

COURSE HANDOUT

Part-A

PROGRAM : MCA I SEM
ACADEMIC YEAR : 2018-19
COURSE NAME & CODE : **Accounting and Financial Management – 17MC01**
L-T-P STRUCTURE : 4-1-0
COURSE CREDITS : 3
COURSE INSTRUCTOR : R.JEYALAKSHMI
COURSE COORDINATOR : R.JEYALAKSHMI
PRE-REQUISITES: basic accounting and financial concepts

COURSE EDUCATIONAL OBJECTIVES (CEOs):

- ❖ The overall view on economic, financial accounting & financial management
- ❖ The basic concepts of economics like micro & macro economics
- ❖ The concepts of cost accounting and marginal costing.
- ❖ Study on budgetary control and standard costing.
- ❖ To know about various accounting packages and data processing.

COURSE OUTCOMES (COs)

After completion of the course, the student will be able to

- CO1 Apply the Accounting principles and skill to solve Accounting problems.
- CO2 Understand about the Financial Management and business techniques to raise Funds.
- CO3 Gain knowledge in Cost Accounting and fixing MRP for their product.
- CO4 Handle the organization problems and sources and application of funds.
- CO5 Understand the importance of computerized Accounting in modern world.

COURSE ARTICULATION MATRIX (Correlation between COs&POs,PSOs):

CO's / PO's					
	1	2	3	4	5
CO1	3				
CO2	3				
CO3	1				
CO4	2				
CO5	3	1			

Note: Enter Correlation Levels **1** or **2** or **3**. If there is no correlation, put ‘-’
1- Slight (Low), **2** – Moderate (Medium), **3** - Substantial (High).

BOS APPROVED TEXT BOOKS:

- T1** Dr.S.K. Singh, Dr.G.K. Gupta, Dr. Jitendra kumar saxena “ financial accounting” SBPD publication, 2015 edition.
- T2** T.Paresh Shah, “ Basic financial Accounting for Management” Oxford University press, New Delhi, 2008 edition.

BOS APPROVED REFERENCE BOOKS:

- R1** T. Vijaya kumar “ Accounting for management” TMH 2010.
- R2** I.M. Pandey “ Financial Management” PHI Learning Pvt., Ltd.,

Part-B

COURSE DELIVERY PLAN (LESSON PLAN):

Unit-I: Fundamentals of Accounting

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Orientation class	1	30-07-18					
2.	Orientation class	1	31-07-18					
3.	Orientation class	1	02-08-18					
4.	Orientation class	1	03-08-18					
5.	Fundamentals of Accounting	1	06-08-18		TLM1	CO1	T1	
6.	Nature and scope of Accounting	1	07-08-18		TLM1	CO1	T1	
7.	Accounting principles	1	09-08-18		TLM1	CO1	T1	
8.	Concepts & conventions	1	10-08-18		TLM1	CO1	T1	
9.	Double entry system	1	13-08-18		TLM1	CO1	T1	
10.	User of Accounting information	1	14-08-18		TLM1	CO1	T1	
11.	Basic books	1	16-08-18		TLM1	CO1	T1	
12.	Journals	1	17-08-18		TLM1	CO1	T1	
13.	Journals-problems	1	20-08-18		TLM1	CO1	T1	
14.	Ledger	1	21-08-18		TLM1	CO1	T1	
15.	Ledger-problems	1	23-08-18		TLM1	CO1	T1	
16.	Trial balance-problems	1	24-08-18		TLM1	CO1	T1	
17.	Final accounts	1	27-08-18		TLM1	CO1	T1	
18.	Final accounts-problems	1	28-09-18		TLM1	CO1	T1	
19.	Tutorial	1	30-09-18		TLM3			
No. of classes required to complete UNIT-I		19			No. of classes taken:			

Unit-II: Financial Management

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome Cos	Text Book followed	HOD Sign Weekly
20.	Basics- financial management	1	31-08-18		TLM1	CO2	T2	
21.	Meaning and scope of FM	1	04-09-18		TLM1	CO2	T2	

22.	Role of financial manager	1	06-09-18		TLM2	CO2	T2	
23.	Objectives of FM	1	07-09-18		TLM1	CO2	T2	
24.	Time value of money	1	10-09-18		TLM1	CO2	T2	
25.	Leverages: operating, financial and combined	1	11-09-18		TLM1	CO2	T2	
26.	Cost of capital: cost of equity, Preference shares	1	14-09-18		TLM1	CO2	T2	
27.	Bonds-weighted average cost of capital	1	17-09-18		TLM1	CO2	T2	
28.	Capital gearing	1	18-09-18		TLM1	CO2	T2	
29.	Over and under capitalization	1	20-09-18		TLM2	CO2	T2	
30.	Tutorial	1	20-09-18		TLM3			
No. of classes required to complete UNIT-II		10			No. of classes taken:			
I-MID EXAMS:24/09/18 To 29/09/18								

Unit-III : Cost Accounting

S. No .	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome Cos	Text Book followed	HOD Sign Weekly
31	Cost Accounting : meaning	1	01-10-18		TLM1	CO3	T1,2	
32	Nature and scope	1	04-10-18		TLM1	CO3	T1,2	
33	Importance and basic concept	1	05-10-18		TLM1	CO3	T1,2	
34	Cost sheet-problems	1	08-10-18		TLM2	CO3	T1,2	
35	Absorption costingVs marginal costing	1	09-10-18		TLM1	CO3	T1,2	
36	Cost-volume –profit	1	11-10-18		TLM2	CO3	T1,2	
37	CVP-problems	1	12-10-18		TLM1	CO3	T1,2	
38	Break-Even point		15-10-18			CO3		
39	BEP significance and limitations	1	16-10-18		TLM1	CO3	T1,2	
40	CVP analysis	1	19-10-18		TLM1	CO3	T1,2	
41	Tutorial	1	22-10-18		TLM3			
No. of classes required to complete UNIT-III		11			No. of classes taken:			

Unit – IV : Budgetary Control

Unit - IV : Budgetary Control								
S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome Cos	Text Book followed	HOD Sign Weekly
42.	budgetary control : meaning	1	23-10-18		TLM1	CO4	T1,2	
43.	Features	1	25-10-18		TLM1	CO4	T1,2	
44.	Preparation of various budgets	1	26-10-18		TLM2	CO4	T1,2	
45.	Fixed and flexible budgets	1	29-10-18		TLM1	CO4	T1,2	
46.	Production and sales	1	30-10-18		TLM1	CO4	T1,2	
47.	Cash , master and zero base budgeting	1	01-11-18		TLM1	CO4	T1,2	
48.	Standard costing: meaning and features	1	02-11-18		TLM1	CO4	T1,2	
49.	Variance : material- problems	1	05-11-18		TLM1	CO4	T1,2	
50.	Labor- problems	1	06-11-18		TLM1	CO4	T1,2	
51.	Overhead-problems	1	08-11-18		TLM1	CO4	T1,2	
52.	Sales variance-problems		09-11-18					
53.	Tutorial	1	12-11-18		TLM3			
No. of classes required to complete UNIT-IV		11			No. of classes taken:			

Unit –V : Accounting packages

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
54.	Accounting packages	1	13-11-18		TLM1	CO5	T1,2	
55.	Computerization of accounts	1	15-11-18		TLM1	CO5	T1,2	
56.	Merits & Demerits		16-11-18			CO5		
57.	Tally	1	19-11-18		TLM1	CO5	T1,2	
58.	Wings	1	20-11-18		TLM1	CO5	T1,2	
59.	Documents used for data collection	1	22-11-18		TLM2	CO5	T1,2	
60.	Master files	1	23-11-18		TLM1	CO5	T1,2	
61.	transaction files	1	26-11-18		TLM1	CO5	T1,2	

62.	Processing of different files	1	27-11-18		TLM1	CO5	T1,2	
63.	Output obtained.	1	29-11-18		TLM1	CO5	T1,2	
64.	Tutorial	1	30-11-18		TLM3			
No. of classes required to complete UNIT-V		11			No. of classes taken:			
II-MID EXAMS:03/12/18 To 08/12/18								

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome Cos	Text Book followed	HOD Sign
65.	Management accounting	1	28/09/18		TLM1	CO1	-	
66.	Tally 6.3	1	19/11/18		TLM1	CO5	E-journal	

Teaching Learning Methods

TLM1	Chalk and Talk	TLM4	Demonstration (Lab/Field Visit)
TLM2	PPT	TLM5	ICT (NPTEL/Swayam Prabha/MOOCs)
TLM3	Tutorial	TLM6	Group Discussion/Project

Part - C

EVALUATION PROCESS:

Evaluation Task	COs	Marks
I-Mid Examination (Descriptive) =A	1,2	A=40
II-Mid Examination (Descriptive) =B	3,4,5	B=40
Evaluation of Mid Marks: A+B =75% of Max(A,B)+25% of Min(A,B)	1,2,3,4,5	A+B=40
Cumulative Internal Examination : A+B	1,2,3,4,5	A+B+C=40
Semester End Examinations =C	1,2,3,4,5	D=60
Total Marks: A+B+C	1,2,3,4,5	100

DEPARTMENT PROGRAMME OUTCOMES(PO'S)

1. Apply knowledge of mathematics, computer science and management in practice.
2. Identify, critically analyze, formulate and develop computer applications.
3. Select modern computing tools and techniques and use them with dexterity.
4. Design a computing system to meet desired needs within realistic constraints such as safety, security and applicability.
5. Function professionally with ethical responsibility as an individual as well as in multidisciplinary teams with positive attitude.

R.Jeyalakshmi	R.Jeyalakshmi	Dr.A.Adishesha Reddy	DrA.Adishesha Reddy
Course Instructor	Course Coordinator	Module Coordinator	HOD



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with 'A' Grade, ISO 9001:2015 Certified Institution

Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada

L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

DEPARTMENT MASTER OF COMPUTER APPLICATIONS

COURSE HANDOUT

PROGRAM	: MCA-I-Semester
ACADEMIC YEAR	: 2018-19
COURSE NAME & CODE	: DLCSO – 17MC03
L-T-P STRUCTURE	: 0-0-4
COURSE CREDITS	: 3
COURSE INSTRUCTOR	: G.RAJENDRA
COURSE COORDINATOR	: G.RAJENDRA

1. Pre-requisites:

- Basic knowledge of Computer Fundamentals.
- Boolean algebra and Number System Fundamentals.

