KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

COIMBATORE – 641 029

CURRICULUM AND SCHEME OF EXAMINATIONS (CBCS)

(2018 - 2019 onwards)

DEPARTMENT OF COMPUTER APPLICATIONS (UG)

KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

Coimbatore – 641029

Vision:

Developing the total personality of every student in a holistic way by adhering to the principles of Swami Vivekananda and Mahatma Gandhi.

Mission:

- Imparting holistic and man-making education with emphasis on character, culture and value - moral and ethical.
- Designing the curriculum and offering courses that transform its students into value added skilled human resources.
- Constantly updating academic and management practices towards total quality management and promotion of quality in all spheres.
- Extending the best student support services by making them comprehensive and by evolving a curriculum relevant to student community and society at large.
- Taking steps to make education affordable and accessible by extending scholarships to the meritorious and economically disadvantaged students.
- Moulding the teachers in such a way that they become the role models in promoting Higher Education.

DEPARTMENT OF COMPUTER APPLICATIONS

Vision:

- Our vision is to offer up to date and flexible programs which will allow our graduates to be competitive in the job market.
- To achieve excellent standards of quality education by keeping pace with rapidly changing technologies.
- Integral Formation and Empowerment of students for social transformation through Computer Applications.

Mission:

- To provide outstanding education and training to our graduate students for their productive careers in industry, academia, and government.
- To impart quality and value based education to raise satisfaction level of all stakeholders.
- To empower students with academic excellence, knowledge and training.
- To enable critical thinking among students towards development in IT with reference to social transformation.
- To apply new developments in Information Management and provide all possible support to promote research & development.
- To serve as a platform whereby the student enrich their personalities to assume greater responsibilities.

PROGRAMME OUTCOME (PO)

PO1 To enhance their skills and new computing technologies through practical and theoretical knowledge of Computer.

PO2 To **e**xhibit understanding of broad business concepts and principles.

PO3 To expertise students as computing professionals to earn more and to contribute to the economic development of the region, state and nation.

PO4 To analyze the impact of computing on individuals, organizations, and society, including ethical, legal, security, and global policy issues.

PO5 To develop various real time applications using latest technologies and programming languages.

PO6 To pursue higher education to enhance their skill. and Capable of recognizing and resolving ethical issues.

PO7 To demonstrate the capabilities required to apply cross-functional business knowledge and technologies in solving real-world business problems

PO8 To Blend analytical, logical and managerial skills with the technical aspects to resolve real world issues.

PROGRAMME SPECIFIC OUTCOME (PSO)

PSO1 An ability to apply knowledge of computing and mathematics appropriate to the discipline.

PSO2 An ability to apply current techniques, skills, and tools necessary for computing practice and to integrate IT-based solutions into the user environment effectively.

PSO3 An ability to apply design and development principles in the construction of software systems of varying complexity.

PSO4 An ability to use knowledge in various domains to identify real world problems and hence to provide solution to new ideas and innovations.

PSO5 An ability to design, document and develop robust applications by considering human, financial and environmental factors using cutting edge technologies to address individual and organizational needs.

KONGUNADU ARTS AND SCIENCE COLLEGE [AUTONOMOUS] COIMBATORE - 641 029.

BACHELOR OF COMPUTER APPLICATIONS [BCA]

CURRICULUM & SCHEME OF EXAMINATION UNDER CBCS

[APPLICABLE TO STUDENTS ADMITTED FROM THE ACADEMIC YEAR 2018-2019] onwards

Semester	Part	Subject code	Title of the Paper	Instruction Hours / Cycle	Exam. Marks			Duration of Exam.(hours)	Credits
					CIA	ESE	Total		
I	I	18TML1A1	Lan - Tamil I/Hindi I/French I/ Malayalam I/ Sanskrit I	6	25	75	100	3	3
	II	18ENG101	Lan - English I	6	25	75	100	3	3
	III	18UCA101	C.P.1: – C Programming	5	25	75	100	3	4
		18UCA1CL	C.Pr .1: – C Programming Lab	5	40	60	100	3	2
		18UCA1A1	Allied 1:–Business Accounting	6	25	75	100	3	5
	IV	18EVS101	Enviromental Studies **	2	-	50	50	3	2
TOTAL HOURS				**30**	**-**	**-**	**-**	**-**	**19**
II	I	18TML2A2	Lan - Tamil II/Hindi II/ FrenchII/MalayalamII/ Sanskrit II	6	25	75	100	3	3
	II	18ENG202	Lan - English II	6	25	75	100	3	3
	III	18UCA202	C.P. 2: Object Oriented Programming with C++	4	25	75	100	3	4
		18UCA203	C.P. 3: – Digital Fundamentals and Computer Organization	3	25	75	100	3	4
		18UCA2CM	C.Pr .2:– Object Oriented Programming with C++ - Lab	3	40	60	100	3	2
		18UCA2A2	Allied 2:– Computer Oriented Numerical and Statistical methods	6	25	75	100	3	5
	IV	18VED201	Value Education - Moral & Ethics**	2	-	50	50	3	2
TOTAL HOURS				**30**	**-**	**-**	**-**	**-**	**23**
III	III	18UCA304	C.P.4: – Operating Systems	5	25	75	100	3	4
		18UCA305	C.P. 5: – Data Structures and Algorithms	5	25	75	100	3	4
		18UCA306	C.P 6: – Relational Database Management Systems	5	25	75	100	3	4
		18UCA3CN	C.Pr .3:– Relational Database Management Systems -Lab	5	40	60	100	3	2
		18UCA3A3	Allied 3:– Operations Research.	6	25	75	100	3	5

