

GOVERNMENT DEGREE COLLEGE YELLANDU



Bhadradri Kothagudem Dist.

(Affiliated to Kakatiya University)

Re-Accredited by NAAC with "B" Grade

DEPARTMENT PROFILE



*Department
Of
Computer Science & Applications*

Introduction of Department:

The Department of Computer Science was established in the year of 2000-2001 with the courses at Graduate level, B.Com (Computer Applications) and brought a new group B.Sc in Physical Science with the combination of Mathematics, Physics and Computer Science and B.Sc in Life Science with the combination of Botany, Zoology and Computer Science and B.A Computer Application. The Department Lab is Located in the Ground Floor of the College building. The Lab is spacious and well equipped with internet facility to cater the needs of all students in the Lab that can be accommodated .Funds are being received from, Union Grants Commission.

The Lab consists of 14 Desktop Systems having the latest Configuration with Intel core i5 Processor with 4GB RAMS, 500GB HDD, 18.5Monitor, MSwindows-10.5.2version Operating System. The Lab is supported with Power Backup using UPS consists of 5KVA system with 2hours backup for all the systems accommodated in the Lab.

All the Systems in the Lab are installed with MS-Office, C-Language, CPP and Java Language along with Oracle to meet the requirements of the courses for B.Sc, B.A and B.Com (Computer Applications).

The peoples representative of the area have enormously helped for the establishment And strengthening of the computer department in this college.

The Department was started with B.Com Computer Applications and B.Sc. Computer Science and B.A. Computer Applications with intake of 60 students in each group.

The Department was established under the chairmanship of the Principal Sri. A Purna Chandra Rao and the Department was started with One Computer Lab with 8 Computer Systems and with **1(one)** Guest Lecturer

Sno	Particulars	Dept of Computer Science	Dept of Computer Application
1	Lecturer	1(Guest Lecturer)	
2	Sanctioned strength	60	120
3	Lab	1(One)	

Vision:

To create the most conducive environment for quality academic for under graduates in computer science and Applications and prepare the students for a globalised technological society and orient them towards serving the society.

Mission:

To create, share, and apply knowledge in Computer Science, including in inter disciplinary are as that extend the scope of Computer Science and benefit humanity, to educate students to be successful, and effective life-long learners who will contribute positively to the economic well-being of our region and nation and who are prepared to tackle complex 21st Century challenges facing the world. To impart quality professional training at the undergraduate level with an emphasis on basic principles of computer science. To impart moral and ethical values, and inter personal skills to the students. To empower the students with the required skills to solve the complex technological problems of modern society and also provide them with a framework for promoting collaborative and multi disciplinary activities.

Importance of Computer Science:

As we live in a digital age, most industries rely on data and software programmes. Computer Science & IT impacts everything, from scientific research to health development, transport, banking, communications, you name it. Even objects like microwave ovens, fridges, or door locks are now connected to our Wi-Fi networks and personal assistants. Technology has made the world better, faster, and more connected. But this didn't happen by magic. We arrived here thanks to the brilliant minds of IT graduates, who took their passion for technology and used it to create gadgets and computer programmes which help us every single day.

With a Computer Science degree, you'll learn all the concepts and skills you need to answer these questions and many others. Technology is part of our future, and it is up to people like you to decide how it will impact and shape our world. You don't need to dream

of becoming the next Bill Gates or Steve Jobs. After all, Windows is still buggy, and even iPhones are not what they once were. But you can develop the next generation of gadgets or software programmes which will improve the lives of millions of people.

According to the US Bureau of Labor Statistics, there will be a 13% increase in Computer Science jobs by 2026. You can notice a similar trend in the EU, where the number of ICT (Information and Communications Technology) specialists grew by 36.1% over 10 years (2007–2017). This demand for qualified IT specialists means that Computer Science careers are well paid. In the United States, **for example**, the median annual salary for IT occupations was 86,000 USD in 2018. With that in mind, let's look at some of the best IT jobs and their average annual salary according to U.S. News.

Objectives of the Department:



As Information Technology has become an integral part of education and life style the department focuses on preparing young minds for the globally challenging opportunities in the IT field of digital era.

- Graduates of the Bachelor of Science in Computer Science and Bachelor of Commerce with Computer Applications programs will be actively contributing individually and in teams.
- Demonstrate expertise in problem-solving techniques using the computer.
- Demonstrate ability in at least three high-level programming languages.
- Demonstrate ability in developing and analysis of complex data structures problems.
- Demonstrate knowledge of modern software engineering principles.
- Ethically applying expertise to face the challenges and solve problems, effectively communicating, and building on their knowledge to grow in their careers.

AIM / GOALS OF THE DEPARTMENT:

- To produce outstanding professionals in the field to cater to the needs of Industry and Society by imparting quality technical education and equipping the students with latest skills in the field of technology to face challenges in the fast morphing modern computing industry.
- Heightening the knowledge of the faculty in recent trends through continuous development programmes.
- Transforming the students into globally competent and technically well-equipped Computer Professionals with strong theoretical and practical knowledge.
- Cultivating the spirit of social and ethical values for the cause of development of our

STAFF PERTICULARS:

S.No	Name Of The Lecturer	Designation	Educational Qualification	Teaching Experience	Working Period	Mode Of Appointment	Photo
1	Sri. S. ESWAR	Lecturer in Computer Science & Application	M.Sc (CS), UGC-NET, TS-SET, B.Ed	11 YEARS	15/02/2020	Guest Lecturer	
2	Sri. BABULU	Lecturer in Computer Science & Application	M.C.A, M.TECH	11 YEARS	01/11/2014 TO 01/01/2020	Guest Lecturer	

Academic curriculum:

- Syllabus has been revised in the year 2008 and a common core syllabus is introduced throughout the state by the Andhra Pradesh State Council of Higher Education, Hyderabad.
- The Syllabus can be followed as specified by the Kakatiya University, Warangal.
- The syllabus of the courses followed strictly during the period of 2013-2016 and reviewed periodically.
- The Telangana State Council of Higher Education, Hyderabad was introduced CBCS in 2016.
- The Syllabus can be followed as specified by the Kakatiya University, Warangal.

Course	Group	Medium	Combination
B.Com	Computer Applications	TM/EM	Commerce and Computer Applications
B.Sc.	M.P.Cs	TM/EM	Maths, Physics, Computer Science
B.Sc.	B.Z.Cs	TM/EM	Botany, Zoology, Computer Science
B.A.	Computer Applications	TM/EM	Arts and Computer Applications

STUDENT STRENGTH PARTICULARS

GOVERNMENT DEGREE COLLEGE, YELLANDU. Department Of Computer Science & Applications <i>B.Com Group Strength Particulars 2016-17</i>				
<i>CASTE</i>	<i>GENDER</i>	<i>B. COM I Year</i>	<i>B. COM II Year</i>	<i>B. COM II Year</i>
SC	MALE	1	0	0
	FEMALE	0	0	0
	TOTAL	1	0	0
ST	MALE	5	5	6
	FEMALE	12	11	9
	TOTAL	17	16	15
BC	MALE	1	0	1
	FEMALE	2	0	0
	TOTAL	3	0	1
OC	MALE	0	1	0
	FEMALE	0	0	0
	TOTAL	0	1	0
E-BC	MALE	0	0	0
	FEMALE	0	0	0
	TOTAL	0	0	0
PHC	MALE	0	0	0
	FEMALE	0	0	0
	TOTAL	0	0	0
GRAND TOTAL	MALE	7	6	7
	FEMALE	14	11	9
	TOTAL	21	17	16

GOVERNMENT DEGREE COLLEGE, YELLANDU.
Department Of Computer Science & Applications

B.Com Group Strength Particulars 2017-18

<i>CASTE</i>	<i>GENDER</i>	<i>B. COM I Year</i>	<i>B. COM II Year</i>	<i>B. COM II Year</i>
SC	MALE	0	0	0
	FEMALE	0	0	0
	TOTAL	0	0	0
ST	MALE	0	2	5
	FEMALE	2	8	10
	TOTAL	2	10	15
BC	MALE	0	1	0
	FEMALE	0	2	0
	TOTAL	0	3	0
OC	MALE	0	0	0
	FEMALE	0	0	0
	TOTAL	0	0	0
E-BC	MALE	0	0	0
	FEMALE	0	0	0
	TOTAL	0	0	0
PHC	MALE	0	0	0
	FEMALE	0	0	0
	TOTAL	0	0	0
GRAND TOTAL	MALE	0	3	5
	FEMALE	2	10	10
	TOTAL	2	13	15

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B.Com Group Strength Particulars 2018-19

<i>CASTE</i>	<i>GENDER</i>	<i>B. COM I Year</i>	<i>B. COM II Year</i>	<i>B. COM II Year</i>
SC	MALE	2	0	0
	FEMALE	1	0	0
	TOTAL	3	0	0
ST	MALE	7	0	2
	FEMALE	12	1	7
	TOTAL	19	1	9
BC	MALE	2	0	1
	FEMALE	4	0	1
	TOTAL	6	0	2
OC	MALE	0	0	0
	FEMALE	0	0	0
	TOTAL	0	0	0
E-BC	MALE	1	0	0
	FEMALE	0	0	0
	TOTAL	1	0	0
PHC	MALE	0	0	0
	FEMALE	0	0	0
	TOTAL	0	0	0
GRAND TOTAL	MALE	12	0	3
	FEMALE	17	1	8
	TOTAL	29	1	11

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B.Com Group Strength Particulars 2019-20

<i>CASTE</i>	<i>GENDER</i>	<i>B. COM I Year</i>	<i>B. COM II Year</i>	<i>B. COM II Year</i>
SC	MALE	3	2	0
	FEMALE	0	1	0
	TOTAL	3	3	0
ST	MALE	9	3	0
	FEMALE	6	9	1
	TOTAL	15	12	1
BC	MALE	4	2	0
	FEMALE	2	4	0
	TOTAL	6	6	0
OC	MALE	0	0	0
	FEMALE	0	0	0
	TOTAL	0	0	0
E-BC	MALE	0	0	0
	FEMALE	0	0	0
	TOTAL	0	0	0
PHC	MALE	0	0	0
	FEMALE	0	0	0
	TOTAL	0	0	0
GRAND TOTAL	MALE	16	7	0
	FEMALE	8	14	1
	TOTAL	24	21	1

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B.Com Group Strength Particulars 2020-21

<i>CASTE</i>	<i>GENDER</i>	<i>B. COM I Year</i>	<i>B. COM II Year</i>	<i>B. COM II Year</i>
SC	MALE	1	3	1
	FEMALE	1	0	1
	TOTAL	2	3	2
ST	MALE	5	4	3
	FEMALE	5	7	8
	TOTAL	10	11	11
BC	MALE	1	4	2
	FEMALE	1	1	4
	TOTAL	2	5	6
OC	MALE	0	0	0
	FEMALE	0	0	0
	TOTAL	0	0	0
E-BC	MALE	1	0	0
	FEMALE	0	0	0
	TOTAL	1	0	0
PHC	MALE	0	0	0
	FEMALE	0	0	0
	TOTAL	0	0	0
GRAND TOTAL	MALE	8	11	6
	FEMALE	7	8	13
	TOTAL	15	19	19

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B.A (CA) Group Strength Particulars 2016-21

				2016-17	2017-18	2018-19	2019-20	2020-21
Sno	YEAR & CLASS	GROUP	SANCTIONED STRENGTH	60	60	60	60	60
1	BA – I	H.E.CA	ACTUAL STRENGTH	0	1	13	4	0
2	BA II	H.E.CA	ACTUAL STRENGTH	0	0	1	13	1
3	BA III	H.E.CA	ACTUAL STRENGTH	0	0	0	1	13

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B.SC (M.P.CS) Group Strength Particulars 2016-21