2. Course Educational Objectives (CEOs):

This course will introduce students to the fundamental concepts underlying modern computer organization and architecture. Main objective of the course is to familiarize students about hardware design including logic design, basic structure and behaviour of the various functional modules of the computer and how they interact to provide the processing needs of the user. It will cover machine level representation of data, instruction sets, computer arithmetic, CPU structure and functions, memory system organization and architecture, system input/output, multiprocessors, and digital logic.

3. Course Outcomes (COs): At the end of the course, the student will be able to:

- CO1:** To understand the Minimization of Boolean expressions using algebraic method and K-Maps.
- CO2:** Design and analyze simple combinational and synchronous sequential logic Circuits.
- CO3:** To understand and study the hierarchical memory system including Main Memory, Cache Memory, Associative Memory and Virtual memories.
- CO4:** To understand the concepts of CPU building blocks, Organization of Micro Program Control Unit; Parallel Processing, RISC and CSIC Architectures.
- CO5:** To Understand different ways of communicating with I/O devices and standard I/O interfaces.

4. Course Articulation Matrix

Course Code	COs	Programme Outcomes				
		1	2	3	4	5
	C01	3	2	2	2	
	C02	2	3	1	2	
	C03	1	2	2	1	
	C04	1	3	2	2	
	C05	1	2	2	2	
1= Slight(low)		2=Moderate(Medium)		3=Substantial(High)		

SYLLABUS

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS), MYLAVARAM

MCA (I Sem.)

17MC03 – DIGITAL LOGIC AND COMPUTER SYSTEM ORGANIZATION

L	T	P	Cr.
2	2	-	3

Course Educational Objectives:

In this course student will learn about:

- To introduce the basic concepts and elements of computer systems.
- To give a detailed understanding of fundamentals of computer organization and its relevance to classical and modern problems of computer design
- To learn the basic hardware for processing, storing, and moving information, and how they are organized within the internal architecture of a computer.
- Understand various combinational and sequential logical circuits.
- Describe various data representations and explain how arithmetic and logical operations are performed by computers.

Course Outcomes: At the end of the course, the student will be able to

- CO1: Understand the internal functioning of CPU that includes analyzing performance of computer system using performance equations.
- CO2: Make use of the binary number system and apply knowledge of mathematics to perform basic arithmetic operations performed by the processor for computation.
- CO3: To develop independent learning skills and to learn more about different computer architectures and hardware using modern tools.
- CO4: Design hardware and software components by studying hardwired and micro programmed control techniques of designing processor.
- CO5: Identify study and optimize various problems based on memory design and performance issues.

UNIT – I

Introduction to Digital Computer:

Number system - Binary, Octal, HEXA and their inter-conversion, 1's and 2's complement, Boolean algebra and Logic Gates, De-Morgan's Theorem, Duality Theorem, K-Maps, Binary Addition, Binary Subtraction, Addition/Subtraction of Numbers in 1's Complement Notation, addition/Subtraction of Numbers in Two's Complement Notation, Fixed and floating point representation of numbers.

UNIT – II

Combinational and Sequential circuits:

Half Adder, Full Adder, Binary Adder and Subtractor, Decoder / Encoder, Multiplexer / De-multiplexer,

Sequential Circuits: Flip Flops - SR, D, JK, Master – Slave and Edge Triggered, Shift Registers.

Introduction to Counters: Synchronous and Asynchronous counters.

UNIT - III

Memory System:

Memory Hierarchy, Main Memory-RAM and ROM Chips, RAM & ROM Variants-DRAM, SRAM, ROM, PROM, EPROM, EEPROM, Concepts of Auxiliary Memory, Associative Memory, Cache Memory and Virtual Memory.



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UNIT- IV

CPU Organization:

CPU Building Blocks, CPU Registers, Stack Organization and BUS Characteristics, Data Transfer and Manipulation Instructions, Addressing Modes, Instruction Code, Instruction Formats and Types of Computer Instructions, Parallel Processing, Pipelining, Arithmetic Pipelining, RISC Pipelining, Instruction Pipelining.

Microprogrammed Control - control memory, Address Sequencing, Microprogram Example, and Design of Control Unit.

UNIT – V

Input- Output Organization:

Peripheral Devices, Input-Output Interface, Modes of Transfer, Asynchronous Data Transfer, Priority Interrupts, Direct Memory Access (DMA), and Input-Output Processor (IOP)

TEXT BOOK

MORRIS MANO, "Computer System Architecture", Pearson Education, 3rd edition, 2002

REFERENCES

1. THOMAS C BARTEE, "Digital Computer Fundamentals", TMH, 6th edition.
2. Linda Null and Julia Lobur, "The Essentials of Computer Organization and Architecture", 2nd edition, 2003.
3. William Stallings, "Computer Organization and Architecture", 7th edition, Pearson, 2006
4. Rajaraman, Radhakrishnan, "Digital Logic and Computer Organization", PHI, 2009.
5. Pal Chaudhuri, "Computer Organization & Design", PHI, 2nd edition, 1999.



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Course Delivery Plan:

UNIT-I:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
67.	Introduction to Digital Computers	1	06-08-2018		TLM1	C01	T1	
68.	Numbers system	1	07-08-2018		TLM1	C01	T1	
69.	Logic gates	1	08-08-2018		TLM1	C01	T1	
70.	Boolean Algebra: Postulates	1	11-08-2018		TLM1	C01	T1	
71.	Minimization of Boolean Expressions using Boolean Algebra rules & postulates	2	13-08-2018 14-08-2018		TLM1	C01	T1	
72.	Minimization of Boolean Expressions using K-maps	2	18-08-2018 21-08-2018		TLM1	C01	T1	
73.	Usage of Complements	1	25-08-2018		TLM1	C01	T1	
74.	Data Representation Fixed Point Arithmetic Operations	2	27-08-2018 28-08-2018		TLM1	C01	T1	
75.	Floating Point Arithmetic Operations	2	29-08-2018		TLM6	C01	T1	
76.	Slip Test, Tutorial-1	1	01-09-2018		TLM3	C01	T1	
No. of classes required to complete UNIT-I		14			No. of classes taken:			

UNIT-II:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Combinational Circuit Half-Adder, Full-Adder	1	04-09-2018		TLM1	CO2	T1	
2.	Binary-Adder, Binary-Incrementer	1	05-09-2018		TLM1	CO2	T1	
3.	Binary Adder-Subtractor	1	08-09-2018		TLM1	CO2	T1	
4.	Encoder and Decoder	1	10-09-2018		TLM1	CO2	T1	
5.	Multiplexer and De-multiplexer	1	11-09-2018		TLM1	CO2	T1	
6.	Sequential Circuits: RS, JK, T, D Flip-flops.	1	12-09-2018		TLM1	CO2	T1	
7.	Synchronous and Asynchronous Counters	1	15-09-2018		TLM1	CO2	T1	
8.	Modulo Counters	2	17-09-2018 18-09-2018		TLM1	CO2	T1	
9.	Assignment/Slip Test	1	19-09-2018		TLM3	CO2	T1	

10.	Tutorial-2	1	22-09-2018		TLM6	CO2	T1	
No. of classes required to complete UNIT-II		11			No. of classes taken:			

UNIT-III:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Memory Organization: Memory Hierarchy	1	01-10-2018		TLM1		T1	
2.	Main Memory, RAM and ROM	1	03-10-2018		TLM1		T1	
3.	Auxiliary Memory	1	06-10-2018		TLM1		T1	
4.	Cache Memory	1	08-10-2018		TLM1		T1	
5.	Mapping Techniques	1	09-10-2018		TLM1		T1	
6.	Virtual Memory	1	10-10-2018		TLM1		T1	
7.	Associative Memory	1	13-10-2018		TLM1		T1	
8.	Assignment/Slip Test	1	22-10-2018		TLM6		T1	
9.	Tutorial	1	23-10-2018		TLM3			
No. of classes required to complete UNIT-III		09			No. of classes taken:			

UNIT-IV:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	CPU Registers, BUS Characteristics	1	24-10-2018		TLM1	CO4	T1	
2.	Data Transfer and Manipulation Instructions	1	27-10-2018		TLM1	CO4	T1	
3.	Instruction Codes, Types of Computer Instructions	1	29-10-2018		TLM1	CO4	T1	
4.	Instruction Cycle, Instruction Formats	1	30-10-2018		TLM1	CO4	T1	
5.	Addressing Modes	1	31-10-2018		TLM1	CO4	T1	
6.	Parallel Processing, Pipelining, Arithmetic Pipelining	1	03-11-2018		TLM1	CO4	T1	
7.	Instruction Pipelining, RISC Pipelining	1	05-11-2018		TLM1	CO4	T1	
8.	Micro programmed Control Unit-Control Memory, Address Sequencing	1	06-11-2018		TLM1	CO4	T1	
9.	Micro Program Example Design of Control Unit	1	10-11-2018		TLM1	CO4	T1	
10.	Slip Test/ Tutorial	1	12-11-2018		TLM6 TLM3			
No. of classes required to complete UNIT-IV		10			No. of classes taken:			

UNIT-V:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Input-Out Organization: Peripheral Devices Input- Output Interface	1	13-11-2018		TLM1	C05	T1	
2.	Modes of Data Transfer	1	14-11-2018		TLM1	C05	T1	
3.	Asynchronous Data Transfer-Strobe Control Hand- shaking procedure	1	17-11-2018		TLM1	C05	T1	
4.	Interrupts, Priority Interrupts	1	19-11-2018		TLM1	C05	T1	
5.	Direct Memory Access(DMA)	1	20-11-2018		TLM1	C05	T1	
6.	Input-Output Processor(IOP)	1	24-11-2018		TLM1	C05	T1	
7.	Revision/ Tutorial-5	1	26-11-2018		TLM3 TLM6	C05	T1	
No. of classes required to complete UNIT-V		7			No. of classes taken:			

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
Content Beyond Syllabus								
1.		1	27-11-2018				T1	
2.		1	28-11-2018				T1	
No. of classes required to complete:		02			No. of classes taken:			

Teaching Learning Methods					
TLM1	Chalk and Talk	TLM4	Problem Solving	TLM7	Seminars or GD
TLM2	PPT	TLM5	Programming	TLM8	Lab Demo
TLM3	Tutorial	TLM6	Assignment or Quiz	TLM9	Case Study

ACADEMIC CALENDAR:

Description	From	To	Weeks
Orientation classes	30-07-2018	04-08-2018	1W
I Phase of Instructions	06-08-2018	22-09-2018	7W
I Mid Examinations	24-09-2018	29-09-2018	1W
II Phase of Instructions	01-10-2018	01-12-2018	9W
II Mid Examinations	03-12-2018	08-12-2018	1W
Preparation and Practical's	10-12-2018	15-12-2018	1W
Semester End Examinations	17-12-2018	29-12-2018	2W

EVALUATION PROCESS:

Evaluation Task	COs	Marks
I-Mid Examination	1,2	B1=40
II-Mid Examination	3,4,5	B2=40
Evaluation of Mid Marks: $A=75\%$ of $\text{Max}(B1,B2)+25\%$ of $\text{Min}(B1,B2)$	1,2,3,4,5	B=40
Cumulative Internal Examination :	1,2,3,4,5	A=40
Semester End Examinations	1,2,3,4,5	B=60
Total Marks: A+B	1,2,3,4,5	100

	Course Instructor	Course Coordinator	Module Coordinator	HOD
Signature				
Name of the Faculty	Mr.G RAJENDRA	Mr. K PHANEENDRA	Mr. K PHANEENDRA	Dr. P. Ashok Reddy

COURSE HANDOUT

Part-A

PROGRAM : MCA I-SEMESTER
ACADEMIC YEAR : 2018-19
COURSE NAME & CODE : PROBABILITY AND STATISTICS – 17MC06
L-T-P STRUCTURE : 3-1-0
COURSE CREDITS : 3
COURSE INSTRUCTOR : M.RAMI REDDY
COURSE COORDINATOR : M.RAMI REDDY
PRE-REQUISITES: None

COURSE EDUCATIONAL OBJECTIVES (CEOs) : In this course the students are able to understand the applications of probability concepts and related distributions. They also learn various sample tests in testing the hypothesis and correlation, regression, curve fitting of a bi-variate data.

COURSE OUTCOMES (COs): At the end of the course, the student will be able to

CO1: Predict various probabilistic situations based on various laws of probability like additive, multiplicative laws.

CO2: Distinguish among the criteria of selection and application of Binomial, Poisson and Normal distributions.

CO3: Estimate the point and interval estimators of mean, variance and proportion for the given Sample data.

CO4: Apply various sample tests like Z-test, t-test, F-test and λ^2 -test for decision making regarding the population based on sample data.

CO5: Estimate the level of correlation, the linear relationship for the given bivariate data and the best fit curve of the given data by the method of least squares.

COURSE ARTICULATION MATRIX (Correlation between COs&POs,PSOs):

Course Code	COs	Programme Outcomes				
		1	2	3	4	5
17MC06	CO1	3	2			1
	CO2	3	2			1
	CO3	3	2			1
	CO4	3	2			1
	CO5	3	2			1
1= Slight(low) 2=Moderate(Medium) 3=Substantial(High)						

Note: Enter Correlation Levels **1** or **2** or **3**. If there is no correlation, put '-'

BOS APPROVED TEXT BOOKS:

T1 S.C.Gupta, V.K.Kapoor, “Fundamentals of Mathematical Statistics”, 11th Edition, Sultan Chand and sons, New Delhi, 2014.

BOS APPROVED REFERENCE BOOKS:

R1 Jay L.Devore “Probability and Statistics for engineering and the sciences.” Cengage Learning india, 8th edition, 2012.

R2 Murray R.Spiegel “Probability and Statistics” Schaum’s outline series, Mc Graw Hill, 4th edition.

R3 T.K.V. Iyengar “Probability & Statistics for MCA”. S. Chand & company, New Delhi, 2009 edition.

R4 Miller and Freund’s “Probability and Statistics for Engineers” Prentice Hall of India, New Delhi, 8th edition, 2011.

Part-B**COURSE DELIVERY PLAN (LESSON PLAN):****UNIT-I : Probability**

UNIT-I: Probability								
S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction class	1	06-08-18		TLM1	---	---	
2.	Probability theory: Introduction	1	07-08-18		TLM1	CO1	T1	
3.	sample space and events, problems	1	08-08-18		TLM1	CO1	T1	
4.	Axioms of probability, simple theorems	1	10-08-18		TLM1	CO1	T1	
5.	Simple theorems and examples	1	13-08-18		TLM1	CO1	T1	
6.	Addition theorem, problems.	1	14-08-18		TLM1	CO1	T1	
7.	Multiplication theorem	1	17-08-18		TLM1	CO1	T1	
8.	problems	1	20-08-18		TLM1	CO1	T1	
9.	Problems on independent events	1	21-08-18		TLM1	CO1	T1	
10.	problems	1	24-08-18		TLM1	CO1	T1	
11.	Baye's theorem	1	27-08-18		TLM1	CO1	T1	
12.	Problems on Baye's theorem	1	28-08-18		TLM1	CO1	T1	
13.	Problems	1	29-08-18		TLM1	CO1	T1	
14.	Tutorial -1	1	31-08-18		TLM3	CO1	T1	
No. of classes required to complete UNIT-I		14			No. of classes taken:			

UNIT-II : Probability Distributions

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
15.	Discrete & continuous r.v's .	1	03-09-18		TLM1	CO2	T1	
16.	Mathematical Expections, Problems	1	04-09-18		TLM1	CO2	T1	
17.	Problems on pmf	1	05-09-18		TLM1	CO2	T1	
18.	Problems on pdf	1	07-09-18		TLM1	CO2	T1	
19.	Binomial distribution- Mean, variance	1	10-09-18		TLM1	CO2	T1	
20.	Problems on binomial distribution	1	11-09-18		TLM1	CO2	T1	
21.	Fitting of Binomial distribution	1	12-09-18		TLM1	CO2	T1	
22.	Poisson distribution- Mean, variance	1	14-09-18		TLM1	CO2	T1	
23.	Problems on poisson distribution	1	17-09-18		TLM1	CO2	T1	
24.	Normal distribution- Properties	1	18-09-18		TLM1	CO2	T1	
25.	Problems on normal distribution	1	19-09-18		TLM1	CO2	T1	
26.	Problems on normal distribution	1	21-09-18		TLM1	CO2	T1	
27.	Tutorial-2	1	23-09-18		TLM3	CO2	T1	
No. of classes required to complete UNIT-II		13			No. of classes taken:			

UNIT-III : Sampling Distribution & Estimation

S.No	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
28.	Sampling distribution ,definitions	1	01-10-18		TLM1	CO3	T1	
29.	Problems of sampling distributions	1	03-10-18		TLM1	CO3	T1	
30.	problems	1	05-10-18		TLM1	CO3	T1	
31.	Central limit theorem and applications	1	08-10-18		TLM1	CO3	T1	
32.	Problems on central limit theorem	1	09-10-18		TLM1	CO3	T2	
33.	Point and interval estimation	1	10-10-18		TLM1	CO3	T2	
34.	Interval estimation of mean in large samples	1	12-10-18		TLM1	CO3	T1	
35.	Interval estimation of proportion in large samples	1	15-10-18		TLM1	CO3	T1	
36.	Interval estimation of mean in small samples	1	16-10-18		TLM1	CO3	T1	

37.	problems	1	17-10-18		TLM1	CO3	T1	
38.	Tutorial-3	1	22-10-18		TLM3	CO3	T1	
No. of classes required to complete UNIT-III		11			No. of classes taken:			

UNIT-IV : Tests of Hypothesis

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
39.	Testing of Hypothesis , definitions	1	23-10-18		TLM1	CO4	T1	
40.	Z-test for single mean	1	24-10-18		TLM1	CO4	T1	
41.	Z-test for difference of means	1	26-10-18		TLM1	CO4	T1	
42.	Z-test for single proportion	1	29-10-18		TLM1	CO4	T1	
43.	Z-test for difference of proportions	1	30-10-18		TLM1	CO4	T1	
44.	t-test for single mean	1	31-10-18		TLM1	CO4	T1	
45.	t-test for difference of means	1	02-11-18		TLM1	CO4	T1	
46.	Paired t-test	1	05-11-18		TLM1	CO4	T1	
47.	F-test for population variances	1	06-11-18		TLM1	CO4	T1	
48.	χ^2 test for goodness of fit	1	07-11-18		TLM1	CO4	T1	
49.	χ^2 test for independence of attributes	1	12-11-18		TLM1	CO4	T1	
50.	Tutorial-4	1	13-11-18		TLM3	CO4	T1	
No. of classes required to complete UNIT-IV		12			No. of classes taken:			

UNIT-V : Correlation & Curve fitting

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
51.	Simple Bi-variate Correlation	1	14-11-18		TLM1	CO5	T1	
52.	Problems on Pearson's Correlation	1	16-11-18		TLM1	CO5	T1	
53.	Regression lines	1	19-11-18		TLM1	CO5	T2	
54.	Problems on Regression lines	1	20-11-18		TLM1	CO5	T1	
55.	Properties of Regression coefficients	1	21-11-18		TLM1	CO5	T1	
56.	Problems on Regression coefficients	1	22-11-18		TLM1	CO5	T1	
57.	Problems on rank Correlation	1	23-11-18		TLM1	CO5	T1	
58.	Problems on repeated ranks	1	26-11-18		TLM1	CO5	T1	

59.	Fitting of a straight line, parabola	1	27-11-18		TLM1	CO5	T1	
60.	Fitting of exponential and power curves...	1	28-11-18		TLM1	CO5	T1	
61.	Tutorial-5	1	30-11-18		TLM3	CO5	T1	
No. of classes required to complete UNIT-V		11			No. of classes taken:			

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign
62.	Bivariate Random variables	1	04-09-18		TLM1	CO1	T1	
63.	Applications on sample tests	1	12-11-18		TLM1	CO4	T1	

Teaching Learning Methods

TLM1	Chalk and Talk	TLM4	Demonstration (Lab/Field Visit)
TLM2	PPT	TLM5	ICT (NPTEL/Swayam Prabha/MOOCs)
TLM3	Tutorial	TLM6	Group Discussion/Project

ACADEMIC CALENDAR:

Description	From	To	Weeks
I Phase of Instructions-1	06-08-2018	22-09-2018	7
I Mid Examinations	24-09-2018	29-09-2018	1
II Phase of Instructions	01-10-2018	01-12-2018	9
II Mid Examinations	03-12-2018	08-12-2018	1
Preparation and Practicals	10-12-2018	15-12-2018	1
Semester End Examinations	17-12-2018	29-12-2018	2

Part - C

EVALUATION PROCESS:

Evaluation Task	COs	Marks
I-Mid Examination	1,2	A1=40
II-Mid Examination	3,4,5	A2=40
Evaluation of Mid Marks: $A = 75\% \text{ of Max}(A1, A2) + 25\% \text{ of Min}(A1, A2)$	1,2,3,4,5	A=40
Semester End Examinations	1,2,3,4,5	B=60
Total Marks: A+B	1,2,3,4,5	100

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

To provide students knowledge beyond specifications, develop critical thinking wherein they can recognize and solve the problems, recognize ethical issues and communicate effectively; within this purview following objectives are stated:

PEO 1: To enhance capacity building and knowledge empowerment of the students. Further augment it by intensive training and skill development in the emerging areas of software engineering, web based technologies, network computing, programming languages, data base administration and other information technology enabled services.