	IV	18UCA3S1	Skill Based Subject 1: Python Programming-I	2	25	75	100	3	3
		18TBT301/ 18TAT301/ 18UHR3N1	Basic Tamil*/ Adv.Tamil **/ Non major Elective –Human Rights	2	-	75	75	3	2
TOTAL HOURS				**30**	**-**	**-**	**-**	**-**	**26**
IV	III	18UCA407	C.P 7:– Software Engineering	5	25	75	100	3	4
		18UCA408	C.P 8: – Computer Networks	5	25	75	100	3	4
		18UCA409	C.P 9: – Advanced JAVA	5	25	75	100	3	5
		18UCA4CO	C.Pr .4: – **:–** Advanced JAVA – Lab	5	40	60	100	3	2
		18UCA4A4	Allied 4: -Organizational Behavior and Marketing	6	25	75	100	3	5
	IV	18UCA4SL	Skill Based Subject 2: Python Programming Lab-I	2	40	60	100	3	3
		18TBT402/ 18TAT402/ 18UWR4N2	Basic Tamil*/Adv.Tamil**/ Non major Elective –Women's Rights	2	-	75	75	3	2
TOTAL HOURS				**30**	**-**	**-**	**-**	**-**	**25**
V	III	18UCA510	C.P 10:– Visual Basic and .NET	6	25	75	100	3	5
		18UCA511	C.P 11: – Android Programming	6	25	75	100	3	5
		18UCA512	C.P 12: – Data Mining	5	25	75	100	3	5
		18UCA5E1	Elective Paper I	6	25	75	100	3	5
		18UCA5CP	C.Pr .5 – Visual Basic and .NET Lab	5	40	60	100	3	2
	IV	18UCA5S2	Skill Based Subject 3: Python Programming-II	2	25	75	100	3	3
TOTAL HOURS				**30**	**-**	**-**	**-**	**-**	**25**
VI	III	18UCA6E2	Elective Paper II	6	25	75	100	3	5
		18UCA613	C.P. 13: - Web Designing	6	25	75	100	3	4
		18UCA614	C.P.14:- Information Security	6	25	75	100	3	5
		18UCA6CQ	C.Pr. 6: - Web designing Lab	6	40	60	100	3	2
		18UCA6Z1	Project Work & Viva-Voce	4	20	80 *	100	3	4
	IV	18UCA6SM	Skill Based Subject 4: Python Programming Lab-II	2	40	60	100	-	3
TOTAL HOURS				**30**	**-**	**-**	**-**	**-**	**23**
Part V		18NCC/NSS/ YRC/PYE101	Extension activity (NSS,NCC,PE,YRC) *	-	50 (CIA only)	-	50	-	1

@Hindi - 18HIN101/202	$$NCC – 18NCC101
@French - 18FRN101/202	NSS – 18NSS101
@Malayalam - 18MLM101/202	Sports – 18PYE101
@Sanskrit - 18SAN101/202	YRC – 0YRC101
	PYE- 18P4E101

***No end –of- Semester Examinations – Only CIA.**

**** No CIA – Only end- of –Semester Examinations.**

 # Project Record 80 Marks; Viva-Voce 20 Marks. Evaluated both Internal and External Examiners jointly.

1. Major Elective Papers:

1) **Software Project Management**
2) **Case Tools and Concepts**
3) **Software Testing**
4) **Principles of Compiler Design**

Break up Marks for CIA of Theory

CIA Exam	-	15
Assignment	-	5
Attendance	-	5
Total		**25**

2.Components of Practical:

Break up Marks for CIA of Practical

CIA Practical Exam	-	25
Observation Notebook	-	10
Attendance	-	5
Total		**40**

Break up Marks for ESE of Practical

Experiment	-	50
Record	-	10
Total		**60**

3.Component for Project:

CIA / ESE	Particulars	Project Out of 100 Marks (UG)
CIA	Project Review	15
	Regularity	5
	Total Internal Marks	**20**
*ESE	Project Report Present	60
	Viva Voce	20
	Total External Marks	**80**
Total Marks(CIA+ESE)		**100**

*** Project report and Viva voce will be evaluated jointly by both the Project Supervisor (faculty of the Department) and an External Examiner.**

Non-Major Elective papers:

1. **Human Rights**
2. **Women's Rights**
3. **Consumer Affairs**

Part-wise Total Marks /Credits:

Part I	Lan – Tamil/Hindi/French/Malayalam/Sanskrit	200	200	6
Part II	Lan – English	200	200	6
Part III	Core /Lab/Project Allied Elective	2000 400 300	2700	72 20 15
Part IV	Basic Tamil/Adv.Tamil/Non-Elective Major	150	650	4
	Skill Based subject	400		12
	Environmental Studies	50		2
	Value Education	50		2
Part V	Extension Activities	50	50	1
Grand Total Marks / Credits		**3800**	**3800**	**140**

Note:

CBCS – Choice Based Credit System

CIA – Continuous Internal Assessment

ESE – End –of- Semester Examination

25% CIA is applicable to all subjects except JOC,COP and Diploma Courses, which are considered as extra credit courses.

- **Students can select any one paper from each Elective Group.**

18UCA101

PROGRAMME CODE : 10		BACHELOR OF COMPUTER APPLICATIONS		
COURSE CODE: 18UCA101		C.P.1: - C PROGRAMMING		
BATCH	SEMESTER	HOURS / WEEK	TOTAL HOURS	CREDITS
2018-2019	I	5	75	4

Course Objectives

1. To train the student to the basic concepts of the C-programming language .
2. To provide exposure to problem-solving through programming and to develop programming skills.
3. To impart adequate knowledge of programming languages and problem solving techniques.

Course Outcomes (CO)

K1	CO1	Developing programs using the control statements, Arrays and Strings.
K2	CO2	Understanding about the code reusability with the help of user defined functions.
K3	CO3	Developing programs using pointer, enumerated data types, function, Union and nested structures.
K4	CO4	Learning the file handling mechanism that is essential for storing and accessing data.

Syllabus

UNIT I **(Hours:14)**

Overview of C: History of C – Importance of C- Sample programs – Basic Structure of C programs – Programming style. Constants, Variables and Data types: Character set – C Tokens – Keywords and Identifiers – Constants – Variables – Data types – Operators and Expressions: Introduction – Arithmetic operator – Relational operators – Logical operators-Assignment-Increment and Decrement-Conditional– Bitwise operators-Special Operators – Type conversions

in Expressions – Operator precedence and Associativity. Managing Input and Output operations: Reading and Writing Character-Formatted Input – Formatted Output.

UNIT II **(Hours:15)**

Decision making and Branching: Decision making with if statement – Simple if statement – The if ….else statement-Nested If-Else-If Ladder – The Switch statement-The Ternary Operator. Looping: The while statement – The do statement – The for statement – **Jumps in loops*.**

UNIT III **(Hours:16)**

Arrays: Introduction – one dimensional Arrays – Declaration of one dimensional Arrays – Initialization of one dimensional Arrays – Two dimensional Arrays – Initializing Two dimensional Arrays – Multidimensional Arrays. Character Arrays and Strings: String handling functions. User defined functions: Definition of Functions – Function Declaration – Category of Functions – No Arguments and No Return values – Arguments but No Return values – Arguments with Return values – No Arguments but Returns a value - Functions that Return Multiple Values- Recursion – The Scope, Visibility and Lifetime of Variables.

UNIT IV **(Hours:16)**

Pointers : Understanding pointers –Accessing the Address of the Variables- Declaring pointer variables – Pointer and Arrays- Pointers and Character strings – Array of pointers –Pointers as Function Arguments- Functions returning pointers. The Preprocessor: Macro Substitution.

UNIT V **(Hours:14)**

Structures and Unions: Introduction – Defining a Structure – Declaring Structure variables – Structure Initialization –Array of Structures-Arrays with in Structures-Structures with in Structures– Unions. File Management in C: Defining and Opening a File – Closing a File – Input/output Operations on Files – Command Line Arguments.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also**

Teaching Methods

Lecture, Discussion, Question and Answer, Review case studies, Exercises, Assignments.

