iv) Traversal 4. Write a program that implement stack (its operations) using <ol style="list-style-type: none"> i) Arrays ii) Pointers 5. Write a program that implement Queue (its operations) using <ol style="list-style-type: none"> i) Arrays ii) Pointers 6. Write a program that implements the following sorting methods to sort a given list of integers in ascending order <ol style="list-style-type: none"> i) Bubble sort ii) Selection sort iii) Insertion sort 7. Write a program that use both recursive and non recursive functions to perform the following searching operations for a Key value in a given list of integers: <ol style="list-style-type: none"> i) Linear search ii) Binary search 8. Write a program to implement the tree traversal methods. 9. Write a program to implement the graph traversal methods. 								
List of Equipment/Software (with Specifications or Range) Required:								
A Computer System with Ubuntu operating system and GCC Compiler								

CS308PC: ITWORKSHOP LAB

B.Tech. II Year I Semester								
Course Code	Category	Hours/Week			Credits	Maximum Marks		
CS308PC	PCC	L	T	P	C	CIA	SEE	Total
		0	0	3	1.5	30	70	100
Contact Classes: 0	Tutorial Classes: 0	Practical Classes: 45			Total Classes: 45			
Prerequisite: Nil								
Course Objectives:								
<ul style="list-style-type: none"> IT Essentials is a training lab course to get training on PC Hardware, Internet & World Wide Web, and Productivity tools for documentation, Spreadsheet computations, and Presentation. To introduce a personal computer and its basic peripherals, the process of assembling a personal computer, installation of system software like MS Windows, Linux and the required device drivers, hardware and software level troubleshooting process. To introduce connecting the PC on to the internet from home and workplace and effectively usage of the internet, Usage of web browsers, email, newsgroups and discussion forums. To get knowledge in awareness of cyber hygiene, i.e., protecting the personal computer from getting infected with the viruses, worms and other cyber attacks. To introduce the usage of Productivity tools in crafting professional word documents, excel spreadsheets and power point presentations using open office tools and LaTeX. 								
List of Experiments:								
INTRODUCTION TO COMPUTERS								
Task 1:								
Generation of computers, computing environments, identifying the peripherals of a computer, components in CPU and its functions. Block diagram of the CPU.								
ASSEMBLING AND DISASSEMBLING								
Task 1:								
A practice on disassembling the components of a PC and assembling them back to working condition.								
SOFTWARE INSTALLATION								
Task 1:								
Operating System Installation – Windows and Linux installation.								
Task 2:								

HARDWARE AND SOFTWARE TROUBLESHOOTING

Task 1:

Hardware Troubleshooting: Students have to be given a PC which does not boot due to improper assembly or defective peripherals. They should identify the problem and fix it to get the computer back to working condition.

Task 2:

Software Troubleshooting: Students have to be given a malfunctioning CPU due to system software problems. They should identify the problem and fix it to get the computer back to working condition.

INTERNET & WORLD WIDE WEB

Task 1:

Orientation & Connectivity Boot Camp: Students should get connected to their Local Area Network and access the Internet. In the process they should configure the TCP/IP setting. Finally student should demonstrate, to the instructor, how to access the websites and e-mail. If there is no internet connectivity preparations need to be made by the instructors to simulate the WWW on the LAN.

Task 2: Computer Networking: MAN, WAN, Network Interface Card, Introduction of Networking devices.

Task 3:

Web Browsers, Surfing the Web: Students customize their web browsers with the LAN proxy settings, bookmarks, search toolbars and pop up blockers. Also, plug-ins like Macromedia Flash and JRE for applets should be configured.

Task 4:

Search Engines & Netiquette: Students should know what search engines are and how to use the search engines. A few topics would be given to the students for which they need to search on Google. This should be demonstrated to the instructors by the student.

Task 5:

Cyber Hygiene: Students would be exposed to the various threats on the internet and would be asked to configure their computer to be safe on the internet. They need to first install antivirus software, configure their personal firewall and windows update on their computer. Then they need to customize their browsers to block pop ups, block active x downloads to avoid viruses and/or worms.

LaTeX and WORD

Word and LaTeX Orientation: Importance of LaTeX and MS office 2007. Overview

of LaTeX and Microsoft (MS) office 2007 - Accessing, overview of toolbars, saving files, Using help and resources, rulers, format painter in word.

Task 1:

Using LaTeX and Word to create project certificate: Features to be covered:- Drop Cap and Character Spacing in word, Formatting Fonts, Applying Text effects, Borders and Colors, Inserting Header and Footer, Using Date and Time option in both LaTeX and Word

Task 2: Creating project abstract Features to be covered: Formatting Styles, Inserting table, Cell alignment, Bullets and Numbering, Changing Text Direction, Footnote, Hyperlink, Symbols, page numbering, Spell Check and Track Changes.