PEO 2: To inspire and transform the students into skilled professionals who fit well into the job market demands by equipping them with critical thinking skills.

PEO 3: To contribute its mite in the field of Research & Development.

PEO 4: To focus on the holistic development of Computer Professionals and impart them with effective communication skills, teamwork , leadership skills, multidisciplinary approach and ability to relate computer applications to broader social context.

PROGRAMME OUTCOMES (POs)

POs are the milestones that elucidate what the students are expected to know and the skills they are expected to acquire on the completion of the program.

At the end of the programme the students are able to:

PO 1: Apply knowledge of mathematics, computer science and management in practice.

PO 2: Identify, critically analyze, formulate and develop computer applications.

PO 3: Select modern computing tools and techniques and use them with dexterity.

PO 4: Design a computing system to meet desired needs within realistic constraints such as safety, security and applicability.

PO 5: Function professionally with ethical responsibility as an individual as well as in multidisciplinary teams with positive attitude.

Course Instructor	Course Coordinator	Module Coordinator	HOD

Syllabus

MCA (I Sem.)

17MC04 – DISCRETE STRUCTURES AND GRAPH THEORY

L	T	P	Cr.
3	-	-	3

Course Educational Objectives: In this course student will learn about

- Clear thinking and creative problem solving.
- To develop logical thinking and its applications to computer science
- The construction and understanding of mathematical proofs.
- Able to think and solve the problem logically
- Common mathematical arguments and proof strategies.
- A sense of familiarity and ease in working with mathematical notation and concepts
- To develop the habit of thinking mathematically
- To introduce the students the theory of graphs
- To learn different properties of graphs.

Course Outcomes: At the end of the course, the student will be able to

- CO1: Validate statements using propositional logic and convert them to normal form
CO2: Perform operations on various discrete structures such as sets, functions, relations, and sequences.
CO3: Apply basic counting principles, Ability to solve problems on Recursion and generating functions.
CO4: Perform different operations on graphs and trees. And learn different properties of them.
CO5: Apply algorithms and use of graphs and trees as tools to visualize and simplify Problems.

UNIT – I

Mathematical Logic:

Statements and Notations, Connectives, Well formed Formulas, Truth Tables, Equivalence Implications, and Normal Forms. Rules of Inference, Consistency of premises and indirect method of proof.

Predicate Calculus: Predicates, statement functions, Variables and Quantifiers, Predicate formulas, Free and Bound variables, Universe of discourse, Inference theory of predicate calculus.

UNIT – II

Set theory and Relations:

Introduction, Relations and ordering, properties of binary relations, Equivalence, Compatibility relations, Partial Ordering, Hasse Diagram.

Functions:

Composition of functions, Inverse function, Recursive functions, Pigeonhole principle and its applications.

UNIT - III

Elementary Combinatorics:

Basics of Counting, Combinations and Permutations, Binomial Coefficients, Binomial and Multinomial theorems, Principle of inclusion and exclusion.

Generating Functions:

Generating function of sequences, calculating coefficient of generating functions



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Recurrence Relations:

Solving recurrence relations by substitution, by characteristic roots, by generating functions.
Solution of non_homogeneous recurrence relations

UNIT - IV

Graph Theory-I:

Basic concepts, Representation of Graph, BFS, DFS, Isomorphism and sub graphs, Multi graphs, Planar graphs, Euler circuits, Hamiltonian graphs, Chromatic Numbers.

UNIT - V

Graph Theory-II:

Single source and All pairs shortest path problems - Dijkstra's and Floyd's algorithms, Transitive closure-Warshall's Algorithm, Spanning Trees, Kruskal's algorithm, Prim's algorithm.

TEXT BOOK

J.L.Molt, A.Kandel, and T.P.Baker, "Discrete Mathematics for Computer Scientists and Mathematicians, PHI,2001.

REFERENCES

1. J.P.Tremblery and R.Manohar, "Discrete Mathematical Structures with Applications to Computer Science", TMH, 2004.
2. C L Liu and D P Mohopatra, "Elements of Discrete Mathematics", TMH, 2008.
3. Schaum's Outlines Lipschutz, and Lipson, "Discrete Mathematics", TMH, 2000.
4. Kolman, Busby and Ross, "Discrete Mathematical Structures", 6th ed; PHI, 2007.



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BOS APPROVED TEXT BOOKS:

- T1** J.L.Mott, A.Kandel, and T.P.Baker, "Discrete Mathematics for Computer Scientists and Mathematicians, PHI, 2001.

BOS APPROVED REFERENCE BOOKS:

- R1** J.P.Treamblery and R.Manohar, "Discrete Mathematical Structures with Applications to Computer Science", TMH, 2004.
- R2** C.L.Liu and D P Mohopatra, "Elements of Discrete mathematics",TMH, 2008.
- R3** schaum's outlines Lipschutz and lipson "Discrete Mathematics", TMH, 2000.
- R4** Kolman, Busby Ross, "Discrete Mathematical Structures", 6th ed; PHI, 2007.

Course Delivery Plan:**UNIT-I :** connectives, normal forms, inference theory for propositional and predicate logic

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
77.	Statements and Notations , Connectives	1	06-08-2018		01	CO1	R1	
78.	Well Formed Formulas , Truth Tables	1	07-08-2018		01	CO1	R1	
79.	Equivalences	1	10-08-2018		01	CO1	R1	
80.	Implications	1	11-08-2018		01	CO1	R1	
81.	Normal Forms Disjunctive Normal Form	1	13-08-2018		01	CO1	R1	
82.	Principal Conjunctive Normal Form	1	14-08-2018		01	CO1	R1	
83.	Principal Disjunctive Normal Form	1	17-08-2018		01	CO1	R1	
84.	Rules of inference	1	18-08-2018		01	CO1	R1	
85.	Consistency of Premises	1	20-08-2018		01	CO1	R1	
86.	Indirect method of proof	1	21-08-2018		01	CO1	R1	
87.	Predicates , Universe of Disclosure	1	24-08-2018		01	CO1	R1	
88.	Statement Functions , Variables and quantifiers	1	25-08-2018		01	CO1	R1	
89.	predicate Formulas , free and bound Variables	1	27-08-2018		01	CO1	R1	
90.	inference theory of predicate calculus	1	28-08-2018		01	CO1	R1	
91.	Tutorial-1	1	31-08-2018		01	CO1	R1	
No. of classes required to complete UNIT-I		15			No. of classes taken:			

UNIT-II : sets, relations, functions

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to sets	1	01-09-2018		01	CO2	T1,R1	
2.	Operations on Sets	1	04-09-2018		01	CO2	T1,R1	
3.	Venn Diagrams	1	07-09-2018		01	CO2	T1,R1	
4.	Set identities , principle of specification, Cartesian Products	1	08-09-2018		01	CO2	T1,R1	
5.	Relations , properties of binary relations	1	10-09-2018		01	CO2	T1,R1	

6.	Equivalence relations , compatibility relations	1	11-09-2018		01	CO2	T1,R1	
7.	partial ordering , Hasse Diagram	1	14-09-2018		01	CO2	T1,R1	
8.	Functions introduction	1	15-09-2018		01	CO2	T1,R1	
9.	composition of functions	1	17-09-2018		01	CO2	T1,R1	
10.	inverse function , Recursive functions	1	18-09-2018		01	CO2	T1,R1	
11.	Applications of pigeonhole principle , Applications	1	21-09-2018		01	CO2	T1,R1	
12.	Tutorial – 2	1	22-09-2018		01	CO2	T1,R1	
No. of classes required to complete UNIT-II		12			No. of classes taken:			

UNIT-III : counting principles , Generating functions , recurrence relations

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	basics of counting	1	01-10-2018		01	CO3	T1	
2.	combinations	1	05-10-2018		01	CO3	T1	
3.	permutations	1	06-10-2018		01	CO3	T1	
4.	binomial coefficients, and theorem	1	08-10-2018		01	CO3	T1	
5.	Multinomial Theorems	1	09-10-2018		01	CO3	T1	
6.	Principle of inclusion and exclusion	1	12-10-2018		01	CO3	T1	
7.	generating functions	1	13-10-2018		01	CO3	T1	
8.	calculating coefficient of Generating functions	1	15-10-2018		01	CO3	T1	
9.	recurrence relations	1	16-10-2018		01	CO3	T1	
10.	solving recurrence relations by substitution	1	22-10-2018		01	CO3	T1	
11.	solving recurrence relations by Characteristic roots	1	23-10-2018		01	CO3	T1	
12.	solving recurrence relations by Generating functions	1	26-10-2018		01	CO3	T1	
13.	solving non homogeneous recurrence relations	1	27-10-2018		01	CO3	T1	
14.	solving non homogeneous recurrence relations	1	29-10-2018		01	CO3	T1	
15.	Tutorial-3	1	30-10-2018		03	CO3	T1	
No. of classes required to complete UNIT-III		15			No. of classes taken:			

UNIT-IV : Basics of graph theory.