18UCA101

Text Books

1. Balagurusamy ,(2008), **"Programming in ANSI C "** , Fourth Edition -Tata McGraw Hill

Reference Books

1. Ashok N Kamthane,(2002),**"Programming with Ansi and Turbo C",** Pearson Education Publication,.
2. Henry Mullish & Herbert L Cooper, (1996), **"The Sprit of C"**,Jaico Publication House.
3. P.J.Deitel and H.M.Deitel,(2008**),"C How to Program"** ,5th Edition, Tata McGraw Hill.
4. Yeswanth Kanethkar,(2007),**"Let Us C"**, Eigth Edition - BTB Publications.

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	M	S	S
CO2	S	S	H	H	S
CO3	H	H	S	M	H
CO4	S	H	M	S	H

S – Strong **H** – High **M** – Medium **L** – Low

UCA9

18UCA1CL

PROGRAMME CODE : 10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE:18UCA1CL		**C.Pr.1:- C PROGRAMMING LAB**		
BATCH	**SEMESTER**	**HOURS / WEEK**	**TOTAL HOURS**	**CREDITS**
2018-2019	**I**	**5**	**75**	**2**

Course Objectives

1. To introduce C Programming concepts to develop the programming knowledge.
2. To enhance their analyzing and problem solving skills and use the same for writing programs in C.
3. To guide the candidates to explore the fundamental building blocks in the programming language.

Course Outcomes (CO)

K2	CO1	Learning process helps in deep understanding the concepts of C language.
K3	CO2	Developing programs using control statements, Arrays and Strings.
K3	CO3	Enabling effective usage of arrays, structures, functions and pointers.
K4	CO4	Implementing the files and command line arguments.

Syllabus

1. Write a program to find the median for a given set of numbers.
2. Write a program to find the Standard Deviation for a given set of numbers.
3. Write a program to find the number of palindrome strings in a given sentence.
4. Write a program to generate N Prime and Armstrong numbers.
5. Write a program to perform Matrix addition & Multiplication using Arrays.
6. Write a program to calculate NCR using the formula NCR = N! / (R! * (N-R)!) using functions.
7. Write a program to print Fibonacci Series using Recursive Function.

8. Write a program to print the student's mark sheet assuming roll number, name, and marks in five subjects in a structure. Create an array of structures and print the mark sheet in the university pattern.
9. Write a program to perform string manipulation operations.
10. Write a program to perform all manipulations like insertion, deletion and modification in files for student mark list.
11. Write a program, which takes a file as command line argument and copy it to another file. At the end of the second file write

    i) Number of characters,
    ii) Number of words and
    iii) Numbers of lines are available in the first file.

Teaching Methods:

Projectors,Discussions

Guidelines to the distribution of marks for practical Examinations:

Two questions will be given for each student (3 Hours / 60 Marks)

1. Record Work - 10 Marks
2. Algorithm, Program, Typing and Execution : 50 Marks.

Particulars	Program I (Marks)	Program II (Marks)
Algorithm	10	10
Program Writing	10	10
Typing and Execution	5	5

Internal Mark Splitup for 40 Marks: Observation- 10 Marks, Attendance- 5 Marks, Two Model Practical-25 Marks.

UCA11

18UCA1CL

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	S	H	M
CO2	S	S	M	H	H
CO3	S	H	H	S	M
CO4	H	S	M	H	M

S – Strong **H** – High **M** – Medium **L** – Low

UCA12

18UCA202

PROGRAMME CODE: 10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE: 18UCA202		**C.P. 2:-OBJECT ORIENTED PROGRAMMING WITH C++**		
BATCH	**SEMESTER**	**HOURS / WEEK**	**TOTAL HOURS**	**CREDITS**
2018-2019	**II**	**4**	**60**	**4**

Course Objectives

1. To perform object- oriented programming to develop solutions to problems demonstrating usage of control structures, modularity, I/O and other standard language constructs.
2. To develop an in-depth understaning of functional,logic, and object-oriented programming paradigms.
3. To program using more advanced OOP's features such as composition of objects, operator overloads, dynamic memory allocation, inheritance and polymorphism, file I/O, exception handling, etc.

Course Outcomes (CO)

K2	CO1	Understanding the features of C++ Programming.
K2	CO2	Understanding the advanced features of C++ specifically ,Operator Overloading, Templates, Streams.
K3	CO3	Applying the major object-oriented concepts to implement programs, Inheritance and Polymorphism
K4	CO4	Implementing different Operations on Functions, Classes & Object, and Constructors.

Syllabus

UNIT I **(Hours:13)**

Procedure Oriented Programming – Basic Concepts of Object Oriented Programming – Benefits of Object Oriented Programming – **Applications of OOP** * –Beginning with C++.