				2016-17	2017-18	2018-19	2019-20	2020-21
Sno	YEAR & CLASS	GROUP	SANCTIONED STRENGTH	60	60	60	60	60
1	B.SC I	M.P.CS	ACTUAL STRENGTH	2	2	0	0	3
2	B.SC II	M.P.CS	ACTUAL STRENGTH	0	2	2	0	0
3	B.SC III	M.P.CS	ACTUAL STRENGTH	0	0	2	2	0

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B.SC (B.Z.CS) Group Strength Particulars 2016-21

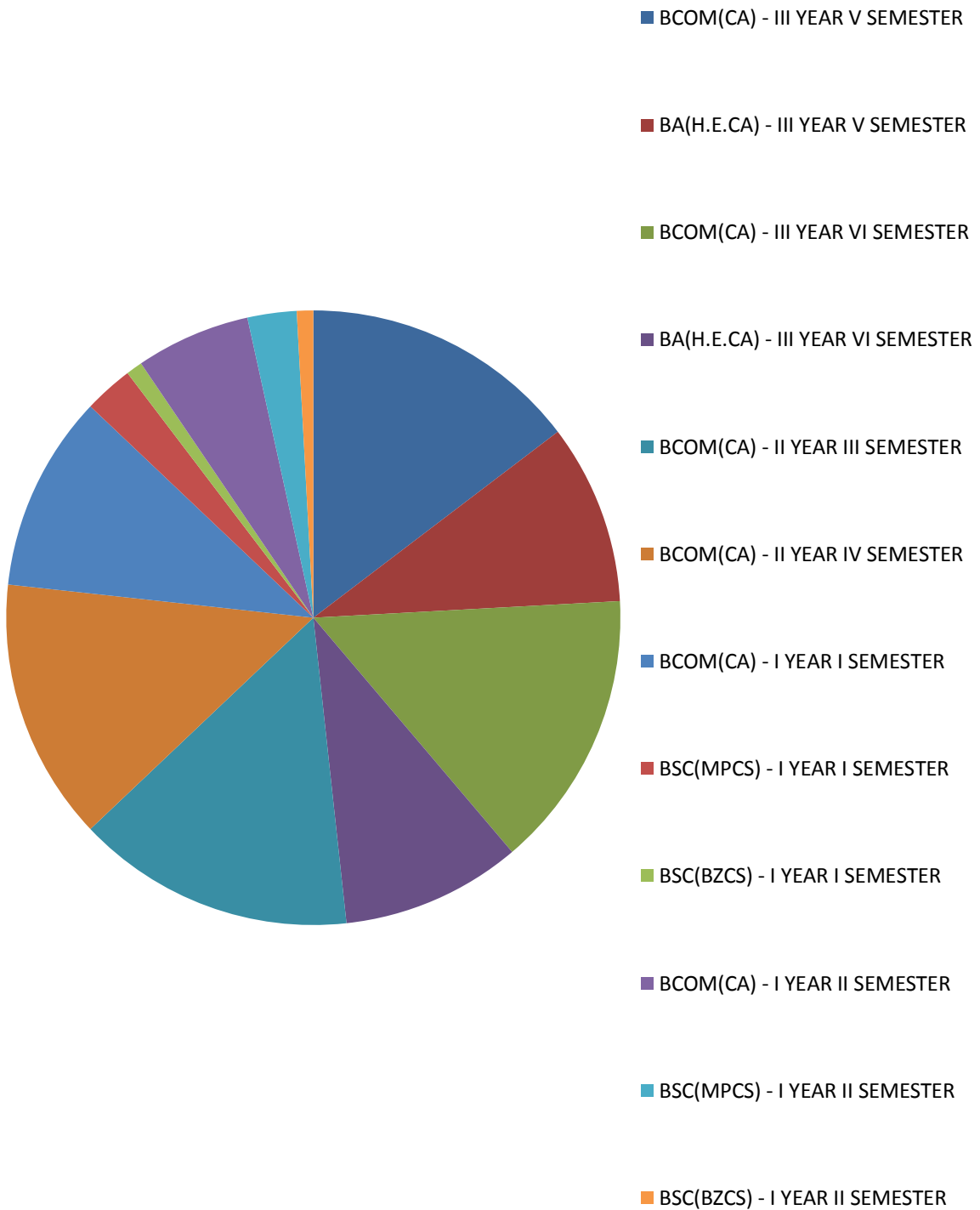
				2016-17	2017-18	2018-19	2019-20	2020-21
Sno	YEAR & CLASS	GROUP	SANCTIONED STRENGTH	60	60	60	60	60
1	B.SC I	B.Z.CS	ACTUAL STRENGTH	0	0	0	0	1
2	B.SC II	B.Z.CS	ACTUAL STRENGTH	0	0	0	0	0
3	B.SC III	B.Z.CS	ACTUAL STRENGTH	0	0	0	0	0

RESULT ANALYSIS:

RESULT ANALYSIS FOR THE ACADEMIC YEAR 2020-21:

SNO	COURSE	APPEARED	PASS	PASS PERCENTAGE
1	BCOM(CA) - III YEAR V SEMESTER	17	17	100
2	BA(H.E.CA) - III YEAR V SEMESTER	11	11	100
3	BCOM(CA) - III YEAR VI SEMESTER	17	17	100
4	BA(H.E.CA) - III YEAR VI SEMESTER	11	11	100
5	BCOM(CA) - II YEAR III SEMESTER	17	17	100
6	BCOM(CA) - II YEAR IV SEMESTER	16	3	18.75
7	BCOM(CA) - I YEAR I SEMESTER	12	12	100
8	BSC(MPCS) - I YEAR I SEMESTER	3	1	33.33
9	BSC(BZCS) - I YEAR I SEMESTER	1	1	100
10	BCOM(CA) - I YEAR II SEMESTER	7	7	100
11	BSC(MPCS) - I YEAR II SEMESTER	3	3	100
12	BSC(BZCS) - I YEAR II SEMESTER	1	1	100

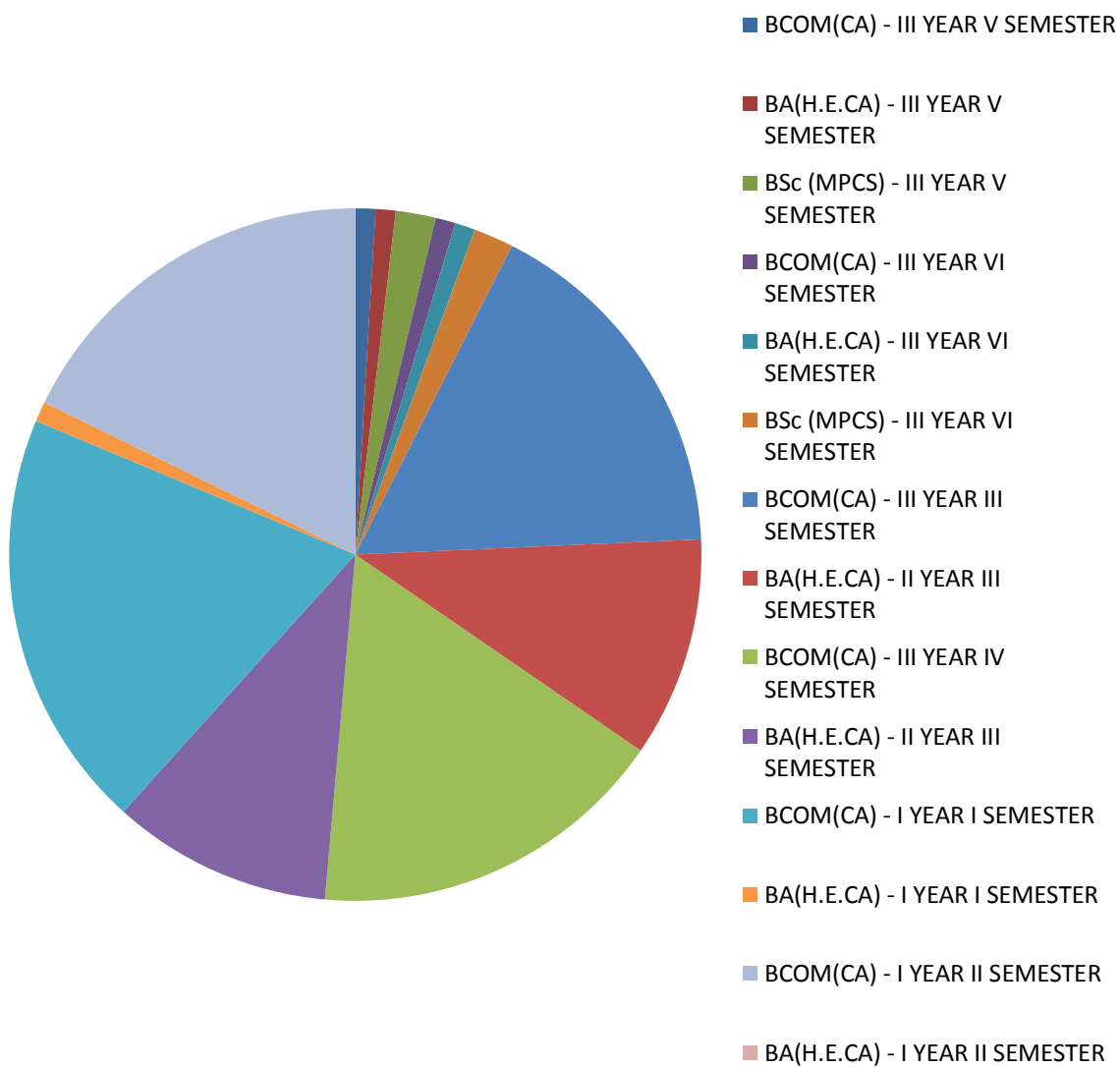
RESULT ANALYSIS FOR THE ACADEMIC YEAR 2020-21:



RESULT ANALYSIS FOR THE ACADEMIC YEAR 2019-20:

SNO	COURSE	APPEARED	PASS	PASS PERCENTAGE
1	BCOM(CA) - III YEAR V SEMESTER	1	1	100
2	BA(H.E.CA) - III YEAR V SEMESTER	1	1	100
3	BSc (MPCS) - III YEAR V SEMESTER	2	0	0
4	BCOM(CA) - III YEAR VI SEMESTER	1	1	100
5	BA(H.E.CA) - III YEAR VI SEMESTER	1	1	100
6	BSc (MPCS) - III YEAR VI SEMESTER	2	2	100
7	BCOM(CA) - III YEAR III SEMESTER	18	9	50
8	BA(H.E.CA) - II YEAR III SEMESTER	11	5	45.45
9	BCOM(CA) - III YEAR IV SEMESTER	18	10	55.6
10	BA(H.E.CA) - II YEAR III SEMESTER	11	11	100
11	BCOM(CA) - I YEAR I SEMESTER	21	8	38.10
12	BA(H.E.CA) - I YEAR I SEMESTER	1	1	100
13	BCOM(CA) - I YEAR II SEMESTER	19	19	100
14	BA(H.E.CA) - I YEAR II SEMESTER	0	0	0