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Graph Theory Basic Concepts	1	02-11-2018		01	CO4	T1,R1	
2.	Graph Theory Basic Concepts	1	03-11-2018		01	CO4	T1,R1	
3.	Representation of Graphs	1	05-11-2018		01	CO4	T1,R1	

4.	BFS	1	06-11-2018		01	CO4	T1,R1	
5.	DFS	1	09-11-2018		01	CO4	T1,R1	
6.	Isomorphism	1	10-11-2018		01	CO4	T1,R1	
7.	sub graphs	1	12-11-2018		01	CO4	T1,R1	
8.	multi graphs, planar graphs	1	13-11-2018		01	CO4	T1,R1	
9.	Euler circuits	1	16-11-2018		01	CO4	T1,R1	
10.	Euler formula	1	17-11-2018		01	CO4	T1,R1	
11.	Hamiltonian Graphs	1	19-11-2018		01	CO4	T1,R1	
12.	chromatic numbers	1	20-11-2018		01	CO4	T1,R1	
13.	Tutorial - 4	1	23-11-2018		03	CO4	T1,R1	
No. of classes required to complete UNIT-IV		13			No. of classes taken:			

UNIT-V : Applications of graph theory

UNIT-V-V Applications of Graph theory								
S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	single source shortest path problems	1	24-11-2018		01	CO5	T1,R3	
2.	single source shortest path Dijkstras algorithm	1	26-11-2018		01	CO5	T1,R3	
3.	All pairs shortest path problems	1	27-11-2018		01	CO5	T1,R3	
4.	All pairs shortest path Floyd's algorithm	1	30-11-2018		01	CO5	T1,R3	
5.	Transitive closer Warshall's Algorithm	1	01-12-2018		01	CO5	T1,R3	
6.	spanning trees	1	03-12-2018		01	CO5	T1,R3	
7.	minimum spanning tree kruskal's algorithm	1	04-12-2018		01	CO5	T1,R1	
8.	minimum spanning tree Prims algorithm	1	07-12-2018		01	CO5	T1,R1	
9.	Tutorial-5	1	08-12-2018		03	CO5	T1,R1	
No. of classes required to complete UNIT-V		09			No. of classes taken:			

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1	grinberg's theorem	01	05-12-2018		02		T1	
2	Combinatorial games	01	06-12-2018		02		NET	

Teaching Learning Methods					
TLM1	Chalk and Talk	TLM4	Problem Solving	TLM7	Seminars or GD
TLM2	PPT	TLM5	Programming	TLM8	Lab Demo
TLM3	Tutorial	TLM6	Assignment or Quiz	TLM9	Case Study

ACADEMIC CALENDAR:

Description	From	To	Weeks
Orientation classes	30-07-2018	04-08-2018	1W
I Phase of Instructions	06-08-2018	22-09-2018	7W
I Mid Examinations	24-09-2018	29-09-2018	1W
II Phase of Instructions	01-10-2018	01-12-2018	9W
II Mid Examinations	03-12-2018	08-12-2018	1W
Preparation and Practicals	10-12-2018	15-12-2018	1W
Semester End Examinations	17-12-2018	29-12-2018	2W

EVALUATION PROCESS:

Evaluation Task	COs	Marks
I-Mid Examination	1,2	A=40
II-Mid Examination	3,4,5	B=40
Evaluation of Mid Marks: $B=75\% \text{ of Max}(A,B)+25\% \text{ of Min}(A,B)$	1,2,3,4,5	C=40
Cumulative Internal Examination : A+B	1,2,3,4,5	C=40
Semester End Examinations	1,2,3,4,5	D=60
Total Marks: C+D	1,2,3,4,5	100

	Course Instructor	Course Coordinator	Module Coordinator	HOD
Signature				
Name of the Faculty	M.Hema Latha	M.Hema latha	Dr A. Rami Reddy	Dr P Ashok Reddy



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with 'A' Grade, ISO 9001:2015 Certified Institution

Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada

L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

PROGRAM : M.C.A., I-Sem

ACADEMIC YEAR : 2018-19

COURSE NAME & CODE : C Programming and Data Structures – 17MC02

L-T-P STRUCTURE : 2-2-0

COURSE CREDITS : 3

COURSE INSTRUCTOR : Dr.P.ASHOK REDDY

COURSE COORDINATOR : Dr.P.ASHOK REDDY

PRE-REQUISITE: NIL

Course Educational Objectives:

In this course student will learn about

- Fundamentals of computer.
- The programming fundamentals.
- Developing the logical and programming skills in C language.
- Various hardware and software components of computer.
- Writing small to medium scale programs in C language

COURSE OUTCOMES (CO):

At the end of this course student will be able to

CO1: Assemble and dismantle a PC.

CO2: Develop logical solution for a given problem.

CO3: Programming for small to large scale applications through C language.

CO4: Recognize correct C programming language syntax

CO5: Trace the execution of code (i.e., playing computer) and Understand the importance of algorithms and data structures in the problem-solving process

Pre requisite:

- Knowledge about various components in computer
- Algorithm writing
- Flowchart drawing skills and
- Problem solving skills.

Course Articulation Matrix:

Course Code	COs	Programme Outcomes				
		1	2	3	4	5
	CO1	3	2	3		2
	CO2	2	3	2		3
	CO3	2	3		3	2
	CO4	2	3	1	3	
	CO5		2	3	3	1

SYLLABUS

UNIT – I

Introduction to Computers: History and Generations of Computers, Primary and Secondary memory, Input-output devices, Applications of computers.

C-Basics:

Algorithm / pseudo code, Flowcharts, Program development steps, Structure of C program, Identifiers, Basic data types, Constants, variables, types of operators, expressions, precedence and order of evaluation, type conversions, conditional expressions.

UNIT – II

Control structures:

If, If-Else and switch statements, Loops- while, do-while and for statements, break, continue & goto, Programming examples.

Arrays:

Introduction, Single-dimensional Arrays : Declaration of a Single-dimensional Array, Usage of Single-dimensional Array, Memory Representation of Single-dimensional Array, Operations on a Single-dimensional Array, Array of Arrays (Multi-dimensional Arrays), Advantages and Limitations of Arrays

Strings and Character Arrays: Introduction, Strings, Character Arrays, Reading Strings from the Keyboard, Printing Strings on the Screen, String Library Functions, Array of strings.

UNIT - III

Functions:

Introduction, Functions, Classification of Functions - Based Upon who develops the Function, Based Upon the Number of Arguments a Function Accepts. **Storage Classes-** auto, register, static, extern.

Pointers:

Operations on Pointers, void pointer, Null Pointer, Relationship Between Arrays and Pointers, Array of Pointers, Pointer to a Pointer, Pointer to an Array, Array of Character Pointers, Command Line Arguments, Dynamic Memory Allocation.

UNIT - IV

Structures, Unions, Enumerations and Bit-fields:

Introduction, Structure definition, Structure declaration, Operations on Structures, Pointers to Structures, Array of Structures, Structures within a Structure (Nested Structures) Functions and Structures, type def and Structures, Unions, Practical Application of Unions, Enumerations, Bit-Fields

Files:

Introduction, Files, Streams, I/O Using Streams :Opening a Stream, Closing Streams Character Input, Character Output, File Position Indicator, End of File and Errors, Line Input, Line Output, Formatted Input, Formatted Output, Block Input, Block Output, Stream Buffering and Flushing the Streams, File Type, Files and Command Line Arguments

UNIT – V

Introduction to Data Structures

Data Structures: Introduction to Data Structures, Single linked lists, doubly linked lists, circular list, representing stacks and queues in C using arrays and linked lists, infix to postfix conversion, postfix expression evaluation

Text Book:

1. Ajay Mittal, "Programming in C: A Practical Approach", First Edition, Person Education, 2010

Reference Books:

1. Reema Thareja "Programming in C", First Edition, Oxford Publications, 2011.
2. Fundamentals of Data Structures in C, Horowitz, Sahni, AndersonFreed, 2nd edition, Universities Press, 2008.
3. Classic Data Structures, Samanta, 2nd ed, PHI, 2009.
4. Pradip Dey, Manas Ghosh "Programming in C", First Edition, Oxford Publications.

5. Brian W. Kernighan, Dennis M. Ritchie“ The C Programming Language”, 2nd Edition, PHI/Pearson Education, 1988
6. B.A. Forouzan and R.F. Gilberg Computer science, “A structured programming approach using C”, Third edition, Thomson

COURSE DELIVERY PLAN (LESSON PLAN):
UNIT-I

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
92.	Introduction	1	6-8-2018		1	CO1	T1,R1	
93.	History and Generations of Computers, Primary and Secondary memory, Input-output devices	1	8-8-2018		1	CO1	T1,R1	
94.	Applications of computers, Introduction to problem solving, problem specifications Algorithm ,Algorithm examples and	1	9-8-2018		1	CO1	T1,R1	
95.	Flowchart Definition, <i>Tutorial-1</i> flowchart examples	1	11-8-2018		1,3	CO1	T1,R1	
96.	Pseudo code and Examples Introduction to C-Programming	1	13-8-2018		1	CO1	T1,R1	
97.	Structure of C program, Program development steps in C, Identifiers	1	16-8-2018		1	CO1	T1,R1	
98.	Basic data types and sizes, Constants and variables, Input-output statements, A sample c programs <i>Tutorial-2</i>	1	18-8-2018		1,3	CO1	T1,R1	
99.	Arithmetic, relational and logical operators with examples	1	23-8-2018		1,4,5	CO1	T1,R1	
100.	Assignment operator, Increment and decrement operators, conditional operator with sample programs	1	25-8-2018		1,4,5	CO1	T1,R1	
101.	Bit-wise operators,	1	27-8-2018		1,6	CO1	T1,R1	

	expressions with sample programs, Assignment-1							
102.	Type conversions, conditional expressions, precedence of operators and order of evaluation With sample programs	1	29-8-2018		1,4,5	CO1	T1,R1	
No. of classes required to complete UNIT-I		11			No. of classes taken:			

UNIT-II

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
103.	Conditional statements: if, if else, else if ladder with sample programs	1	30-8-2018		1,4,5	CO1	T1,R1	
104.	Switch statements, continue with sample code , goto and labels with sample code, <i>Tutorial-3</i>	1	01-09-2018		1,3	CO1	T1,R1	
105.	Loops: while, do while	1	05-09-2018		1,4,5	CO1	T1,R1	
106.	Sample programs on while, do-while	1	06-09-2018		1,4,5	CO1	T1,R1	
107.	For statement with example programs	1	08-09-2018		1,4,5	CO1	T1,R1	
108.	Break, programming examples Assignment/Quiz-2 <i>Tutorial-4</i>	1	10-09-2018		1,3	CO1	T1,R1	
109.	Introduction to Arrays concept	1	12-09-2018		1,4,5	CO2	T1,R1	
110.	one dimensional arrays declaration, definition, accessing elements, storing elements	1	15-09-2018		1,4,5	CO2	T1,R1	
111.	Two dimensional and multi-dimensional arrays <i>Tutorial-5</i>	1	17-09-2018		1,3	CO2	T1,R1	
112.	Character Strings: declaration, initialization, reading, writing strings, arithmetic operations on characters	1	19-09-2018		1,4,5	CO2	T1,R1	
113.	string handling functions programming	1	20-09-2018		1,4,5	CO2	T1,R1	

	examples							
114.	Sample programs on arrays, <i>Tutorial-6</i> , Assignment	1	22-09-2018		1, 3,6	CO2	T1,R1	
No. of classes required to complete UNIT-II		13			No. of classes taken:			
24-09-2018 to 29-09-2018 Mid-I Exams								