UNIT II **(Hours:13)**

Expression & Control Structure: Data Types – Reference Variables – Operators in C++ – Scope Resolution Operator – Type Cast Operator – Branching & Looping. Functions: Function Prototypes – Call by Reference – Return by Reference – Inline Functions – **Default & Const Argument *.**

18UCA202

UNIT III **(Hours:12)**

Function Overloading – Friend Functions – Classes & Objects – Constructors and Destructors: Constructors – Parameterized Constructors – Multiple Constructors in a Class – Constructors with Default arguments – Copy Constructors – Destructors.

UNIT IV **(Hours:11)**

Operator Overloading – Inheritance: Defining derived class – Types of inheritance – Virtual Base class. Pointers: This pointer – Pointers to Objects – Virtual functions & Polymorphism – Templates and Exception handling.

UNIT V **(Hours:11)**

Managing Console Input/Output Operations: C++ Streams – C++ Stream Classes – Formatted & Unformatted I/O Operations – Managing Output with Manipulators – Working Files: Opening and closing a file – File pointers and their manipulations – Random Access file – Command Line Arguments.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods:

Powerpoint Presentation, Discussion , Assignment

Text Book:

1. E.Balagurusamy,(2008), **"Object Oriented Programming with C++"** , Fourth Edition - McGraw Hill Publications.

Reference Books:

1. Ashok N Kamthane,(2003) -"**Object oriented Programming with ANSI and Turbo C++**", First Edition -Pearson Education Publication.
2. Yashavanth Kanetkar, (2008), **"Let us C++"** , Fourth Edition -BPB Publications.

UCA14

18UCA202

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	H	S	S
CO2	S	H	S	H	M
CO3	S	H	M	H	S
CO4	S	M	S	M	H

S – Strong **H** – High **M** – Medium **L** – Low

UCA15

18UCA203

PROGRAMME CODE : 10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE: 18UCA203		**C.P. 3:-DIGITAL FUNDAMENTALS AND COMPUTER ORGANIZATION**		
Batch	**Semester**	**Hours / Week**	**Total Hours**	**Credits**
2018-2019	**II**	**3**	**45**	**4**

Course Objectives

1. To learn the concept of Digital Circuits, Circuit Constructions and Simplifications of Boolean function
2. To know the concept of Multiplexers, Flip-Flops and Registers and to familiarize the Memory Hierarchy and Peripheral Devices .
3. To understand the concepts of different types of languages and Instruction Formats.

Course Outcomes (CO)

K2	CO1	Understanding the Number systems and conversions in Digital Computer System.
K2	CO2	Understanding the concepts of Boolean expressions, Logic Gates and to apply the methods to simplifying the Boolean expression.
K3	CO3	Applying the knowledge to perform arithmetical operations using various logical circuits.
K4	CO4	Designing and implementing the various Synchronous and Asynchronous data transfer and peripheral devices.

Syllabus

UNIT I **(Hours:8)**

Programming the Basic Computer: Introduction – Machine Language – Assembly Language. Central Processing Unit: Introduction – General Register Organization – Instruction Formats – Addressing Modes.

18UCA203

UNIT II **(Hours:10)**

Binary Systems: Digital Computer and Digital Systems – Binary Numbers – Number Base Conversion – Octal and Hexadecimal Numbers – Complements – 9's, 10's, 1's And 2's Complements. Binary Code's: BCD, GRAY, Excess of 3 Codes, Error Detecting & Correcting Codes.

UNIT III **(Hours:10)**

Boolean algebra And Logic Gates: Basic Definitions – Boolean Functions – Canonical and Standard Forms – Sum of Product – Product of Sum – Minterms and Maxterms – Digital Logic Gates. Simplification of Boolean Functions: The Map Method – Two & Three Variable Maps – Four Variable Map – Don't Care Conditions.

UNIT IV **(Hours:9)**

Combinational Logic: Introduction –Adders -Subtractors –Multiplexers–De-Multiplexers. Sequential Logic: Introduction – RS, D, JK Flip Flops.

UNIT V **(Hours:8)**

Input – Output Organization: **Peripheral Devices** * – Asynchronous Data Transfer – Direct Memory Access – IOP. Memory Organization: Main Memory – Cache Memory

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods:

Power Point Presentation,Discussion,Assignment

Text Books:

1. Morris Mano, (2007) - "**Digital Logic and Computer Design"** – Zeroth Edition-Prentice Hall of India, New Delhi- (Units II, II, IV).
2. Morris Mano,(1999)- "**Computer System Architecture"** - Third Edition - Prentice Hall of India, New Delhi - (Units I, V).