Task 3:

Creating a Newsletter: Features to be covered:- Table of Content, Newspaper columns, Images from files and clipart, Drawing toolbar and Word Art, Formatting Images, Textboxes, Paragraphs and Mail Merge in word.

Excel

Excel Orientation: Importance of MS Excel 2007. Using Excel – Accessing, overview of toolbars, saving excel files, Using help and resources.

Task 1:

Creating a Scheduler: Features to be covered: Gridlines, Format Cells, Summation, auto fill, Formatting Text.

Task 2:

Calculating GPA: Features to be covered:- Cell Referencing, Formulae in excel – average, standard deviation, Charts, Renaming and Inserting worksheets, Hyper linking, Count function, LOOKUP/VLOOKUP.

Task 3:

Performance Analysis: Features to be covered: Split cells, freeze panes, group and outline, Sorting, Boolean and logical operators, Conditional formatting.

Power Point

Task 1: Students will be working on basic power point utilities and tools which help them create basic power point presentation. Topic covered during this week includes: - PPT Orientation, Slide Layouts, Inserting Text, Word Art, Formatting Text, Bullets and Numbering, Auto Shapes, Lines and Arrows.

Task 2: Topic covered during this week includes: Hyperlinks, Inserting –Images, Clip Art, Audio, Video, Objects, Tables and Charts.

Task 3: Topic covered during this week includes: - Master Layouts (slide, template, and notes), Types of views (basic, presentation, slide sorter, notes etc), and Inserting – Background, textures, Design Templates, Hidden slides.

List of Equipment/Software (with Specifications or Range) Required:

- Assembled Systems
- System with Latex
- System with Internet
- System with MSOFFICE



Member Secretary



Chairman

CS309PC: C++ PROGRAMMING LAB

B.Tech. II Year I Semester								
Course Code	Category	Hours/Week			Credits	Maximum Marks		
CS309PC	PCC	L	T	P	C	CIA	SEE	Total
		0	0	2	1	30	70	100
Contact Classes: 0	Tutorial Classes: 0	Practical Classes: 45			Total Classes: 45			
Prerequisite: A course on "Programming for Problem Solving".								
Course Objectives: <ul style="list-style-type: none">• Introduces object-oriented programming concepts using the C++ language.• Introduces the principles of data abstraction, inheritance and polymorphism;• Introduces the principles of virtual functions and polymorphism• Introduces handling formatted I/O and unformatted I/O• Introduces exception handling								
List of Experiments: <ol style="list-style-type: none">1. Write a C++ Program to display Names, Roll No., and grades of 3 students who have appeared in the examination. Declare the class of name, Roll No. and grade. Create an array of class objects. Read and display the contents of the array.2. Write a C++ program to declare Struct. Initialize and display contents of member variables.3. Write a C++ program to declare a class. Declare pointer to class. Initialize and display the contents of the class member.4. Given that an EMPLOYEE class contains following members: data members: Employee number, Employee name, Basic, DA, IT, Net Salary and print data members.5. Write a C++ program to read the data of N employee and compute Net salary of each employee (DA=52% of Basic and Income Tax (IT) =30% of the gross salary).6. Write a C++ to illustrate the concepts of console I/O operations.7. Write a C++ program to use scope resolution operator. Display the various values of the same variables declared at different scope levels.8. Write a C++ program to allocate memory using new operator.9. Write a C++ program to create multilevel inheritance. (Hint: Classes A1, A2, A3)10. Write a C++ program to create an array of pointers. Invoke functions using array objects.								

11. Write a C++ program to use pointer for both base and derived classes and call the member function. Use Virtual keyword.

List of Equipment/Software (with Specifications or Range) Required:

A Computer System with Ubuntu operating system and GCC Compiler



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***MC309: GENDER SENSITIZATION LAB**

B.Tech. II Year I Semester								
Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P		C	CIA	SEE
*MC309	MC	0	0	2	0	30	70	100
		Practical Classes: 45			Total Classes: 45			
Contact Classes: 0	Tutorial Classes: 0							

COURSE DESCRIPTION

This course offers an introduction to Gender Studies, an interdisciplinary field that asks critical questions about the meanings of sex and gender in society. The primary goal of this course is to familiarize students with key issues, questions and debates in Gender Studies, both historical and contemporary. It draws on multiple disciplines – such as literature, history, economics, psychology, sociology, philosophy, political science, anthropology and media studies – to examine cultural assumptions about sex, gender, and sexuality.