UNIT-III

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
115.	Functions: Introduction, category of functions	1	01-10-2018		1,4,5	CO3	T1,R2	
116.	Parameter passing techniques	1	03-10-2018		1,4,5	CO3	T1,R2	
117.	Recursive functions-comparison with Iteration	1	04-10-2018		1,4,5	CO3	T1,R2	
118.	Functions with arrays <i>Tutorial-7</i>	1	06-10-2018		1,3	CO3	T1,R2	
119.	Storage classes-extern, auto, and register, static, scope rules	1	08-10-2018		1,4,5	CO3	T21,R2	
120.	Standard library functions	1	10-10-2018		1,4,5	CO3	T1,R2	
121.	Dynamic memory management functions <i>Tutorial-8</i>	1	11-10-2018		1,4,5	CO3	T1,R2	
122.	Pointers- Introduction	1	13-10-2018		1,4,5	CO3	T1,R2	
123.	Declaring & initialization of pointer variables, pointer expressions	1	15-10-2018		1,4,5	CO3	T1,R2	
124.	Address arithmetic, pointers and arrays	1	22-10-2018		1,4,5	CO3	T1,R2	
125.	Pointers and character strings, pointers to pointers	1	22-10-2018		1,4,5	CO3	T1,R2	
126.	Command line arguments	1	24-10-2018		1,4,5	CO3	T1,R2	
127.	Assignment & <i>Tutorial-9</i>	1	25-10-2018		3,6	CO3	T1,R2	
No. of classes required to complete UNIT-III		14			No. of classes taken:			

UNIT-IV

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
128.	Structures - Introduction to structures	1	27-10-2018		1,4,5	CO4	T1,R2	
129.	structures-declaration, definition and initialization of structures	1	29-10-2018		1,4,5	CO4	T1,R2	
130.	accessing structures, nested structures, arrays of structures	1	31-10-2018		1,4,5	CO4	T1,R2	
131.	Structures and functions , Pointers to Structures <i>Tutorial-10</i>	1	01-11-2018		1,3	CO4	T1,R2	
132.	Self Referential Structures, Unions Creation and sample programs	1	03-11-2018		1,4,5	CO4	T1,R2	
133.	Enumerations ,Bit-Fields	1	05-11-2018		1,4,5	CO4	T1,R2	
134.	Typedef, C program examples	1	05-11-2018		1,4,5	CO4	T1,R2	
135.	structure vs union with examples,	1	08-11-2018		1,4,5	CO4	T1,R2	
136.	Files – concept of a file, Types of files, streams	1	12-11-2018		3,6	CO4	T1,R2	
137.	Standard and Formatted I/O	1	12-11-2018		1,4,5	CO4	T1,R2	
138.	File I/O operations, <i>Tutorial-11</i>	1	14-11-2018		1,4,5	CO4	T1,R2	
139.	File error handling and Programs	1	15-11-2018		1,4,5	CO4	T1,R2	
140.	Files and Command Line Arguments	1	17-11-2018		1,4,5	CO4	T1,R2	
141.	Assignment & <i>Tutorial-12</i>	1	17-11-2018		3,6	CO4	T1,R2	
No. of classes required to complete UNIT-IV		13			No. of classes taken:			

UNIT-V

S.No.	Topics to be covered	No. of Classes	Tentative Date of	Actual Date of	Teaching Learning	Learning Outcome	Text Book	HOD Sign
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		Required	Completion	Completion	Methods	COs	followed	Weekly
142.	Data Structures: Introduction to Data Structures and Types	1	19-11-2018		1,4,5	CO5	T1,R2	
143.	Representing stacks and queues in C using arrays	2	21-11-2018		1,4,5	CO5	T1,R2	
144.	Linked lists and Types	3	24-11-2018		1,4,5	CO5	T1,R2	
145.	infix to post fix conversion, postfix expression evaluation	1	29-11-2018		1,4,5	CO5	T1,R2	
146.	Assignment & <i>Tutorial-13</i>	1	01-12-2018		3,6	CO5	T1,R2	
No. of classes required to complete UNIT-V		8			No. of classes taken:			
03-12-2018 to 08-12-2018 Mid-II Exams								

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
147.	Character I/O	1	17-09-2018					
148.	String I/O	1	19-09-2018					
149.	Pointers Using Functions	1	25-10-2018					
150.	Pre-processor Directives	1	08-11-2018					
151.	Macros, sample programs	1	15-11-2018					

Teaching Learning Methods

TLM1	Chalk and Talk	TLM4	Problem Solving	TLM7	Seminars or GD
TLM2	PPT	TLM5	Programming	TLM8	Lab Demo
TLM3	Tutorial	TLM6	Assignment or Quiz	TLM9	Case Study

ACADEMIC CALENDAR:

Description	From	To	Weeks
Orientation classes	30-07-2018	04-08-2018	1W
I Phase of Instructions	06-08-2018	22-09-2018	7W
I Mid Examinations	24-09-2018	29-09-2018	1W
II Phase of Instructions	01-10-2018	01-12-2018	9W
II Mid Examinations	03-12-2018	08-12-2018	1W
Preparation and Practicals	10-12-2018	15-12-2018	1W

Semester End Examinations	17-12-2018	29-12-2018	2W
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EVALUATION PROCESS:

Evaluation Task	COs	Marks
I-Mid Examination	1,2	A=40
II-Mid Examination	3,4,5	B=40
Evaluation of Mid Marks: $B=75\% \text{ of Max}(A,B)+25\% \text{ of Min}(A,B)$	1,2,3,4,5	C=40
Cumulative Internal Examination : A+B	1,2,3,4,5	C=40
Semester End Examinations	1,2,3,4,5	D=60
Total Marks: C+D	1,2,3,4,5	100

	Course Instructor	Course Coordinator	Module Coordinator	HOD
Signature				
Name of the Faculty	Dr P. Ashok Reddy	Dr P. Ashok Reddy	Dr P. Ashok Reddy	Dr P. Ashok Reddy



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with 'A' Grade, ISO 9001:2015 Certified Institution

Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada

L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

17MC61 – DIGITAL LOGIC AND COMPUTER SYSTEMS ORGANIZATION LAB

		Internal Marks	:
50			
Lab/Practical	: 4 Periods/Week	External Marks	:
50			
Credits	: 2	External Examination	: 3
Hrs			

LIST OF EXPERIMENTS

MCA (I Sem.)

**17MC61 – DIGITAL LOGIC AND COMPUTER
SYSTEM ORGANIZATION LAB**

L	T	P	Cr.
-	-	4	2

Course Educational Objectives: In this course student will learn about:

- Fundamental designing concepts of different types of Logic Gates and Minimization techniques.
- Design, analyze and implement various sequential and combinational circuits.
- Practical knowledge of DeMorgan's Law and Boolean Algebra Rules and Theorems.
- Simplifying circuits using Karnaugh maps.

Course Outcomes: At the end of the course, the student will be able to

- CO1: Apply knowledge of number systems, Boolean algebra, multiplexers and counters to conduct experiments of digital electronics laboratory.
- CO2: Identify various ways of implementing arithmetic circuits.
- CO3: Identify various ways of implementing sequential and combinational circuits.
- CO4: Design, Implementation and Realizations of various logic gates.
- CO5: Design and Construct various types of Counters.

LIST OF EXPERIMENTS**EXERCISE 1**

Using Logic Gates: - AND, OR, NOT, NOR, XOR, NAND, XNOR, Buffer

EXERCISE 2

Boolean algebra: Theorems and logical Gates, verification of truth tables for some given expressions

EXERCISE 3

Realization of Boolean expressions; Using (i) AND – OR-NOT Gates (ii) NAND Gates (iii) NOR Gates

EXERCISE 4

Latches Flip – Flops: RS, JK, T, D, Master –Slave FF, Edge – Triggered Flip – Flops

EXERCISE 5

Registers: All types of Shift Register s and Adder, Subtractor, Divider, Negator, Comparator

EXERCISE 6

Counters: Binary Counter, Synchronous Binary Counter, Synchronous Up/Down counter

EXERCISE 7

Asynchronous Binary Counter, Ripple Counter, Decade Counter, Up/Down Counter



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MYLAVARAM - 521 230., Krishna Dt, A.P.

EXERCISE 8

Modulo Counter: Modulo - 5, Modulo – 10

EXERCISE 9

Adders / Sub tractors: Half Adder, Full Adder, 1's and 2's complement addition

EXERCISE 10

Multiplexers/ Data Selector: 2- input and 8- input, Demultiplexers, Logic Function Generator

EXERCISE 11

Decoders and Encoders

EXERCISE 12

BCD adders and Comparators

EXERCISE 13

Code Converters : Decimal –to-Binary, Binary – to – Decimal, Decimal – to- Hexa Decimal,
BCD- to –Decimal, Binary – to- gray, gray- to –Binary

EXERCISE 14

RAM, ROM, PROM, EPROM – Testing Memory Chips

REFERENCES

1. Rajaraman, Radhakrishnan, "Digital Logic and Computer Organization", PHI, 2006.
2. Floyd & Jain, "Digital Fundamentals", Pearson, 2000.



IPU
HEAD
Master of Computer Applications
Lakireddy Bali Reddy College of Engg.
MYLAVARAM - 521 230., Krishna Dt, A.P.

1. Pre-requisites:

- Basic knowledge of Computer Fundamentals.

- Boolean algebra and Number System Fundamentals.

2. Course Educational Objectives (CEOs):

This includes the study of conversions among different number systems, construction of combinational and sequential circuits.

3. Course Outcomes (COs): At the end of the course, the student will be able to:

CO1: To understand the functionality and working various Logic Gates and Universal Gates.

CO2: Ability to construct circuit diagrams and verify various Boolean Algebra rules and theorems.

CO3: Realize of Boolean Expressions and Logic gates using Universal Gates.