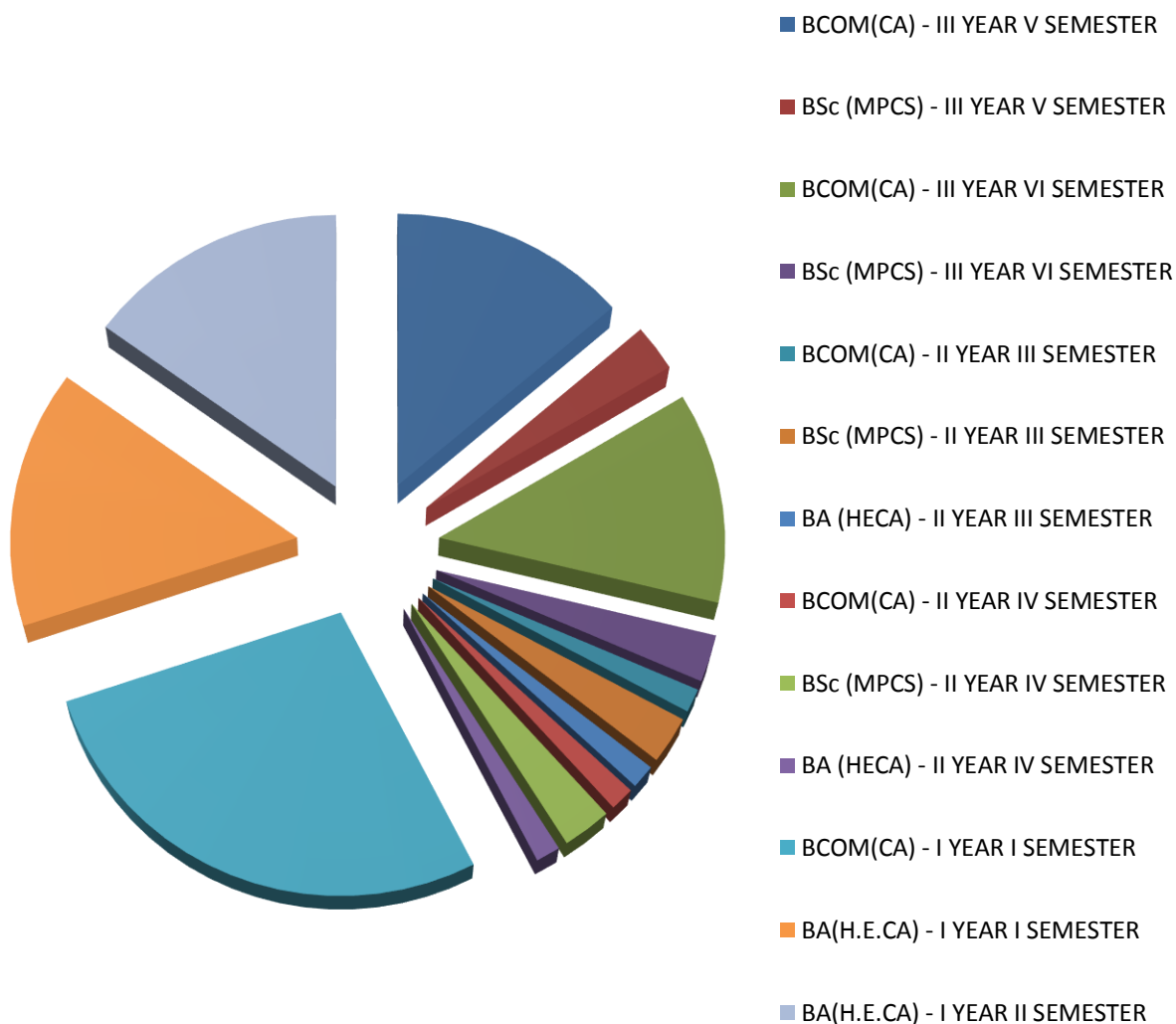
RESULT ANALYSIS FOR THE ACADEMIC YEAR 2019-20



RESULT ANALYSIS FOR THE ACADEMIC YEAR 2018-19:

SNO	COURSE	APPEARED	PASS	PASS PERCENTAGE
1	BCOM(CA) - III YEAR V SEMESTER	10	4	40
2	BSc (MPCS) - III YEAR V SEMESTER	2	1	50
3	BCOM(CA) - III YEAR VI SEMESTER	9	6	67
4	BSc (MPCS) - III YEAR VI SEMESTER	2	0	0
5	BCOM(CA) - II YEAR III SEMESTER	1	0	0
6	BSc (MPCS) - II YEAR III SEMESTER	2	0	0
7	BA (HECA) - II YEAR III SEMESTER	1	1	100
8	BCOM(CA) - II YEAR IV SEMESTER	1	0	0
9	BSc (MPCS) - II YEAR IV SEMESTER	2	0	0
10	BA (HECA) - II YEAR IV SEMESTER	1	0	0
11	BCOM(CA) - I YEAR I SEMESTER	20	8	40
12	BA(H.E.CA) - I YEAR I SEMESTER	11	9	82
13	BA(H.E.CA) - I YEAR II SEMESTER	11	5	45

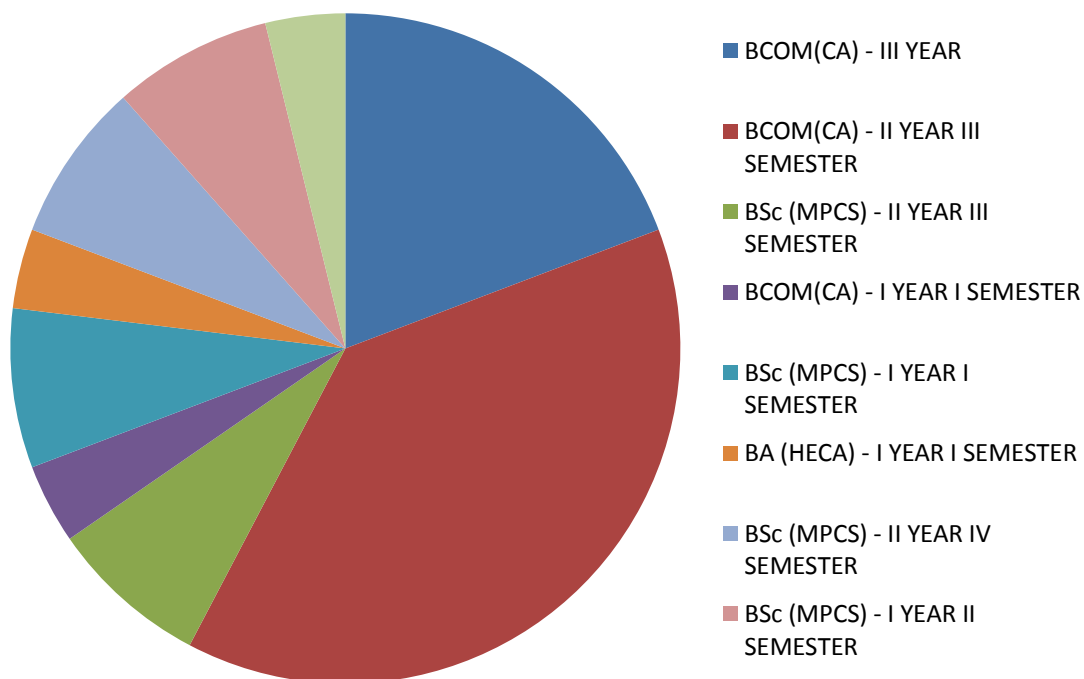
RESULT ANALYSIS FOR THE ACADEMIC YEAR 2018-19



RESULT ANALYSIS FOR THE ACADEMIC YEAR 2017-18:

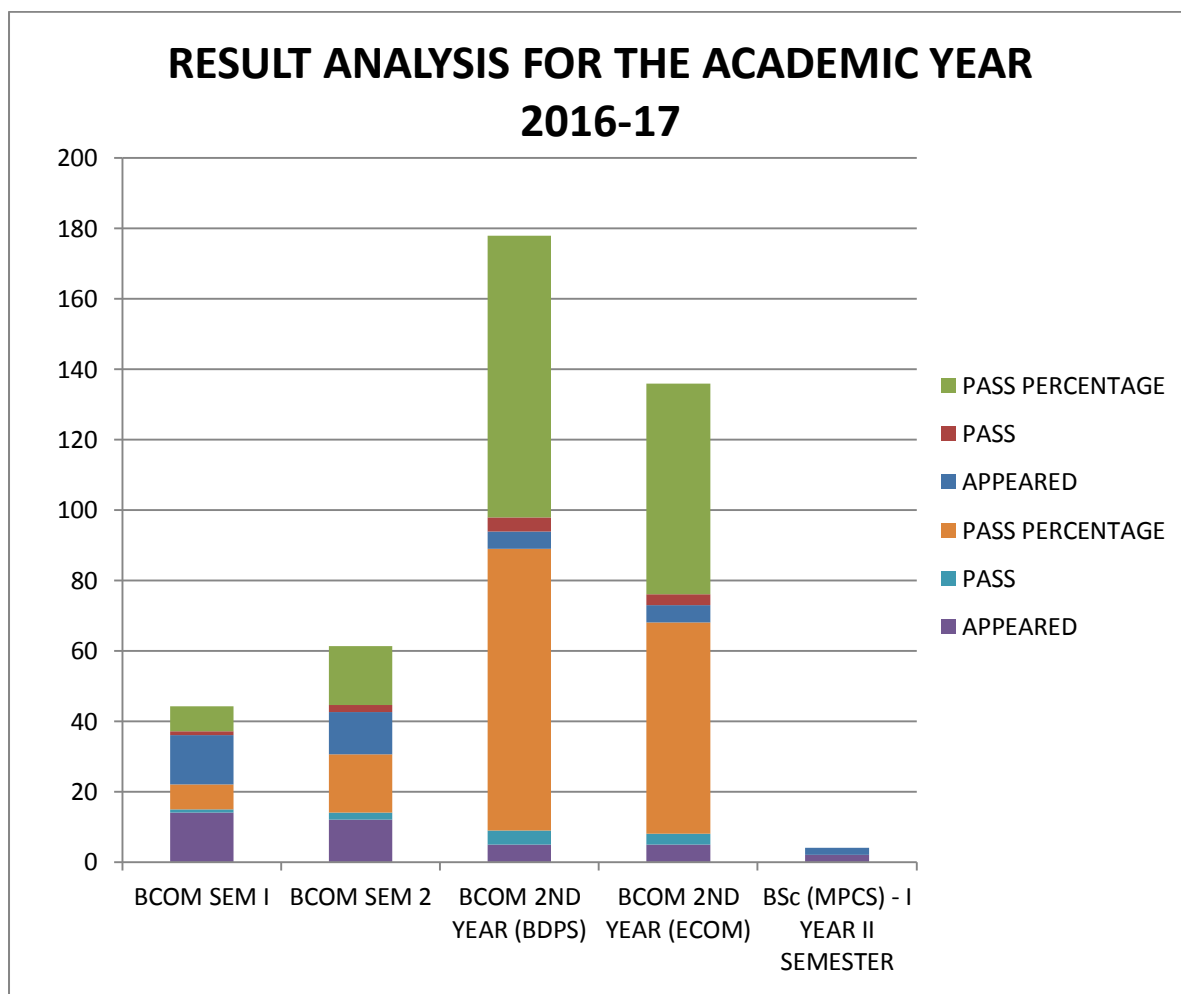
SNO	COURSE	APPEARED	PASS	PASS PERCENTAGE
1	BCOM(CA) - III YEAR	5	5	100
2	BCOM(CA) - II YEAR III SEMESTER	10	4	40
3	BSc (MPCS) - II YEAR III SEMESTER	2	0	0
4	BCOM(CA) - I YEAR I SEMESTER	1	1	100
5	BSc (MPCS) - I YEAR I SEMESTER	2	0	0
6	BA (HECA) - I YEAR I SEMESTER	1	1	100
7	BSc (MPCS) - II YEAR IV SEMESTER	2	0	0
8	BSc (MPCS) - I YEAR II SEMESTER	2	0	0
9	BA (HECA) - I YEAR II SEMESTER	1	1	100

**RESULT ANALYSIS FOR THE ACADEMIC YEAR
2017-18**



RESULT ANALYSIS FOR THE ACADEMIC YEAR 2016-17:

SNO	COURSE	APPEARED	PASS	PASS PERCENTAGE
1	BCOM SEM I	14	1	7.14
2	BCOM SEM 2	12	2	17
3	BCOM 2ND YEAR (BDPS)	5	4	80
4	BCOM 2ND YEAR (ECOM)	5	3	60
5	BSc (MPCS) - I YEAR II SEMESTER	2	0	0



INFRASTRUCTURE:

SNO	NAME OF THE ITEM (CPU)	CPU SERIAL NUMBER	NAME OF THE ITEM (MONITOR)	MONITOR SERIAL NUMBER	NAME OF THE ITEM (KEYBOARD)	KEYBOARD SERIAL NUMBER	NAME OF THE ITEM (MOUSE)	MOUSE SERIAL NUMBER
1	LENOVO THINKCENTRE	L9BHB44	LENOVO	V1WGF80	LENOVO	0001209	LENOVO	4487134
2	LENOVO THINKCENTRE	L9BHB10	LENOVO	V1WXB91	LENOVO	0002271	LENOVO	NO
3	LENOVO THINKCENTRE	L9BHB26	LENOVO	V1WFL11	LENOVO	0001306	LENOVO	4461566
4	LENOVO THINKCENTRE	L9BHB13	LENOVO	V1YFV36	LENOVO	0001338	LENOVO	4468605
5	DELL	2LPJ542	DELL	CN-0HHGGM-64180-513-1E6U	DELL	CN-OGVWNX-71616-4CM-1D6I-A00	WIPRO	P7510045622
6	LENOVO THINKCENTRE	L9BHB24	LENOVO	V1WXB82	LENOVO	0002299	LENOVO	4461631
7	LENOVO THINKCENTRE	L9BHB65	LENOVO	V1YFY66	LENOVO	0000995	LENOVO	NO
8	LENOVO THINKCENTRE	L9BHB66	LENOVO	V1WGB21	LENOVO	0002303	LENOVO	4487215
9	LENOVO THINKCENTRE	L9BHB70	DELL	CN-0HHGGM-64180-513-1E3U	LENOVO	NO	LENOVO	NO
10	LENOVO THINKCENTRE	L9BHB37	LENOVO	V352714	SYSTECH	9112069010446	LENOVO	4487239

11	LENOVO THINKCENTRE	L9BHB40	LENOVO	V1YFL49	DELL	CN- 0GVWNX- 71616-512- 2BLB-A00	ZIPPY'S	Z-611P- 0809
12	LENOVO THINKCENTRE	L9BHB75	LENOVO	V1YFL45	LENOVO	0001050	LENOVO	4461497
13	LENOVO THINKCENTRE	L9BHB77	LENOVO	V1FYF98	DELL	CN- 0GVWNX- 71616- 4CM-1D70- A00	LENOVO	4476348
14	DELL	JHPJ542	DELL	CN- 0HHGGM -64180- 513-1E1U	LENOVO	0001312	DELL	CN011B3 V-73826- 519-0215
15 (ON LECTURER DESK)	DELL	CPPJ542	LENOVO	V1YGH56	LENOVO	0001319	LENOVO	4468611

COMPUTER LAB PRINTER STOCK:

1	HP-LASER JET 1020	CNC0246204
2	CANON PIXMA MG 2570	KJMY32256

COMPUTER LAB FURNITURE:

1	CHAIRS	15
2	TABLES	9
3	CHAIR (ON LECTURER DESK)	1
4	IRON CHAIRS	8
5	IRON LOCKER (BEERUVA)	1

COURSE FILE

Paper Though And Work Load

BCOM(CA)

YEAR	SEMESTER	PAPER	TITLE OF THE PAPER	CREDITS	HPW (Hours Per Week)
I	I	I	Fundamentals of Information Technology	5	6(4T + 2P)
	II	II	Programming with C & C++	5	7(3T + 4P)
II	III	III	Relational Database Management System	5	7(3T + 4P)
	IV	IV	Web Technologies	5	7(3T + 4P)
III	V	V	a) Management Information Systems/ b) Ecommerce/ c) Mobile Applications	5	7(3T + 4P)
	VI	VI	a) Multimedia Systems/ b) Cyber Security/ c) Data Analytics	5	7(3T + 4P)

Paper DSC 103: FUNDAMENTALS OF INFORMATION TECHNOLOGY

Hours Per Week: 6 (4T+2P) **Credits:** 5

Exam Hours: 1 ½ **Marks:** 50U+35P+15I

Objective: To understand the basic concepts and terminology of information technology and to identify issues related to information security.

UNIT-I: INTRODUCTION TO COMPUTERS:

Introduction, Definition, Characteristics of computer, Evolution of Computer, Block Diagram of a computer, Generations of Computer, Classification Of Computers, Applications of Computer, Capabilities and limitations of computer.

Role of I/O devices in a computer system. **Input Units:** Keyboard, Terminals and its types.

Pointing Devices, Scanners and its types, Voice Recognition Systems, Vision Input System,

Touch Screen, **Output Units:** Monitors and its types. Printers: Impact Printers and its types.

Non-Impact Printers and its types, Plotters, types of plotters, Sound cards, Speakers.

UNIT -II: COMPUTER ARITHMETIC & STORAGE FUNDAMENTALS:

Binary, Binary Arithmetic, Number System: Positional & Non Positional, Binary, Octal, Decimal, Hexadecimal, Converting from one number system to another.

Primary Vs Secondary Storage, Data storage & retrieval methods. **Primary Storage:** RAM

ROM, PROM, EPROM, EEPROM. **Secondary Storage:** Magnetic Tapes, Magnetic Disks.

Cartridge tape, hard disks, Floppy disks Optical Disks, Compact Disks, Zip Drive, Flash Drives.

UNIT-III: SOFTWARE:

Software and its needs, Types of S/W. **System Software:** Operating System, Utility Programs -

Programming Language: Machine Language, Assembly Language, High Level Language their

advantages & disadvantages. **Application S/W** and its types: Word Processing, Spread Sheets

Presentation, Graphics, DBMS s/w.

UNIT-IV: OPERATING SYSTEM:

Functions, Measuring System Performance, Assemblers, Compilers and Interpreters.

Batch Processing, Multiprogramming, Multi Tasking, Multiprocessing, Time Sharing, DOS,

Windows, Unix/Linux.

UNIT-V: DATA COMMUNICATION:

Data, Communication, Basic Networking Devices, Communication Process, Data Transmission speed, Communication Types (modes), Data Transmission Media, Modem and its working,

characteristics, Types of Networks, LAN Topologies, Computer Protocols, Concepts relating to

networking.

Paper DSC 203:PROGRAMMING WITH C & C++

Hours Per Week: 5 Credits: 5

Exam Hours: 1 ½ Marks: 50U+35P+15I

Objective:*Fundamental Concepts of Programming in C and Object Oriented Programming in C++.*

UNIT-I: Introduction: Computer of Languages- Flow charts-algorithms-History of C language - Basic Structure-Programming Rules -Commonly used library functions - Executing the C Program - Pre-processors in "C"- Keywords & Identifiers - Constants - **Variables:** Rules for defining variables - Scope and Life of a Variable--**Data types** - Type Conversion - Formatted Input and Output operations. **Operators:** Introduction - Arithmetic - Relational - Logical - Assignment - Conditional - Special - Bitwise -Increment / Decrement operator.

UNIT-II: Conditional statements: Introduction - If statements - If-else statements - nested if-else - break statement-continue and exit-statement - goto-statement-Switch statements.

Looping statements: Introduction-While statements - Do-while statements - For Statements-nested loop statements.

UNIT-III: Functions: Definition and declaration of functions- Function proto type-return statement- types of functions and Built-in functions.**User-defined functions:** Introduction- Need for user defined Function and Components of functions. **Arrays:** Introduction- Defining an array-Initializing an array-One dimensional array- Multi dimensional array. **Strings:** Introduction-Declaring and initializing string- and Handling Strings -String handling functions. **Pointers:** Features of pointers- Declaration of Pointers- advantages of pointers.

UNIT-IV: Structures: Features of Structures - Declaring and initialization of Structures - Structure within Structure-Array of Structures- Enumerated data type. **Unions**-Definition and advantages of Unions comparison between Structure & Unions.

Object Oriented Programming: Introduction to Object Oriented Programming - Structure of C++ -Simple program of C++-Differences between C & C++

UNIT-V: Classes and Objects: Data Members-Member Functions - Object Oriented- Class-Object- Encapsulation-Abstraction concepts-Polymorphism (Function overloading and Operator Overloading) Inheritance- (Inheritance Forms and Inheritance Types).

SUGGESTED READINGS:

1. Programming with C&C++ :IndrakantiSekhar,V.V.R.Raman&V.N.Battu, Himalaya Publishers.
2. Programming in ANSI C: Balagurusamy, McGraw Hill.
3. Mastering C: K.R. Venugopal, McGraw Hill.
4. C: The Complete Reference: H.Schildt, McGraw Hill.
5. Let Us C: Y.Kanetkar, BPB.
6. Objected Oriented Programming with C++: E. Balagurusamy, McGraw Hill.

Faculty of Commerce & Business Management, Kakatiya University, Warangal.

Paper DSC 303: RELATIONAL DATABASE MANAGEMENT SYSTEMS (Only for B.Com.

(Computer Applications) Hours Per Week: 7 (3T+4P) Credits: 5 Exam Hours: 1 ½

Marks: 50U+35P+15I Objective: to acquire basic conceptual background necessary to design and develop simple database system, Relational database mode, ER model and distributed databases, and to write good queries using a standard query language called SQL. **UNIT-I:**

BASIC CONCEPTS: Database Management System - File based system - Advantages of DBMS over file based system - Database Approach - Logical DBMS Architecture - Three level architecture of DBMS or logical DBMS architecture - Need for three level architecture - Physical DBMS Architecture - Database Administrator (DBA) Functions & Role - Data files indices and Data Dictionary - Types of Database. Relational and ER Models: Data Models - Relational Model - Domains - Tuple and Relation - Super keys - Candidate keys - Primary keys and foreign key for the Relations - Relational Constraints - Domain Constraint - Key Constraint - Integrity Constraint - Update Operations and Dealing with Constraint Violations - Relational Operations - Entity Relationship (ER) Model - Entities - Attributes - Relationships - More about Entities and Relationships - Defining Relationship for College Database - E-R Diagram - Conversion of E-R Diagram to Relational Database. **UNIT-II:** **DATABASE INTEGRITY AND NORMALISATION:** Relational Database Integrity - The Keys - Referential Integrity - Entity Integrity - Redundancy and Associated Problems - Single Valued Dependencies - Normalisation - Rules of Data Normalisation - The First Normal Form - The Second Normal Form - The Third Normal Form - Boyce Codd Normal Form - Attribute Preservation - Lossless-join Decomposition - Dependency Preservation. File Organisation : Physical Database Design Issues - Storage of Database on Hard Disks - File Organisation and Its Types - Heap files (Unordered files) - Sequential File Organisation - Indexed (Indexed Sequential) File Organisation - Hashed File Organisation - Types of Indexes - Index and Tree Structure - Multi-key File Organisation - Need for Multiple Access Paths - Multi-list File Organisation - Inverted File Organisation.

UNIT-III: STRUCTURES QUERY LANGUAGE (SQL): Meaning - SQL commands - Data Definition Language - Data Manipulation Language - Data Control Language - Transaction Control Language - Queries using Order by - Where - Group by - Nested Queries. Joins - Views - Sequences - Indexes and Synonyms - Table Handling. **UNIT-IV: TRANSACTIONS AND**

CONCURRENCY MANAGEMENT: Transactions - Concurrent Transactions - Locking Protocol - Serialisable Schedules - Locks Two Phase Locking (2PL) - Deadlock and its Prevention - Optimistic Concurrency Control. Database Recovery and Security: Database Recovery meaning - Kinds of failures - Failure controlling methods - Database errors - Backup & Recovery Techniques - Security & Integrity - Database Security - Authorization.

UNIT-V: DISTRIBUTED AND CLIENT SERVER DATABASES: Need for Distributed Database Systems - Structure of Distributed Database - Advantages and Disadvantages of DDBMS - Advantages of Data Distribution - Disadvantages of Data Distribution - Data Replication - Data Fragmentation. Client Server Databases: Emergence of Client Server Architecture - Need for Client Server Computing - Structure of Client Server Systems & its advantages.