Reference Books:

1. Thomas C. Bartee-(1998),"**Computer Architecture and Logical Design**" McGraw Hill International Edition.
2. John P Hayes,(1998), "**Computer Architecture and Organization**"- Third Edition -McGraw Hill International,.

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	H	S	M	H
CO2	S	H	S	S	S
CO3	S	S	H	M	M
CO4	S	M	H	H	M

S – Strong **H** – High **M** – Medium **L** – Low

UCA18

18UCA2CM

PROGRAMME CODE: 10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE: 18UCA2CM		**C.Pr. 2:-OBJECT ORIENTED PROGRAMMING WITH C++ LAB**		
Batch	**Semester**	**Hours / Week**	**Total Hours**	**Credits**
2018-2019	**II**	**3**	**45**	**2**

Course Objectives

1. To develop programming skills using object - oriented concepts .
2. To develop the ability to write a program to solve specific problems.
3. To practice the fundamental methodology to implement file and I/O stream concepts.

Course Outcomes (CO)

K2	CO1	Designing programs using appropriate predefined functions and classes in C++.
K3	CO2	Developing applications using Friend functions, Inheritance and polymorphism.
K3	CO3	Developing a C++ application using the concepts of Templates.
K4	CO4	Implementing stream I/O, Files and usage of the available classes to handle stream objects.

Syllabus

1. [DISTANCE CONVERSION PROBLEM]

Create two classes DM & DB which store the value of distances. DM stores distances in meters & centimeters and DB stores distances in feet & inches. Write a program that can read values for the class objects and add one object DM with another object DB.

Use friend function to carry out the addition operation. The object that stores the results may be a DM object or DB object depending on the units in which the results are required.

The display should be in the format of feet and inches or meters and centimeters depending on the object on display

2. [OVERLOADING STRING]

Define a class string. Use overloaded = = operator to compare two strings ignore case sensitivity. Use overloaded + operator to concatenate the strings.

3. [OVERLOADI NG MATRIX]

Create a class MAT of size M x N. Define all possible matrix operations for MAT type objects.

4. [COMPLEX NUMBERS PROBLEM]

Apply OOP's concept to create, manipulate the complex number (+, -, *, /)

5. [AREA COMPUTATION USING DERIVED CLASS]

Create a base class called shape; use this class to store two double type values that could be used to compute the area of figures. Derive two specific classes called Triangle and Rectangle from the base Shape. Add to the base class, a member function get_data() to initialize base class data members and another member function display_area() as a virtual function and redefine this function in the derived classes to suit their requirements. Using these classes design a program that will accept dimensions of a triangle or rectangle interactively and display the area. Remember the two values given as input will be treated as lengths of two sides in the case of rectangle and as base and height in the case of triangles and used as follows:

(i) Area of rectangle = X * Y (ii) Area of a triangle = ½ * X * Y

Extend the program to display the area of circles. This requires addition of new derived class Circle that computed the area of circle. Remember for a circle we need only the value its radius but the get_data() function in the base class requires two values to be passed. (Hint: The second argument of get_data() function as a default one with a zero value.

(iii) Area of a circle=3.14*(r*r)

6. [WORDS COMPUTING PROBLEM]

Write a program which reads a text from the keyboard and display the following information on the screen in two columns

1. Number of lines
2. Number of words
3. Number of characters

Strings should be left justified and number should be right justified in suitable field width.

7. [SWAP THE NUMBERS USING FUNCTION TEMPLATE]

Write a program to swap the numbers using the concept of function template.

8. [WHITE SPACE SUPRESSION IN A FILE]

Write a program that reads a text files and create another text file that is identical expect that every sequence of consecutive blank space is replaced by a single space

9. [COMMAND LINE ARGUMENT PASSING]

Write a program that emulates the DOS copy command i.e it should copy the contents of character file (such as any CPP file) to another file. Invoke the program with 2 command line arguments – the source file and the destination file – like this

C: > COPY SFILE.CPP DFILE.CPP

In the program check that the user has typed the correct number of command line arguments and that the file specified can be opened. Improve on the DOS TYPE command by having the program signal an

error if the destination file already exists. This will prevent inadvertently writing over a valuable file. [USE THE NON-REPLACE flag]

10. [FILE SIZE OF A FILE]

Write a program that returns the size in bytes of a program encountered on the command line

Guidelines to the distribution of marks for practical Examinations:

Two questions will be given for each student (3 Hours / 60 Marks)

1. Record Work - 10 Marks
2. Algorithm, Program, Typing and Execution : 50 Marks.

Particulars	Program I (Marks)	Program II (Marks)
Algorithm	10	10
Program Writing	10	10
Typing and Execution	5	5