CO4: To construct various circuits for implementation of Arithmetic Operations.

CO5: To implement sequential circuits such as Flip-flops, Registers, Counters and Modulo Counters.

CO6: To implement combinational circuits such as Multiplexer, Demultiplexer, Encoder and Decoder and simulated circuits using gates.

4. Course Articulation Matrix:

COURSE ARTICULATION MATRIX (Correlation between COs&POs):

Course Code	COs	Programme Outcomes				
		1	2	3	4	5
	C01	2	3	2	1	
	C02	3	2	1	1	
	C03	1	2	1	1	
	C04	3	2	1	1	
	C05	2	2	1	1	
1= Slight(low)		2=Moderate(Medium)		3=Substantial(High)		

	Course Instructor	Course Coordinator	Module Coordinator	HOD
Signature				
Name of the Faculty	Mr.G RAJENDRA	Mr. K PHANEENDRA	Mr. K PHANEENDRA	Dr. P. Ashok Reddy

Course Delivery Plan:

S.No.	Name of the Experiment	Expected Date	Actual Date	Remarks

CYCLE-I				
1.	Draw the logic symbols, construct the truth tables, and with the help of circuit diagrams explain the working of the following gates. AND, OR, NOT, BUFFER, NOR, XOR, XNOR, NAND, NOR.	07-08-2018 09-08-2018		
2.	Verification of Truth Tables for Boolean Algebra: Theorems and Postulates	14-08-2018 16-08-2018		
3.	Realization of Logic Gates using Universal Gates NAND and NOR Realization of NAND using NOR & NOR Using NAND Realization Exclusive-OR gate using (i) AND – OR-NOT Gates (ii) NAND gates (iii) NOR gates	21-08-2018 23-08-2018		
4.	Adders-Subtractor: Half Adder, Full Adder	28-08-2018		
5.	Adder-Subtractor: Binary Adders, Binary Adder-Subtractor, Binary Incrementer,	30-08-2018 04-09-2018		
6.	Adders, Subtractor, Multiplier, Divider, Comparator.	06-09-2018 11-09-2018		
7.	Combinational Circuits Decoder and Encoder.	13-09-2018		
8.	Multiplexers/ Data Selector: 2- input and 8- input, Demultiplexers, Logic Function Generator.	18-09-2018		
9.	Internal Exam on Cycle-I	20-09-2018		
I-MID EXAMINATIONS(24-09-2018 TO 29-09-2018)				
CYCLE-II				
10.	Shift Operations: Arithmetic Shift, Logical Shift and Circular Shift	02-10-2018 04-10-2018		
11.	Study all the Flip-Flop and the implementation of them by using gates and the simulated Circuits.	09-10-2018 11-10-2018		
12.	Construction of Modulo Counter: Mod-5, Mod-10.	23-10-2018 25-10-2018		
13.	Construction of Modulo Counter: Mod-6, Mod-8.	30-10-2018 01-11-2018		
14.	Counters: Asynchronous Counter Up, Down and Up/Down Counter.	06-11-2018 08-11-2018		
15.	Counters: Synchronous Counter Up, Down and Up/Down Counter.	13-11-2018		
16.	Various types of Code Conversions.	15-11-2018		
17.	RAM, ROM, PROM, EPROM – Testing of Memory Chips	20-11-2018		
18.	Internal Practical Examination in Cycle-II	22-11-2018		
Additional Lab Experiments				
19.	Half-Adder Implementation Using NAND and NOR gates	27-11-2018		
20.	Construct 3X8 decoder using two 2x4 decoders Construct 4X16 decoder using two 3x8 decoders	29-11-2018		
21.	Internal Practical Examination			

	Course Instructor	Course Coordinator	Module Coordinator	HOD
Signature				
Name of the Faculty	Mr.G RAJENDRA	Mr. K PHANEENDRA	Mr. K PHANEENDRA	Dr. P. Ashok Reddy



COURSE HANDOUT

PROGRAM	: M.C.A., I-Sem
ACADEMIC YEAR	: 2018-19
COURSE NAME & CODE	: CD Lab – 17MC60
L-T-P STRUCTURE	: 0-0-2
COURSE CREDITS	: 1
COURSE INSTRUCTOR	: Dr.P.ASHOK REDDY
COURSE COORDINATOR	: Dr.P.ASHOK REDDY

COURSE OBJECTIVE: Software development tools like algorithm, Pseudo codes and programming structure. Basic elements C programming structures like data types, expressions, Control statements, various I/O functions and how to solve simple mathematical Problems using control structures. Design and implementation of various software components which solve real world problems.

Course Educational Objectives:

In this course student will learn about

- The fundamentals of computer.
- The programming fundamentals.
- The logical and programming skills in C language.

Course Outcomes:

At the end of this course student will be able to

- CO1:** Assemble and disassemble a PC
- CO2:** Develop the logical solution for a given problem.
- CO3:** Implement solutions for various problems using C language.
- CO4:** Develop programs for simple applications of real life using structures and files.
- CO5:** Implement Modular Programming and memory management operations.

Implement solutions for various problems using C language

COURSE ARTICULATION MATRIX (Correlation between COs&POs):

Course Code	COs	Programme Outcomes				
		1	2	3	4	5
	CO1	3	3	2		
	CO2	2	3	2		3
	CO3	2	3		3	2
	CO4	2	3	1	2	
	CO5		2	2	3	1
1= Slight(low) 2=Moderate(Medium) 3=Substantial(High)						

Note: Enter Correlation Levels **1** or **2** or **3**. If there is no correlation, put '-'
1- Slight (Low), **2** - Moderate (Medium), **3** - Substantial (High).

LIST OF EXPERIMENTS

Cycle-1:

- 1) Student is expected to observe various components of computer physically and assembling and Disassembling of components.
- 2) Write programs in C Language:
 - a. To Exercise preliminary data types
 - b. To illustrate the usage of various Operators
 - c. To illustrate the order of evaluation of expressions

Cycle-2:

Write programs in C Language

- a) To check whether the given year is leap year (or) not
- b) To convert given two digit number into words using switch statement
- c) To illustrate the usage of 'goto' statement
- d) To find smallest & biggest number from the given set of 4 numbers using 'if' statement.
- e) To calculate the student grade in the examination – assume suitable constraints.
- f) To prepare electricity bill for the consumed units – assume suitable constraints.
- g) To find roots of Quadratic Equation.

Cycle-3:

Write programs in C Language

- a) To display first N natural numbers
- b) To find whether the given number is Armstrong (or) not
- c) To find reverse of the given number and to check whether it is palindrome (or) not.
- d) To find whether given number is strong number (or) not.
- e) To check whether a given number is Prime (or) not
- f) To display prime numbers within the given range (Nesting of Loops).
- g) To display the following formats (Nesting of Loops)

i) 1 1 2 1 2 3 1 2 3 4 1 2 3 4	ii) 5 4 3 2 4 3 2 1 3 2 1 2 1 5 1
---	---

Cycle -4:

Write programs in C Language

- a) To Find the sum and average of given numbers using Arrays.
- b) To display elements of array in reverse order
- c) To search whether the given element is in the array (or) not using linear search & binary search.
- d) Addition, subtraction and multiplication of Matrices
- e) Transpose of given matrix
- f) To illustrate the use of any 5 string handling functions.
- g) To accept line of text and find the number of characters, number of vowels and number of blank spaces in it.
- h) To find whether the given string is palindrome (or) not.

Cycle -5:

Write programs in C Language

- a) To find factorial of a given number using functions.
- b) To swap two numbers using functions.
- c) To find GCD of two numbers using recursion
- d) To solve Towers of Hanoi problem.
- e) To illustrate the use of external & static storage classes.

Cycle-6:

Write programs in C Language

- Illustrating pointer declaration, initialization and Pointer arithmetic.
- To illustrate *call by reference*.
- To find sum of the elements of the array using functions.
- To illustrate the usage of command line arguments.
- To illustrate the usage of dynamic memory management functions.

Cycle-7:

Write programs in C Language

- To process the student records. Assume suitable fields for student structures (Different kinds of initialization of structure variables are to be exercised)
- To read records of 10 employees and find their average salary (Exercise array of structures & Nested structures concepts).
- To handle a structure variable using pointers and implement self - referential structure
- To exercise i) unions ii) bit fields iii) enum

Cycle -8 :

Write programs in C Language

- Accessing content from files and writing content in to it. (Exercise different file operation modes)
- Accessing structured data using files.
- Copy the contents of one file into another (Exercise different file operation modes)
- Exercise random access files operations

Text Book:

- Ajay Mittal, "Programming in C: A Practical Approach" , First Edition , Person Education, 2010

Reference Books:

- Reema Thareja "Programming in C", First Edition, Oxford Publications, 2011.
- Fundamentals of Data Structures in C, Horowitz, Sahni, AndersonFreed, 2nd ed, Universities Press, 2008.

BATCH-1

S.No.	Experiments to be conducted	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
CYCLE-1						
152.	a)Example program which shows the usage of various preliminary data types available in C Language. b)Example program which shows the usage of various Operators available in C.	2	24-08-2018		TLM5	
153.	a) Example programs to illustrate the order of evaluation. b)To check whether the given year is leap year (or) not c) Roots of Quadratic Equation.	2	05-09-2018		TLM5	
154.	a)Finding smallest& biggest number from the given set of 4 numbers using 'if' statement. b)Calculate the student grade in the examination – assume suitable constraints. c)Prepare electricity bill for the consumed units – assume	2	12-09-2018		TLM5	

	suitable constraints.					
155.	a)Converting given two digit number into words using switch statement b)To illustrate the usage of 'goto' statement.	2	19-09-2018		TLM5	
156.	a)To Display first N natural numbers b)To find whether the given number is Armstrong (or) not c)To find reverse of the given number and to check whether it is palindrome (or) not.	2	19-09-2018		TLM5	
157.	a)To find whether given number is strong number (or) not. b)To check whether given number is Prime (or) not c)To display prime numbers with in the given range(Nesting of Loops). i)1 1 2 1 2 3 1 2 3 4 1 2 3 4 5 ii) 5 4 3 2 1 4 3 2 1 3 2 1 2 1 1	2	06-10-2018		TLM5	
CYCLE-2						
158.	a) Finding the sum and average of given numbers using Arrays. b) To display elements of array in reverse order c) To search whether the given element is in the array (or) not using linear search & binary search.	2	10-10-2018		TLM5	
159.	i) Addition, subtraction and multiplication of Matrices ii) Transpose of given matrix	2	13-10-2018		TLM5	
9.	a) Write a C program to find whether the given string is palindrome (or) not. b) To accept line of text and find the number of characters, number of vowels and number of blank spaces in it. c) Write an example program to illustrate the use of any 5 string handling functions.	4	17-10-2018 24-10-2018		TLM5	
10.	a)Example program to bring clarity on pointer declaration & initialization and Pointer arithmetic. b) Write an example program to describe the usage of call by reference. c) Write a program to find sum of the elements of the array	4	27-10-2018 31-10-2018		TLM5	