ADVANCED TOPICS: Overview: Parallel Database - Multimedia Database - Mobile Database - Web Database - Multidimensional Database. Data Warehouse - OLTP Vs OLAP - NoSQL Database. **LAB: SQL QUERIES BASED ON VARIOUS COMMANDS. SUGGESTED READINGS:**

1) Database Systems: R.Elmasri & S.B. Navathe, Pearson.; 2) Introduction to Database Management System: ISRD Group, McGraw Hill.; 3) Database Management System: R.Ramakrishnan & J.Gehrke, McGraw Hill.; 4) Modern Database Management: J.A.Hoffer, V.Rames & H.Topi, Pearson.; 5) Database System Concepts: Silberschatz, Korth & Sudarshan, McGraw Hill. 6) Simplified Approach to DBMS: Parteek Bhaia, Kalyani Publishers.

Kakatiya University, Warangal

Faculty of Commerce & Business Management,

B.Com. IV Semester -Paper DSC 403: WEB TECHNOLOGIES (Only for

B.Com (Computer Applications) Hours Per Week: 7 (3T+4P) Credits: 5 Exam Hours: 1

½ Marks: 50U+35P+15I Objective: *To gain skills of usage of Web Technologies to design Web pages.*

UNIT-I: INTRODUCTION: Art of creating a web site - Markup language (HTML) – Hypertext - Formatting text - Forms & formulating instructions & formulation elements – Commenting code – Anchors - Back grounds – Images - Hyperlinks – Lists – Tables – Frames - Web design principles.

UNIT-II: AN OVER VIEW OF DYNAMIC WEB PAGES & DYNAMIC WEB PAGE: An over view of dynamic web pages and dynamic web page technologies: Introduction to Dynamic HTML programming - Cascading style sheets (CSS) - Basic syntax and structure -Events handling - Changing Text and Attributes - Dynamically changing style - Text Graphics and placements - Creating multimedia effects with filters and Transactions.

UNIT-III: JAVA SCRIPT&EVENTS AND EVENT HANDLERS: Java Script: Introduction - Client side Java script - Server side Java script - Core features - Data types and variables – Operators - Expressions and statements – Functions – Objects – Array - Date and math related objects - Document object model - Event handling. **Events And Event Handlers:** General information about Events – Event – OnAbort – OnClick - Ondbl click - Ondrag drop – Onerror - Onfocus - Onkey Press – Onkey Up – Onload - Onmouse Down – Onmouse Move - Onmouse Out – Onmouse Over - Onmove - Onrest – Onresize - Onselect - On submit - Onunload.

UNIT-IV: HYPER TEXT PRE PROCESSOR (PHP): Introduction to PHP: Declaring variables, data types, arrays, strings, operators, expressions, control structures, functions, Reading data from web form controls like text boxes, radio buttons, lists etc., Handling File Uploads. Connecting to database (MySQL as reference), executing simple queries, handling results, Handling sessions and cookies. **File Handling in PHP:**File operations like opening, closing, reading, writing, appending, deleting etc. on text and binary files, listing directories.

UNIT-V: EXTENSIBLE MARKUP LANGUAGE (XML)& JSP: Extensible Markup Language (XML): Introduction - Creating XML Documents - XML style Sheet - Hyperlinksin XML Document Object Model - XML Query Language. **JSP:**Introduction to JSP:The Anatomy of a JSP Page, JSP Processing, Declarations, Directives, Expressions, Code Snippets, implicit objects, Using Beans in JSP Pages, Using Cookies and session for session tracking, connecting to database in JSP.

LAB WORK: CREATING A WEBSITE WITH DYNAMIC FUNCTIONALITY USING CLIENT-SIDE AND SERVER SIDE SCRIPTING.

SUGGESTED READINGS:

1. Web Technology: Pradeep Kumar, HPH
2. Internet & World Wide Web How to Program: Deitel&Deitel, Pearson.
3. Web programming: Chris Bates.
4. HTML & XML An Introduction NIIT, PHI.
5. HTML for the WWW with XHTML & CSS: Wlizabeth Castro, Pearson

Kakatiya University, Warangal.

Faculty of Commerce & Business Management,

B.Com. V Semester - Paper DSE 503b: E-COMMERCE (Only for B.Com. (Computer Applications) Hours Per Week: 7 (3T+4P) Credits: 5 Exam Hours: 1 ½ Marks:

50U+35P+15I **Objective:** to acquire conceptual and application knowledge of ecommerce.

UNIT-I: INTRODUCTION: E-Commerce: Meaning - Advantages & Limitations - E-Business: Traditional & Contemporary Model, Impact of E-Commerce on Business Models - Classification of E-Commerce: B2B - B2C - C2B - C2C - B2E - Applications of Ecommerce: E-Commerce Organization Applications - E-Marketing - E-Advertising - E-Banking - Mobile Commerce - E-Trading - E-Learning - E-Shopping.

UNIT-II:FRAMEWORK OF E-COMMERCE: Framework of E-Commerce: Application Services - Interface Layers - Secure Messaging - Middleware Services and Network Infrastructure - Site Security - Firewalls & Network Security - TCP/IP – HTTP - Secured HTTP – SMTP - SSL. Data Encryption: Cryptography – Encryption – Decryption - Public Key - Private Key - Digital Signatures - Digital Certificates.

UNIT-III:CONSUMER ORIENTED E-COMMERCE APPLICATIONS: Introduction - Mercantile Process Model: Consumers Perspective and Merchant's Perspective - Electronic Payment Systems: Legal Issues & Digital Currency - E-Cash & E-Cheque - Electronic Fund Transfer (EFT) - Advantages and Risks - Digital Token-Based E-Payment System - Smart Cards.

UNIT-IV:ELECTRONIC DATA INTERCHANGE: Introduction - EDI Standards - Types of EDI - EDI Applications in Business – Legal - Security and Privacy issues if EDI - EDI and E-Commerce - EDI Software Implementation.

UNIT-V: E-MARKETING TECHNIQUES: Introduction - New Age of Information - Based Marketing - Influence on Marketing - Search Engines & Directory Services - Charting the On-Line Marketing Process - Chain Letters - Applications of 5P's (Product, Price, Place, Promotion, People) E-Advertisement - Virtual Reality & Consumer Experience - Role of Digital Marketing. **Lab work:** Using Microsoft Front Page Editor and HTML in Designing a Static Webpage/Website. **SUGGESTED READINGS:**

1. Frontiers of Electronic Commerce: Ravi Kalakota, Andrew B Whinston, Pearson
2. E-Commerce: Tulasi Ram Kandula, HPH.
3. Electronic Commerce, A Managers' Guide: Ravi Kalakota, Andrew B Whinston
4. E-Commerce & Computerized Accounting: Rajinder Singh, Er. Kaisar Rasheed, Kalyani
5. E-Commerce & Mobile Commerce Technologies: Pandey, Saurabh Shukla, S. Chand

Kakatiya University, Warangal.

Faculty of Commerce & Business Management,

**B.Com. VI Semester - Paper DSE 603b: CYBER SECURITY (Only for B.Com
(Computer Applications) Hours Per Week: 7 (3T+4P) Credits: 5 Exam Hours: 1 ½
Marks: 50U+35P+15I**

Objective To understand the cyber security, detection, network security, the law and cyber forensic.

UNIT-I: INTRODUCTION TO CYBER SECURITY, CYBER SECURITY VULNERABILITIES AND CYBER SECURITY SAFEGUARDS: Introduction to Cyber Security: Overview of Cyber Security, Internet Governance – Challenges and Constraints, Cyber Threats:- Cyber Warfare-Cyber Crime-Cyber terrorism-Cyber Espionage, Need for a Comprehensive Cyber Security Policy, Need for a Nodal Authority, Need for an International convention on Cyberspace. **Cyber Security Vulnerabilities:** Overview, vulnerabilities in software, System administration, Complex Network Architectures, Open Access to Organizational Data, Weak Authentication, Unprotected Broadband communications, Poor Cyber Security Awareness. **Cyber Security Safeguards:** Overview, Access control, Audit, Authentication, Biometrics, Cryptography, Deception, Denial of Service Filters, Ethical Hacking, Firewalls, Intrusion Detection Systems, Response, Scanning, Security policy, Threat Management.

UNIT-II: SECURING WEB APPLICATION, SERVICES AND SERVERS: Introduction, Basic security for HTTP Applications and Services, Basic Security for SOAP Services, Identity Management and Web Services, Authorization Patterns, Security Considerations, Challenges.

UNIT-III: INTRUSION DETECTION AND PREVENTION: Intrusion, Physical Theft, Abuse of Privileges, Unauthorized Access by Outsider, Malware infection, Intrusion detection and Prevention Techniques, Anti-Malware software, Network based Intrusion detection Systems, Network based Intrusion Prevention Systems, Host based Intrusion prevention Systems, Security Information Management, Network Session Analysis, System Integrity Validation.

UNIT-IV: CRYPTOGRAPHY AND NETWORK SECURITY: Introduction to Cryptography, Symmetric key Cryptography, Asymmetric key Cryptography, Message Authentication, Digital Signatures, Applications of Cryptography. Overview of Firewalls- Types of Firewalls, User Management, VPN Security Security Protocols: - security at the Application Layer- PGP and S/MIME, Security at Transport Layer- SSL and TLS, Security at Network Layer-IPSec. **UNIT-V:**

CYBERSPACE AND THE LAW, CYBER FORENSICS: Cyberspace and The Law: Introduction, Cyber Security Regulations, Roles of International Law, the state and Private Sector in Cyberspace, Cyber Security Standards. The INDIAN Cyberspace, National Cyber Security Policy 2013. **Cyber Forensics:** Introduction to Cyber Forensics, Handling Preliminary Investigations, Controlling an Investigation, Conducting disk-based analysis, Investigating Information-hiding, Scrutinizing E-mail, Validating E-mail header information, Tracing Internet access, Tracing memory in real-time.

SUGGESTED READINGS:

1. Ramandeepkaurnagra, Cyber laws and Intellectual Property Rights, Kalyani Publishers, 7e,
2. Nina Godbole&SunitBelapureCyber Security, Wiley India Pvt Ltd, 2012.
3. Gerald. R. Ferrera, Reder and linchtenstein, Cyber laws – Text and Cases,3e, Cengage learning

Paper Though And Work Load**B.Sc(COMPUTER SCIENCE) (M.P.Cs &B.Z.Cs)**

YEAR	SEMESTER	PAPER	TITLE OF THE PAPER	CREDITS	HPW (Hours Per Week)
I	I	I	PROGRAMMING IN C	5	7(4T+3P)
	II	II	PROGRAMMING IN C++	5	7(4T+3P)
II	III	III	DATA STRUCTURES USING C++	5	7(4T+3P)
	IV	IV	DATA BASE MANAGEMENT SYSTEMS	5	7(4T+3P)
III	V	V	PROGRAMMING IN JAVA	5	7(4T+3P)
	VI	VI	WEB TECHNOLOGIES	5	7(4T+3P)

B.A (COMPUTER APPLICATIONS) (H.P.CA & H.E.CA)

YEAR	SEMESTER	PAPER	TITLE OF THE PAPER	CREDITS	HPW (Hours Per Week)
I	I	I	PROGRAMMING IN C	5	7(4T+3P)
	II	II	PROGRAMMING IN C++	5	7(4T+3P)
II	III	III	RELATIONAL DATA BASE MANAGEMENT SYSTEMS	5	7(4T+3P)
	IV	IV	MULTI MEDIA SYSTEMS	5	7(4T+3P)
III	V	V	PROGRAMMING IN JAVA	5	7(4T+3P)
	VI	VI	WEB TECHNOLOGIES	5	7(4T+3P)

With Effect from the Academic Year 2019-2020

Programming in C Semester -I

Theory	4 Hours/Week	4 credit
Practical	3 Hours/Week	1 credit

Unit – I

Computer Fundamentals: Introduction of Computers, Classification of Computers, Anatomy of a Computer, Memory Hierarchy, Introduction to OS, Operational Overview of a CPU.
Program Fundamentals: Generation and Classification of Programming Languages, Compiling, Interpreting, Loading, Linking of a Program, Developing Program, Software Development.
Algorithms: Definitions, Different Ways of Stating Algorithms (Step-form, Pseudo-code, Flowchart), Strategy for Designing Algorithms, Structured Programming Concept.
Basics of C: Overview of C, Developing Programs in C, Parts of Simple C Program, Structure of a C Program, Comments, Program Statements, C Tokens, Keywords, Identifiers, Data Types, Variables, Constants, Operators and Expressions, Expression Evaluation—precedence and associativity, Type Conversions.