Internal Mark Splitup for 40 Marks: Observation- 10 Marks, Attendance- 5 Marks, Two Model Practical-25 Marks

UCA21

18UCA2CM

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	H	S	H	S
CO2	S	H	S	M	M
CO3	H	S	H	S	S
CO4	H	M	H	H	H

S – Strong **H** – High **M** – Medium **L** – Low

18UCA304

PROGRAMME CODE:10		BACHELOR OF COMPUTER APPLICATIONS		
COURSE CODE: 18UCA304		C.P.4:-OPERATING SYSTEMS		
Batch	**Semester**	**Hours / Week**	**Total Hours**	**Credits**
2018-2019	**III**	**5**	**75**	**4**

Course Objectives

1. To understand the structures of modern computers.
2. To understand the purpose and usage of functions in operating systems.
3. To cover the details of concurrent processes, multi-threads, CPU scheduling, memory management file system, storage subsystem, and input/output management.

Course Outcomes (CO)

K1	CO1	Understanding of design issues,mastering in functions, structures and history of operating systems.
K2	CO2	Learning various Process Management Concepts including Scheduling, Synchronization, Multithreading and Deadlocks.
K3	CO3	Implementing the processes,resource control ,physical and virtual memory,scheduling, I/O and files.
K4	CO4	Understanding about Resource Sharing among Users. Familiar with Protection and Security Mechanisms. Types of Operating Systems including Unix.

Syllabus

UNIT I **(Hours: 14)**

History of the operating Systems - Zeroth, first, Second, Third, Fourth Generation - Computer Architecture: 4GL, 3GL, 2GL, 1GL, OGL. Program, Interrupts - Operating System functions.

UNIT II **(Hours:15)**

Memory Management - Introduction - Single Contiguous Memory Management - Fixed partition Memory Management Variable, partition - Non-contiguous Allocation - General concepts - Paging - Segmentation - Combined system.

18UCA304

UNIT III **(Hours:16)**

Process Management - Evolution – Introduction – Evolution Of Multi Programming – Context Switching-Process States-Process State Transition-Process Control Block-Process Hierarchy-Create-Kill Process-Dispatch Process-Change the Priority of a Process – Block A Process – Dispatch a Process-Time Up a Process-Wake Up A Process- Suspend/Resume Operations- Multi Tasking-Deadlocks-Introduction- Deadlock prerequisites.

UNIT IV **(Hours: 16)**

Information Management And File Management - Introduction - The File System Block& Block Numbering Scheme –File Support Level-Writing A Record-File Directory Entry-Open/Close Operations-Directory Structure -Device Driver-Basics-Path Management-I/O Procedure-I/O Scheduler – Device Handler.

UNIT V **(Hours: 14)**

Case Studies - Unix - **History Of Unix *** – Overview Of Unix-Unix File System: Different types of files , Mounting/Unmounting file systems, Open, close, Read, write system calls, Create a file, Delete a file, Change directory- - **Process States And State Transition*** -Memory Management.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods

Discussion, Question and Answer, Review Case Studies, Assignments

Text Books

1. Deitel, Choffnes,(2007), **"Operating Systems"**, Third Edition-Pearson Education,.
2. Achyut S. Godbole,(1996), "**Operating Systems"**, Second Edition -Tata McGraw Hill Publishing Company Limited .

Reference Books

1. William Stallings,(2001), "Operating Systems", Second Edition- Prentice Hall of India Ltd.
2. H.M Deitel,(2003), "Operating Systems", 2nd Edition- Pearson Education, 2003.

UCA24

18UCA304

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	H	S	S	H
CO2	S	S	H	M	S
CO3	H	H	H	M	M
CO4	H	M	S	H	S

S – Strong **H** – High **M** – Medium **L** – Low

18UCA305

PROGRAMME CODE : 10		BACHELOR OF COMPUTER APPLICATIONS		
COURSE CODE: 18UCA305		C. P. 5: – DATA STRUCTURES AND ALGORITHMS		
Batch	**Semester**	**Hours / Week**	**Total Hours**	**Credits**
2018-2019	**III**	**5**	**75**	**4**

Course Objectives

1. To represent the way of defining Data.
2. To explain the fundamental techniques for designing and analyzing algorithms.
3. To study various algorithms of Sorting ,Searching methods in Data structures.

Course Outcomes (CO)

K2	CO1	Understanding data structures and the concepts of algorithms for dynamic programming.
K3	CO2	Applying the data structures algorithms for various applications.
K3	CO3	Demonstrating familiar data structure algorithms.
K4	CO4	Applying the computational complexity of various algorithms.