	using functions.					
11.	a) To find factorial of a given number using functions. b) Swap two numbers using functions. c) To find GCD of two numbers using recursion	2	03-11-2018		TLM5	
12.	a) Write a recursive function to solve Towers of Honai problem. b) Write an example program to illustrate use of external & static storage classes. c) Write an example program to Illustrate the usage of command line arguments. d) Program to illustrate the usage of dynamic memory management functions.	4	10-11-2018 14-11-2018		TLM5	
13.	a) Write an example program using structures to process the student record. Assume suitable fields for student structures b) Write a program to read records of 10 employees and find their average salary (exercise array of structures & Nested structures concepts through this program). c) Write a program to handle a structure variable using pointers and implement self referential structure	4	17-11-2018 21-11-2018		TLM5	
14.	a) Accessing content from files and writing content in to it b) Copy the contents of one file into another	2	24-11-2018		TLM5	
No. of classes required to complete LAB		36	No. of classes conducted:			
30-11-2018 – LAB Internal						

Additional Experiments

Sno	Name of the Experiment	Unit	Expected Date of Conduction	Date of Conduction	Remarks
1	C Program to generate Fibonacci series upto given range	1	12-09-2018		
2	C Program to find factorial of the given number	1	19-09-2018		
3	C Program to check given number is perfect or not	1	19-09-2018		
4	C Programs on searching & Sorting	2	03-11-2018		

5	C Program on usage of macros	3	10-11-2018		
6	Programs Using bitfields, enum	4	14-11-2018		
7	Program using Stack and Queues	5	21-11-2018		
8	Programs on Linked List	5	24-11-2018		

Teaching Learning Methods					
TLM1	Chalk and Talk	TLM4	Problem Solving	TLM7	Seminars or GD
TLM2	PPT	TLM5	Programming	TLM8	Lab Demo
TLM3	Tutorial	TLM6	Assignment or Quiz	TLM9	Case Study

Evaluation Task	Marks
Day to day work & Record(10+10)	20
Internal Test	10
Viva voce	10
Total	40

ACADEMIC CALENDAR:

Description	From	To	Weeks
Orientation classes	30-07-2018	04-08-2018	1W
I Phase of Instructions	06-08-2018	22-09-2018	7W
I Mid Examinations	24-09-2018	29-09-2018	1W
II Phase of Instructions	01-10-2018	01-12-2018	9W
II Mid Examinations	03-12-2018	08-12-2018	1W
Preparation and Practicals	10-12-2018	15-12-2018	1W

	Course Instructor	Course Coordinator	Module Coordinator	HOD
Signature				
Name of the Faculty	Dr.P.ASHOK REDDY	Dr.P.ASHOK REDDY	Dr.P.ASHOK REDDY	Dr.P.ASHOK REDDY



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with 'A' Grade, ISO 9001:2015 Certified Institution

Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada

L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

COURSE HANDOUT

PROGRAM	: MCA, I-Sem
ACADEMIC YEAR	: 2018-19
COURSE NAME & CODE	: IT LAB – 17MC62
L-T-P STRUCTURE	: 0-0-2
COURSE CREDITS	: 1
COURSE INSTRUCTOR	: Y KRANTHI KUMAR
COURSE COORDINATOR	: S SIVA RAMA KRISHNA

Pre-requisite:

- No Pre-requisite

Course Objectives:

In this course student will learn about Microsoft Office Tools which includes

- Microsoft Word
- Microsoft Power Point
- Microsoft Excel
- Microsoft Access

Course Outcomes:

At the end of this course student will be able to:

- Creation of letters, Tables, Pictures and Mail Merge in MS-Word
- Implement various formulas in MS-Excel
- Generate graphs for the given data using MS-Excel
- Design Power Point presentations
- Creating Database, Forms and Generate Reports using MS-Access

Course Articulation Matrix:

Course Code	COs	Programme Outcomes				
		PO1	PO2	PO3	PO4	PO5
17MC62	CO1	2	2		1	
	CO2	1	2			
	CO3	1	1			
	CO4	1	2			
	CO5	2	3		2	
1= Slight(low) 2=Moderate(Medium) 3=Substantial(High)						

LIST OF EXPERIMENTS

Cycle 1: Microsoft Office Word 2007

1. What are various steps involved in creation of letters?
 - a. Using manual process
 - b. Using installed templates
 - c. Using Microsoft office online documents
2. Explain the various methods for creation of tables?
3. Explain step-by-step involved in creation of Mail Merge in MS Word 2007?
4. Explain the various steps involved for inserting the pictures in the word document?

Cycle 2: Microsoft Office Excel 2007

5. Create a spreadsheet of a Mark sheet using following fields
Rollno, Name, English, PCs, C, DBMS, CO, Maths, Practical, Total, Per, Result, Grade
 - Enter 10 records (Marks should enter in out of 100)
 - Calculate TOTAL marks using SUM function.
 - Calculate Percentage
 - Condition to apply on grade
 1. "A" if percentage ≥ 90
 2. "B" if percentage ≥ 75
 3. "C" if percentage ≥ 60
 4. "D" if percentage < 50

In RESULT column display "PASS" text in Blue color and "FAIL" text in Red color and display all < 35 marks in red color.

6. Create following worksheet in MS – Excel. (Save this file: SHOP.XLS)

A	B	C	D	E	F	G
Item Name	Price / Item	Qty	Total Rs.	Discount (%)	Discount(Rs)	Final Pay

For Discount (%) on Total Rs. according to following rules.

- ❖ For Total Rs less than or equal to Rs. 200 – Discount 0 %.
- ❖ For Total Rs > 200 & ≤ 400 Rs. – Discount 3% of Total Rs.
- ❖ For Total Rs between 400 & 800 Rs. – Discount 5% of Total Rs.

❖ For Total Rs more than or equal to 800 Rs. – Discount 10% of Total Rs

7. Prepare an Excel Spreadsheet for calculate Tax amount or employees given the following data

(Enter at least 05 records).

Empno	Employee name	Gender	Basic Salary	DA	HRA	TA	EPF	Net Salary	Tax Payable

- a. Employee No, Employee Name, Gender & Basic Salary are to be entered.
 - b. Calculate remaining fields as per the following conditions:
 - ❖ DA is 61% of the Basic Salary.
 - ❖ HRA is 15% of the Basic Salary.
 - ❖ TA is 5% of the Basic Salary.
 - ❖ EPF is deduction & is 12% of the Basic Salary.
 - ❖ Net Salary is Total Salary-Deduction.
 - c. If the Gender of the employee is Male the following conditions, Apply for Tax Payable Calculation:
 - Up to Rs.1 Lakh of Net Salary- No Tax.
 - Net Salary > 1 Lakh – 10% Tax.
 - d. If the Gender of the employee is Female the following conditions, Apply for Tax Payable Calculation:
 - Up to Rs.1.35 Lakh of Net Salary- No Tax.
 - Net Salary > 1.35 Lakh – 10% Tax.
8. Demonstrate of LOOKUP functions with example?
9. Demonstrate with an example for working with charts with an example?

Cycle 3: Microsoft Office Power Point 2007

10. Design Power Point Presentation using all possible options available.

Cycle 4: Microsoft Office Access 2007

11. Creation of Database and tables by different methods
12. Creation & Querying using forms
13. Creation & Generations of Reports

Course Delivery Plan:

S.No.	Name of the Experiment	Expected Date	Actual Date	Remarks
22.	Introduction to IT Lab and Course outcomes	04-08-2018		
	MS Word			
23.	Creation of Letters	11-08-2018		
24.	Inserting Tables	18-08-2018		
25.	Inserting Pictures	25-08-2018		
26.	Mail Merge	01-09-2018		
	MS Excel			
27.	Create a spreadsheet for student marks and Calculate SUM, AVERAGE, GRADE...etc	08-09-2018		
28.	Create a spreadsheet for items purchased in retail store	15-09-2018		
29.	Create a spreadsheet for Employee Payroll	22-09-2018		
30.	Demonstration of LOOKUP, HLOOKUP AND VLOOKUP functions	06-10-2018		
31.	Demonstration of Graphs and Charts	13-10-2018		
	MS Power Point			
32.	Power Point Presentation using all possible options available	27-10-2018 & 03-11-2018		
	MS Access			
33.	Creation of Database and tables by different methods	10-11-2018		
34.	Creation & Querying using forms	17-11-2018		
35.	Creation & Generations of Reports	24-11-2018		
36.	Internal Practical Examination	12-12-2018		

ACADEMIC CALENDAR:

Description	From	To	Weeks
I Phase of Instructions-1	06-08-2018	22-09-2018	7W
I Mid Examinations	24-09-2018	29-09-2018	1W
II Phase of Instructions	01-10-2018	01-12-2018	9W
II Mid Examinations	03-12-2018	08-12-2018	1W
Preparation and Practical's	10-12-2018	15-12-2018	1W
Semester End Examinations	17-12-2018	29-12-2018	2W

EVALUATION PROCESS:

According to Academic Regulations of R17 Distribution and Weightage of Marks for Laboratory Courses is as follows

(a) Continuous Internal Evaluation (CIE):

The Continuous Internal Evaluation (CIE) is based on the following parameters:

Parameter	Marks
Day to day work & Record(10+10)	20
Internal Test	10
Viva voce	10
Total	40

(b) Semester End Examinations (SEE):

The Semester End examinations (SEE) for laboratory courses shall be jointly conducted by internal and external examiners with 3 hours duration and evaluated for 60 marks.

The performance of the student shall be evaluated as per the parameters indicated below:

Parameter	Marks
Procedure / Algorithm	10
Experimentation / Program execution	15
Observations / Calculations / Testing	15
Result	10
Viva voce	10
Total	60

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	Y Kranthi Kumar	S Siva Rama Krishna	S Siva Rama Krishna	Dr.P.Ashok Reddy
Sign with Date				