Unit – II

Input-Output: Non-formatted and Formatted Input and Output Functions, Escape Sequences,
Control Statements: Selection Statements – if, if-else, nested if, nested if-else, comma operator, conditional operator, switch; Iterative Statements—while, for, do-while; Special Control Statement—goto, break, continue, return, exit.
Arrays and Strings: One-dimensional Arrays, Character Arrays, Functions from ctype.h, string.h, Multidimensional Arrays.

Unit – III

Functions: Concept of Function, Using Functions, Call-by-Value Vs Call-by-reference, Passing Arrays to Functions, Scope of Variables, Storage Classes, Inline Functions, and Recursion.
Pointers: Introduction, Address of Operator (&), Pointer, Uses of Pointers, Arrays and Pointers, Pointers and Strings, Pointers to Pointers, Array of Pointers, Pointer to Array, Dynamic Memory Allocation.

Unit – IV


User-defined Data Types: Declaring a Structure (Union) and its members, Initialization Structure (Union), Accessing members of a Structure (Union), Array of Structures (Union), Structures verses Unions, Enumeration Types.
Files: Introduction, Using Files in C, Working with Text Files, Working with Binary Files, Files of Records, Random Access to Files of Records, Other File Management Functions.

Text Pradip Dey, Manas Ghosh, Computer Fundamentals and Programming in C (2e)

References BOOKS

Ivor Horton, Beginning C
Ashok Kamthane, Programming in C
Herbert Schildt, The Complete Reference C
Paul Deitel, Harvey Deitel, C How To Program
Byron S. Gottfried, Theory and Problems of Programming with C
Brian W. Kernighan, Dennis M. Ritchie, The C Programming Language
B. A. Forouzan, R. F. Gilberg, A Structured Programming Approach Using C




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Department of Computer Science
KAKATIYA UNIVERSITY
WARANGAL-506 002 (T.S.)

With Effect from the Academic Year 2019-2020

Programming in C++ Semester -II

Theory	4 Hours/Week	4 credits
Practical	3 Hours/Week	1 credit

Unit – I

Introduction to C++: Applications, Example Programs, Tokens, Data Types, Operators, Expressions, Control Structures, Arrays, Strings, Pointers, Searching and Sorting Arrays.
Functions: Introduction, Prototype, Passing Data by Value, Reference Variables, Using Reference Variables as Parameters, Inline Functions, Default Arguments, Overloading Functions, Passing Arrays to Functions.
Object Oriented Programming: Procedural and Object-Oriented Programming, Terminology, Benefits, OOP Languages, and OOP Applications.

Unit – II

Classes: Introduction, Defining an Instance of a Class, Why Have Private Members? Separating Class Specification from Implementation, Inline Member Functions, Constructors, Passing Arguments to Constructors, Destructors, Overloading Constructors, Private Member Functions, Arrays of Objects, Instance and Static Members, Friends of Classes, Member-wise Assignment, Copy Constructors, Operator Overloading, Object Conversion, Aggregation.

Unit – III

Inheritance: Introduction, Protected Members and Class Access, Base Class Access Specification, Constructors and Destructors in Base and Derived Classes, Redefining Base Class Functions, Class Hierarchies, Polymorphism and Virtual Member Functions, Abstract Base Classes and Pure Virtual Functions, Multiple Inheritance.
C++ Streams: Stream Classes, Unformatted I/O Operations, Formatted I/O Operations.

Unit – IV

Exceptions: Introduction, Throwing an Exception, Handling an Exception, Object-Oriented Exception Handling with Classes, Multiple Exceptions, Extracting Data from the Exception Class, Re-throwing an Exception, Handling the bad_alloc Exception.
Templates: Function Templates–Introduction, Function Templates with Multiple Type, Overloading with Function Templates, Class Templates – Introduction, Defining Objects of the Class Template, Class Templates and Inheritance, Introduction to the STL.

Text Tony Gaddis, Starting out with C++: from control structures through objects (7e)

References B. Lippman, C++ Primer
Bruce Eckel, Thinking in C++
K.R. Venugopal, Mastering C++
Herbert Schildt, C++: The Complete Reference
Bjarne Stroustrup, The C++ Programming Language
Sourav Sahay, Object Oriented Programming with C++


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KAKATIYA UNIVERSITY
VADALA, WARRANGAL (T.S.)

KAKATIYA UNIVERSITY
Under Graduate Courses (Under CBCS 2020–2021 on words)
B.Sc. Computer Science II Year
SEMESTER – III
DATA STRUCTURES USING C++

Theory: 4 Hours/Week; Credits: 4 Marks: 100 (Internal: 20; External: 80)

Practical: 3 Hours/Week Credits: 1 Marks: 25

Unit - I

Basic data Structure: Introduction to Data Structures, Types of Data Structures, and Introduction to Algorithms, Pseudo code, and Relationship among data, data structures, and algorithms, Implementation of data structures, Analysis of Algorithms.

Stacks: Concept of Stacks and Queues, Stacks, Stack Abstract Data Type, Representation of Stacks Using Sequential Organization (Arrays), Multiple Stacks, Applications of Stack, Expression Evaluation and Conversion, Polish notation and expression conversion, Processing of Function Calls, Reversing a String with a Stack, Recursion.

Unit - II

Recursion: Introduction, Recurrence, Use of Stack in Recursion, Variants of Recursion, Recursive Functions, Iteration versus Recursion.

Queues: Concept of Queues, Queue as Abstract Data Type, Realization of Queues Using Arrays, Circular Queue, Multi-queues, Dequeue, Priority Queue, Applications of Queues,

Linked Lists: Introduction, Linked List, Linked List Abstract Data Type, Linked List Variants, Doubly Linked List, Circular Linked List, Representation of Sparse Matrix Using Linked List, Linked Stack, Linked Queue.

Unit - III

Trees: Introduction, Types of Trees, Binary Tree, Binary Tree Abstract Data Type, Realization of a Binary Tree, Insertion of a Node in Binary Tree, Binary Tree Traversal, Other Tree Operations, Binary Search Tree, Threaded Binary Tree, Applications of Binary Trees.

Searching and Sorting: Search Techniques-Linear Search, Binary Search, Sorting Techniques-Selection Sort, Bubble Sort, Insertion Sort, Merge Sort, Quick Sort, Comparison of All Sorting Methods, Search Trees: Symbol Table, Optimal Binary Search Tree, AVL Tree (Height-balanced Tree).

Unit - IV

Graphs: Introduction, Representation of Graphs, Graph Traversal – Depth First Search, Breadth First Search, Spanning Tree, Prim's Algorithm, Kruskal's Algorithm.

Hashing: Introduction, Key Terms and Issues, Hash Functions, Collision Resolution Strategies, Hash Table Overflow, Extendible Hashing

Heaps: Basic Concepts, Implementation of Heap, Heap as Abstract Data Type, Heap Sort, Heap Applications.

Text books:

1. Varsha H. Patil "Data structures using C++" Oxford University press, 2012
2. M.T. Goodrich, R. Tamassia and D. Mount, Data Structures and Algorithms in C++, John Wiley and Sons, Inc., 2011.

References:

1. Adam Drozdek "Data structures and algorithm in C++" Second edition, 2001
2. T.H. Cormen, C.E. Leiserson, R.L. Rivest and C. Stein, Introduction to Algorithms, 2nd Ed., Prentice-Hall of India, 2006.
3. Robert L. Kruse and A.J. Ryba, Data Structures and Program Design in C++, PrenticeHall, Inc., NJ, 1998.
4. B. Stroustrup, The C++ Programming Language, Addison Wesley, 2004
5. D.E. Knuth, Fundamental Algorithms (Vol. I), Addison Wesley, 1997

KAKATIYA UNIVERSITY
Under Graduate Courses (Under CBCS 2020 – 2021 onwards)
B.Sc. Computer Science II Year
SEMESTER – IV
DATA BASE MANAGEMENT SYSTEMS

Theory: 4 Hours/Week; Credits: 4 Marks: 100 (Internal: 20; External: 80)

Practical: 3 Hours/Week Credits: 1 Marks: 25

Unit - I

Introduction: Database-System Applications, Purpose of Database Systems, View of Data, Database Languages, Relational Databases, Database Design, Data Storage and Querying, Transaction Management, Database Architecture, Database Users and Administrators.

Introduction to the Relational Model: Structure of Relational Databases, Database Schema, Keys, Schema Diagrams, Relational Query Languages, Relational Operations.

Unit - II

Database Design and the E-R Model: Overview of the Design Process, The Entity- Relationship Model, Constraints, Removing Redundant Attributes in Entity Sets, Entity-Relationship Diagrams, Reduction to Relational Schemas, Entity-Relationship Design Issues, Extended E-R Features, Alternative Notations for Modeling Data, Other Aspects of Database Design.

Relational Database Design: Features of Good Relational Designs, Atomic Domains and First Normal Form, Decomposition Using Functional Dependencies, Functional- Dependency Theory, Decomposition Using Multivalued Dependencies, Normal Forms-2 NF, 3 NF, BCNF, The Database Design Methodology for Relational Databases.

Unit - III

Introduction to SQL: Overview of the SQL Query Language, SQL Data Definition, Basic Structure of SQL Queries, Additional Basic Operations, Set Operations, Null Values, Aggregate Functions, Nested Subqueries, Modification of the Database.

Intermediate SQL: Join Expressions, Views, Transactions, Integrity Constraints, SQL Data Types and Schemas, Authorization.

Advanced SQL: Accessing SQL from a Programming Language, Functions and Procedures, Triggers, Recursive Queries.

Unit - IV

Transaction Management: Transaction Support–Properties of Transactions, Database Architecture, Concurrency Control–The Need for Concurrency Control, Serializability and Recoverability, Locking Methods, Deadlock, Time Stamping Methods, Multi-version Timestamp Ordering, Optimistic Techniques, Granularity of Data Items, Database Recovery–The Need for Recovery, Transactions and Recovery, Recovery Facilities, Recovery Techniques, Nested Transaction Model. Security: Database Security–Threats, Computer-Based Controls–Authorization, Access Controls, Views, Backup and Recovery, Integrity, Encryption, RAID.

Text book:

1. Silberschatz, H. Korth and S. Sudarshan, Database System Concepts, 6th Ed., Tata McGraw Hill, 2011
2. Thomas M. Connolly, Carolyn E. Begg, Database Systems–A Practical Approach to Design, Implementation, and Management (6e)

KAKATIYA UNIVERSITY
FACULTY OF SCIENCE
B.Sc. (Computer Science)
SEMESTER – V
Programming in Java

Theory	4 Hours/Week	4 Credit	Internal marks = 20
Practical	3 Hours/Week	1 Credit	External Marks = 80

Unit - I

Introduction: Java Essentials, JVM, Java Features, Creation and Execution of Programs, Data Types, Structure of Java Program, Type Casting, Conditional Statements, Loops, Classes, Objects, Class Declaration, Creating Objects.