This course integrates analysis of current events through student presentations, aiming to increase awareness of contemporary and historical experiences of women, and of the multiple ways that sex and gender interact with race, class, caste, nationality and other social identities. This course also seeks to build an understanding and initiate and strengthen programmes combating genderbased violence and discrimination. The course also features several exercises and reflective activities designed to examine the concepts of gender, gender-based violence, sexuality, and rights. It will further explore the impact of gender-based violence on education, health and development.

Course Objectives:

- To develop students' sensibility with regard to issues of gender in contemporary India.
- To provide a critical perspective on the socialization of men and women.
- To introduce students to information about some key biological aspects of genders.
- To expose the students to debates on the politics and economics of work.
- To help students reflect critically on gender violence.
- To expose students to more egalitarian interactions between men and women.

Course Outcomes:

- Students will have developed a better understanding of important issues related to gender in contemporary India.
- Students will be sensitized to basic dimensions of the biological, sociological, psychological and legal aspects of gender. This will be achieved through discussion of materials derived from research, facts, everyday life, literature and film.
- Students will attain a finer grasp of how gender discrimination works in our society and how to counter it.
- Students will acquire insight into the gendered division of labour and its relation to politics and economics.
- Men and women students and professionals will be better equipped to work and live together as equals.
- Students will develop a sense of appreciation of women in all walks of life.
- Through providing accounts of studies and movements as well as the new laws that provide protection and relief to women, the textbook will empower students to


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understand and respond to gender violence.		
Unit -1	UNDERSTANDING GENDER	No.of Classes: 9
Introduction: Definition of Gender-Basic Gender Concepts and Terminology-Exploring Attitudes towards Gender-Construction of Gender-Socialization: Making Women, Making Men- Preparing for Womanhood. Growing up Male. First lessons in Caste.		
Unit -2	GENDER ROLES AND RELATIONS	No.of Classes: 9
Two or Many? -Struggles with Discrimination-Gender Roles and Relations-Types of Gender Roles-Gender Roles and Relationships Matrix-Missing Women-Sex Selection and Its Consequences-Declining Sex Ratio. Demographic Consequences-Gender Spectrum: Beyond the Binary		
Unit -3	GENDER AND LABOUR	No.of Classes: 9
Division and Valuation of Labour-Housework: The Invisible Labor- “My Mother doesn’t Work.” “Share the Load.”-Work: Its Politics and Economics -Fact and Fiction. Unrecognized and Unaccounted work.-Gender Development Issues-Gender, Governance and Sustainable Development-Gender and Human Rights-Gender and Mainstreaming		
Unit -4	GENDER - BASED VIOLENCE	No.of Classes: 9
The Concept of Violence- Types of Gender-based Violence-Gender-based Violence from a Human Rights Perspective-Sexual Harassment: Say No! -Sexual Harassment, not Eve-teasing- Coping with Everyday Harassment- Further Reading: “Chupulu”. Domestic Violence: Speaking Out Is Home a Safe Place? -When Women Unite [Film]. Rebuilding Lives. Thinking about Sexual Violence Blaming the Victim-“I Fought for my Life....”		
Unit -5	GENDER AND CULTURE	No.of Classes: 9
Gender and Film-Gender and Electronic Media-Gender and Advertisement-Gender and Popular Literature- Gender Development Issues-Gender Issues-Gender Sensitive Language-Gender and Popular Literature - Just Relationships: Being Together as Equals Mary Kom and Onler. Love and Acid just do not Mix. Love Letters. Mothers and Fathers. Rosa Parks-The Brave Heart.		
<p>Note: Since it is Interdisciplinary Course, Resource Persons can be drawn from the fields of English Literature or Sociology or Political Science or any other qualified faculty who has expertise in this field from engineering departments.</p> <ul style="list-style-type: none"> - Classes will consist of a combination of activities: dialogue-based lectures, discussions, collaborative learning activities, group work and in-class assignments. Apart from the above prescribed book, Teachers can make use of any authentic materials related to the topics given in the syllabus on “Gender”. - ESSENTIAL READING: The Textbook, “Towards a World of Equals: A Bilingual Textbook on Gender” written by A.Suneetha, Uma Bhrugubanda, Duggirala Vasanta, Rama Melkote, Vasudha Nagaraj, Asma Rasheed, Gogu Shyamala, Deepa Sreenivas and Susie Tharu published by Telugu Akademi, Telangana Government in 2015. 		

ASSESSMENT AND GRADING:

- Discussion & Classroom Participation: 20%
- Project/Assignment: 30%
- End Term Exam: 50%