Unit - II

Method Declaration and Invocation, Method Overloading, Constructors – Parameterized Constructors, Constructor Overloading, Cleaning-up unused Objects. Class Variables & Method-static Keyword, this Keyword, One-Dimensional Arrays, Two-Dimensional Arrays, Command-Line Arguments, Inner Class.

Inheritance: Introduction, Types of Inheritance, extends Keyword, Examples, Method Overriding, super, final Keyword, Abstract classes, Interfaces, Abstract Classes Verses Interfaces.

Packages: Creating and Using Packages, Access Protection, Wrapper Classes, String Class, StringBuffer Class.

Unit - III

Exception: Introduction, Types, Exception Handling Techniques, User-Defined Exception.

Multithreading: Introduction, Main Thread and Creation of New Threads –By Inheriting the Thread Class or Implementing the Runnable Interface, Thread Lifecycle, Thread Priority and Synchronization.

Input/Output: Introduction, java.io Package, File Streams, FileInputStream Class, FileOutputStream Class, Scanner Class, BufferedInputStream Class, BufferedOutputStream Class, RandomAccessFile Class.

Unit - IV

Applets: Introduction, Example, Life Cycle, Applet Class, Common Methods Used in Displaying the Output (Graphics Class).

Event Handling: Introduction, Types of Events, Example.

AWT: Introduction, Components, Containers, Button, Label, Checkbox, Radio Buttons, Container Class, Layouts.

Swings: Introduction, Differences between Swing and AWT, JFrame, JApplet, JPanel, Components in Swings, Layout Managers, JTable.

Text Book:

1. Sachin Malhotra, Saurabh Choudhary, Programming in Java (2e)

References:

1. Bruce Eckel, Thinking in Java (4e)
2. Herbert Schildt, Java: The Complete Reference (9e)
3. Y. Daniel Liang, Introduction to Java Programming (10e)
4. Paul Deitel, Harvey Deitel, Java: How To Program (10e)
5. Cay S. Horstmann, Core Java Volume I –Fundamentals (10e)

Department of Computer Science, KU

With Effect from the Academic Year 2019-2020


D. S. RAVIA
Chairperson BOS
Department of Computer Science
KAKATIYA UNIVERSITY
Warangal- 506 009 (T.S.)

KAKATIYA UNIVERSITY
FACULTY OF SCIENCE
B.Sc. (Computer Science)
SEMESTER – VI
Web Technologies

Theory	4 Hours/Week	4 Credit	Internal marks = 20
Practical	3 Hours/Week	1 Credit	External Marks = 80

Unit – I

Introduction To XHTML– Introduction, first HTML, Headings, Linking, Images, special characters and horizontal rules, Lists, Tables, Frames, Forms, internal linking, meta Elements. CASCADING STYLE SHEETS – Introduction, Inline Styles, Embedded Style Sheets, Conflicting Styles, Linking external sheets, position Elements, box model and text flow, media types, building a CSS drop-down menu, user style sheets, CSS3.

Unit – II

Introduction To Java Scripting- introduction, simple program, prompt dialog and alert boxes, memory concepts, operators, decision making, control structures, if... else statement, while, counter-controlled repetitions, switch statement, do... while statement, *break* and *continue* statements. Functions – program modules in JavaScript, programmer–defined functions, functions definition, scope rules, global functions, Recursion.

Unit – III

Arrays- introduction, declaring and allocating arrays, references and reference parameters, passing arrays to functions. Multidimensional arrays, **EVENTS** – registering event handling, event onload, onmouseover, onmouseout, onfocus, onblur, onsubmit, onreset, event bubbling, more events. **JAVA SCRIPT OBJECTS** – introduction to object technology, Math Object, String Object, Date Object, Boolean and Number Object, document and window Objects, using cookies.

Unit – IV

XML - Introduction, XML Basics, Structuring Data, XML Namespaces, Document Type Definitions (DTDs), W3C XML Schema Documents, XML Vocabularies, Extensible Style sheet Language and XSL Transformations, Document Object Model (DOM).

Ajax-Enabled Rich Internet Applications: introduction, history of Ajax, traditional web applications Vs Ajax Applications, RIAs with Ajax, Ajax example using XMLHttpRequest object, XML and DOM, creating full scale Ajax-enabled application, Dojo Toolkit.

Text Book:

1. Internet & World Wide Web: HOW TO PROGRAM- H. M. Deitel, P.J. Deitel, -Fourth Edition- Pearson edition.

Department of Computer Science, KU



With Effect from the Academic Year 2019-2020

Department of Computer Science
KAKATIYA UNIVERSITY
Warangal- 506 009 (T.S.)

KAKATIYA UNIVERSITY

Under Graduate Courses (Under CBCS 2020 – 2021 onwards)

B.A. / B.Sc. Life Science II Year Computer Applications

SEMESTER – III

RELATIONAL DATA BASE MANAGEMENT SYSTEMS

Theory: 4 Hours/Week; Credits: 4 Marks: 100 (Internal: 20; External: 80)

Practical: 3 Hours/Week Credits: 1 Marks: 25

Unit-I Basic Concepts: Database Management System, File based system, Advantages of DBMS over file based system, Database Approach, Logical DBMS Architecture, Three level architecture of DBMS or logical DBMS architecture, Need for three level architecture, Physical DBMS Architecture, Database Administrator (DBA) Functions & Role, Data files indices and Data Dictionary, Types of Database. Relational and ER Models: Data Models, Relational Model, Domains, Tuple and Relation, Super keys, Candidate keys, Primary keys and foreign key for the Relations, Relational Constraints, Domain Constraint, Key Constraint, Integrity Constraint, Update Operations and Dealing with Constraint Violations, Relational Operations, Entity Relationship (ER) Model, Entities, Attributes, Relationships, More about Entities and Relationships, Defining Relationship for College Database, E-R Diagram, Conversion of E-R Diagram to Relational Database.

Unit-II Database Integrity And Normalization: Relational Database Integrity, The Keys, Referential Integrity, Entity Integrity, Redundancy and Associated Problems – Single Valued Dependencies – Normalization, Rules of Data Normalization, The First Normal Form, The Second Normal Form, The Third Normal Form, Boyce Codd Normal Form, Attribute Preservation, Lossless, join Decomposition Dependency Preservation. File Organization: Physical Database Design Issues, Storage of Database on Hard Disks, File Organization and Its Types, Heap files (Unordered files), Sequential File Organization – Indexed (Indexed Sequential) File Organization, Hashed File Organization, Types of Indexes, Index and Tree Structure.

Unit-III Structures Query Language (SQL): Meaning – SQL commands, Data Definition Language, Data Manipulation Language – Data Control Language, Transaction Control Language Queries using Order by, Where, Group by, Nested Queries. Joins – Views – Sequences, Indexes and Synonyms, Table Handling. Advanced SQL: Accessing SQL from a Programming Language, Functions and Procedures, Triggers, Recursive Queries.

Unit-IV Transactions and Concurrency Management: Transactions, Concurrent Transactions, Locking Protocol, Serializable Schedules – Locks Two Phase Locking (2PL), Deadlock and its Prevention, Optimistic Concurrency Control. Database Recovery and Security: Database Recovery meaning, Kinds of failures – Failure Controlling methods, Database errors, Backup & Recovery Techniques, Security & Integrity. **Text Book:** Database Systems: R.Elmasri& S.B. Navathe, Pearson. **References:** 1. Introduction to Database Management System: ISRD Group, McGraw Hill. 2. Database Management System: R.Ramakrishnan & J.Gehrke, McGraw Hill. 3. Modern Database Management: J.A.Hoffer, V.Rames & H.Topi, Pearson.

KAKATIYA UNIVERSITY

Under Graduate Courses (Under CBCS 2020 – 2021 onwards)

B.A. / B.Sc. Life Science II Year Computer Applications

SEMESTER – III

RELATIONAL DATA BASE MANAGEMENT SYSTEMS - LAB

Practical 3 Hours/Week 1 Credit Marks: 25

Note:

- Programs of all the Concepts from Text Book including exercises must be practice and execute.
- In the external lab examination student has to execute two programs with compilation and deployment steps are necessary.
- External Vice-Voce is compulsory.

1. Create a database having two tables with the specified fields, to computerize a library system of a University College.

Library Books (Accession number, Title, Author, Department, Purchase Date, Price), Issued Books (Accession number, Borrower) a) Identify primary and foreign keys. Create the tables and insert at least 5 records in each table. b) Delete the record of book titled “Database System Concepts”. c) Change the Department of the book titled “Discrete Maths” to “CS”. d) List all books that belong to “CS” department. e) List all books that belong to “CS” department and are written by author “Navathe”. f) List all computer (Department=“CS”) that have been issued. g) List all books which have a price less than 500 or purchased between “01/01/1999” and “01/01/2004”. 2. Create a database having three tables to store the details of students of Computer Department in your college. Personal information about Student (College roll number, Name of student, Date of birth, Address, Marks (rounded off to whole number) in percentage at 10 + 2, Phone number) Paper Details (Paper code, Name of the Paper) Student’s Academic and Attendance details (College roll number, Paper Code, Attendance, Marks in home examination).

a) Identify primary and foreign keys. Create the tables and insert at least 5 records in each table.

b) Design a query that will return the records (from the second table) along with the name of student from the first table, related to students who have more than 75% attendance and more than 60% marks in paper2.

c) List all students who live in “Warangal” and have marks greater than 60 in paper1.

d) Find the total attendance and total marks obtained by each student.

e) List the name of student who has got the highest marks in paper2.

3. Create the following tables and answer the queries given below:

Customer (Cust ID, email, Name, Phone, Referrer ID) Bicycle (Bicycle ID, Date Purchased, Color, Cust ID, Model No) Bicycle Model (Model No, Manufacturer, Style) Service (Start Date, Bicycle ID, End Date)

a) Identify primary and foreign keys. Create the tables and insert at least 5 records in each table.

b) List all the customers who have the bicycles manufactured by manufacturer

“Honda”.

c) List the bicycles purchased by the customers who have been referred by

Customer “C1”.

d) List the manufacturer of red colored bicycles.

e) List the models of the bicycles given for service.

4. Create the following tables, enter at least 5 records in each table and answer the queries given below. Employee (Person Name, Street, City) Works (Person_Name, Company_Name, Salary) Company (Company_Name, City) Manages (Person_Name, Manager_Name)

a) Identify primary and foreign keys. b) Alter table employee, add a column "email" of type varchar(20). c) Find the name of all managers who work for both Samba Bank and NCB Bank. d) Find the names, street address and cities of residence and salary of all employees who work for "Samba Bank" and earn more than \$10,000.

f) Find the names of all employees who live in the same city as the company for which they work.

f) Find the highest salary, lowest salary and average salary paid by each company. g) Find the sum of salary and number of employees in each company. h) Find the name of the company that pays highest salary.

5. Create the following tables, enter at least 5 records in each table and answer the queries given below. Suppliers (SNo, Sname, Status, SCity) Parts (PNo, Pname, Colour, Weight, City) Project (JNo, Jname, Jcity) Shipment (Sno, Pno, Jno, Qunatity)

a) Identify primary and foreign keys.
b) Get supplier numbers for suppliers in Paris with status>20.
c) Get suppliers details for suppliers who supply part P2. Display the supplier list in increasing order of supplier numbers.

d) Get suppliers names for suppliers who do not supply part P2.
e) For each shipment get full shipment details, including total shipment weights.
f) Get all the shipments where the quantity is in the range 300 to 750 inclusive.
g) Get part nos. for parts that either weigh more than 16 pounds or are supplied by suppliers S2, or both.

h) Get the names of cities that store more than five red parts.
i) Get full details of parts supplied by a supplier in Hyderabad.

j) Get part numbers for part supplied by a supplier in Warangal to a project in

Chennai.

k) Get the total number of project supplied by a supplier (say, S1).

l) Get the total quantity of a part (say, P1) supplied by a supplier (say, S1).

6. Write a PL/SQL Program to demonstrate Procedure.

7. Write a PL/SQL Program to demonstrate Function.

8. Write a PL/SQL program to Handle Exceptions.

9. Write a PL/SQL Program to perform a set of DML Operations.

10. Create a View using PL/SQL program.

11. Write a PL/SQL Program on Statement Level Trigger.

12. Write a PL/SQL Program on Row Level Trigger.

KAKATIYA UNIVERSITY
Under Graduate Courses (Under CBCS 2020-2021 onwards)
B.A. / B.Sc. Life Science (Computer Applications) II Year
SEMESTER – IV
MULTI MEDIA SYSTEMS

Theory: 4 Hours/Week; Credits: 4 Marks: 100 (Internal: 20; External: 80)

Practical: 3 Hours/Week Credits: 1 Marks: 25

Unit - I Multimedia: Introduction, Definitions, Where to Use Multimedia- Multimedia in Business, Schools, Home, Public Places, Virtual Reality; Delivering Multimedia. Text: Meaning, Fonts and Faces, Using Text in Multimedia, Computers and Text, Font Editing and Design Tools, Hypermedia and Hypertext. Images: Before You Start to Create, Making Still Images, Color.

Unit - II Sound: The Power of Sound, Digital Audio, MIDI Audio, MIDI vs. Digital Audio, Multimedia System Sounds, Audio File Formats, Adding Sound to Your Multimedia Project. Animation: The Power of Motion, Principles of Animation, Animation by Computer, Making Animations. Video: Using Video, How Video Works and Is Displayed, Digital Video Containers, Obtaining Video Clips, Shooting and Editing Video.

Unit - III Making Multimedia: The Stages of a Multimedia Project, the Intangibles, Hardware, Software, Authoring Systems Designing and producing: designing the structure, designing the user interface, a multimedia design case history, producing.

Unit - IV The Internet and Multimedia: Internet History, Internetworking, Multimedia on the Web. Designing for the World Wide Web: Developing for the Web, Text for the Web, Images for the Web, Sound for the Web, Animation for the Web, Video for the Web. Delivering: Testing, Preparing for Delivery, Delivering on CD-ROM, DVD and World Wide Web, Wrapping.

Text Book:

1. Tay Vaughan, "Multimedia: Making it work", TMH, Eighth edition.

References:

1. Ralf Steinmetz and KlaraNaharstedt, "Multimedia: Computing, Communications Applications", Pearson.
2. Keyes, "Multimedia Handbook", TMH.
3. K. Andleigh and K. Thakkar, "Multimedia System Design", PHI.
4. Spoken Tutorial on "GIMP" as E-resource for Learning:-<http://spoken-tutorial.org>
5. Spoken Tutorial on "Blender" as E-resource for Learning:-<http://spoken-tutorial.org>

KAKATIYA UNIVERSITY
Under Graduate Courses (Under CBCS 2020- 2021 onwards)
B.A. / B.Sc. Life Science (Computer Applications)
II Year SEMESTER – IV
MULTI MEDIA SYSTEMS –LAB

Practical 3 Hours/Week 1 Credit Marks: 25

Note:

- Programs of all the Concepts from Text Book including exercises must be practice and execute.
- Faculty must take care about UG Standard Programs.
- In the external lab examination student has to execute two programs with compilation and deployment steps are necessary.
- External Vice-Voce is compulsory.

Example programs: Practical exercises based on concepts listed in theory using Presentation tools in office automation tool/ GIMP/Blender / Audacity/ Animation Tools/ Image Editors/ Video Editors. Implement the followings using Blender -

1. Create an animation using the tools panel and the properties panel to draw the following –
Line,

Pen, oval, circle, rectangle, square, pencil,brush, lasso tool

2. Create an animation using text tool to set the font, size, colour etc.

3. Create an animation using Free transform tool that should use followings-

Move Objects Skew Objects Stretch Objects Rotate Objects Stretch Objects while maintaining proportion Rotate Objects after relocating the center dot

4. Create an animation using layers having following features-

Insert layer, Delete layer, guide layer, Mask layer.

5. Modify the document (changing background colour etc.)Using the following tools

Eraser tool Hand tool Ink bottle tool Zoom tool Paint Bucket tool Eyedropper tool

6. Create an animation for bus car race in which both starts from the same point and car wins the race.

7. Create an animation in which text Hello gets converted into GoodBye (using motion/shape tweening).

8. Create an animation having five images having fade-in fade-out effect.

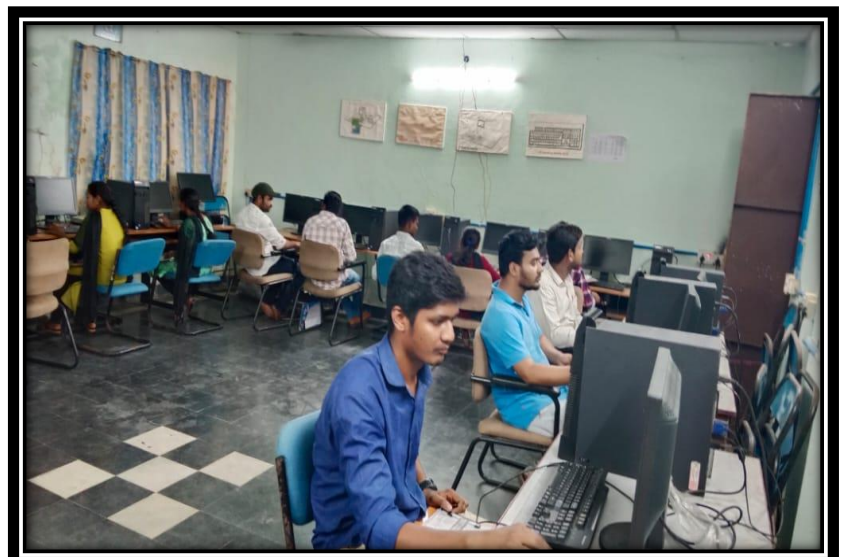
9. Create an scene to show the sunrise (using multiple layers and motion tweening)

10. Create an animation to show the ripple effect.

11. Create an animation (using Shape tweening and shape hints) for transforming one shape into another.

12. Create an animation for bouncing ball (you may use motion guide layer).

COMPUTER LAB



DEPARTMENTAL ACTIVITIES:

SNO	ACTIVITY	2016-17	2017-18	2018-19	2019-20	2020-21
1	EXTENSION LECTURE	1	1	1	1	2
2	QUIZ COMPITATIONS	1	1	1	0	1
3	EDUCATIONAL TRIPS	0	0	0	0	1
4	REMIDIAL CLASS	1	1	1	1	0
5	STUDENT SEMINAR	0	0	0	0	6
6	ASSIGNMENTS					
7	CERTIFICATE COURSE	0	0	0	0	1



CERTIFICATE COURSE ON BASIC COMPUTER SKILLS



WORLD COMPUTER LITERACY DAY



AWARENESS PROGRAM ON E-MAIL CREATION TO NON-COMPUTER STUDENTS



EDUCATIONAL TRIPS



IN HOUSE TRAINING PROGRAM FOR TEACHING AND NON-TEACHING STAFF



INAUGURAL PROGRAM FOR "ON THE JOB TRAINING PROGRAM"



ON THE JOB TRAINING PROGRAM FOR VACTIONAL GROUP +2 STUDENTS



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Long 80.344676°
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NATIONAL SCIENCE DAY



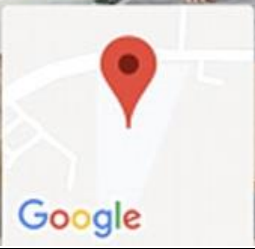
GPS Map Camera



Sudimalla, Telangana, India
H8JV+P5G, Sudimalla, Telangana 507123, India
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Long 80.344405°
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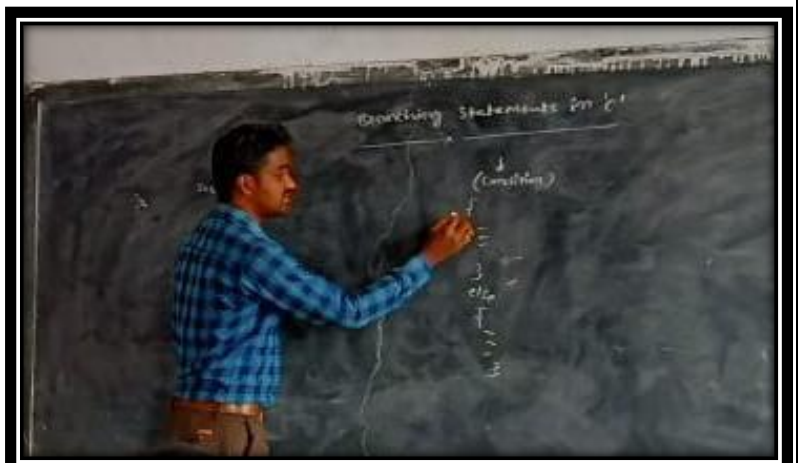
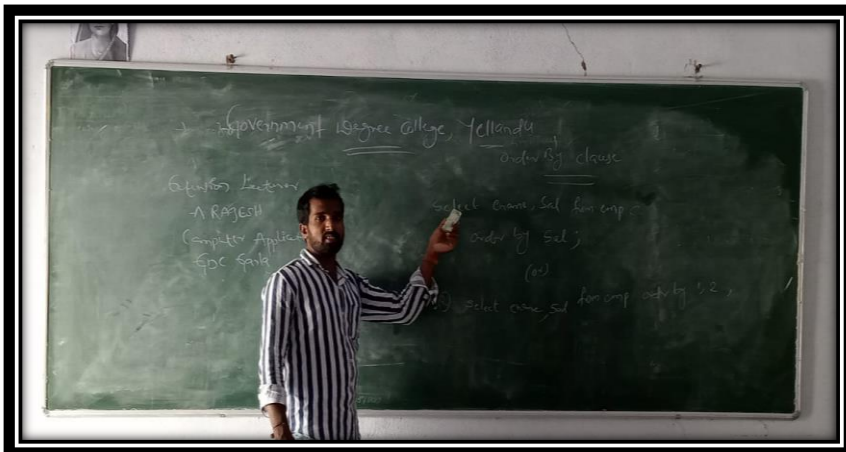
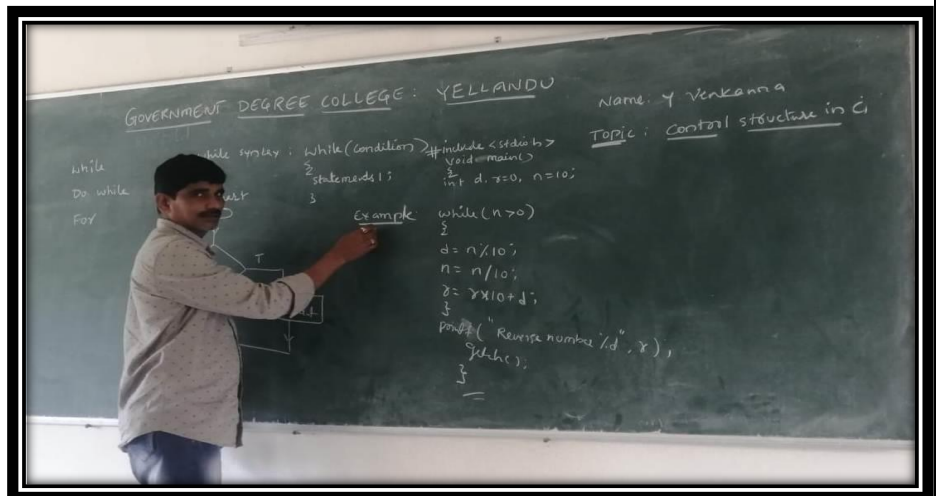
GPS Map Camera



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AMBEDKAR JAYANTHI

EXTENSION LECTURES





DEPARTMENT
OF
COMPUTER SCIENCE & APPLICATIONS