Syllabus

UNIT I **(Hours:14)**

Introduction - Overview - **How To Create Programs Analyze Them *.** Arrays - Structures - Ordered Lists- Representation of Arrays - Simple Applications.

UNIT II **(Hours:15)**

Stacks and Queues –Fundamentals-Structure s- Operations- Multiple Stacks and Queues- Applications and Evaluation of expressions.

UNIT III **(Hours:16)**

Linked Lists - Single Linked Lists- Linked Stacks And Queues - The Storage Pool - Applications - Polynomial Addition, Sparse Matrices. Double Linked Lists- Dynamic Storage Management -Garbage Collection And Compaction.

18UCA305

UNIT IV **(Hours:16)**

Searching And Sorting: Binary, Sequential, And Fibonacci - Internal Sorting Insertion, Quick, Merge, Heap, Radix Sorts - External Sorting - Sorting With Disks - K-Way Merging- Sorting With Tapes - Balanced Merge - Polyphase Merge. Symbol Tables - Static Tree - Dynamic Tree - Hash Tables.

UNIT V **(Hours:14)**

Files - queries and sequential organizations * - index techniques. File organizations sequential, random, linked organizations - inverted files - cellular partitions.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods

Seminar, Discussion,Assignment

Text Book

1. Ellis Horowitz & Sartaj Sahani , (1999)- **"Fundamentals of data structure"**, First Edition Galgothia book source,.

Reference Books

1. Ashok N Kamthane,(2004),**"Programming and Data Structures",** First Edition,PearsonEducation.

2. AlfredV.Aho,JohnE.Hopcroft,Jeffrey D.Ullman,(2006) – **"DataStrctures and algorithms",** Pearson Education,.

MAPPING

PSO / CO	PSO1	PSO 2	PS 3	PSO 4	PSO 5
CO1	S	S	H	S	S
CO2	S	H	S	H	M
CO3	S	H	M	H	S
CO4	S	M	S	M	H
CO5	S	S	S	S	S

S – Strong **H** – High **M** – Medium **L** – Low

18UCA306

PROGRAMME CODE : 10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE: 18UCA306		**C.P.6:- RELATIONAL DATABASE MANAGEMENT SYSTEMS**		
Batch	**Semester**	**Hours / Week**	**Total Hours**	**Credits**
2018-2019	**V**	**5**	**75**	**4**

Course Objectives

1. To develop the knowledge in various Database concepts, queries,normalization and reports..
2. To study the physical and logical database design and modeling.
3. To learn procedural interfaces using SQL queires.

Course Outcomes (CO)

K1	CO1	Understanding the concepts of Database.
K2	CO2	Understanding the concept of data Integrity constraints.
K3	CO3	Applying various DDL and DML statements, joins queries, PL / SQL statements.
K4	CO4	Applying various types of database management systems for developing the program.

Syllabus

UNIT I (**Hours :14)**

Introduction: Purpose of Database Systems-DBMS and RDBMS-Entity Relationship Diagram, Weak and Strong Entity sets – Codd's Rules. Normalization-Oracle Terminology – Data types - Basics of SQL :-DML-select command ,insert ,update, delete set operations, usage of Where Clause, **DDL *** ,DCL-Operators Aggregate functions.

UNIT II (**Hours :15)**

Data Constraints:-NULL value Concepts-Default value Concepts-Primary Key concepts-Unique Key Concepts-Foreign Key Concepts-Check Key Integrity Constraints-Renaming Columns with Expression List-Range Searching-Pattern Searching Manipulating Strings and Dates.

UNIT III (**Hours :16)**

Sophisticated queries-Built in group functions- Joined Relations-Nested Sub queries – Views – Sequences and Synonyms-Table Indexes- Table Partition and Joining of two tables.

18UCA306

UNIT IV (**Hours: 15)**

Database Triggers:–Use of Database Triggers-How to apply Database Triggers-Types of Triggers-Combinations-Keywords and Parameters-Dropping Triggers-Basics of PL/SQL –Usage of Stored Functions and Procedures- -How do procedures reside-Parameters. Packages-Retrieving data with Cursors-Formatting table. Exception handling.

UNIT V (**Hours: 15)**

New Applications: Decision Support Systems - Data Analysis - Data Mining - Data Warehousing - Spatial and Geographic Databases - Multimedia Databases - Mobility and Personal Databases - Information - Retrieval Systems - Distributed Information Systems - **The World Wide Web ***. Working with Reports-Default tabular report- PL/SQL with reports.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods

Powerpoint presentation , Assigments, Disussions.

Text Books:

1.Abraham Silberschatz, Henry F. Korth, S. Sudharshan,(2002),"**Database System Concepts",** Fourth Edition -Tata McGraw Hill International Editions.

2. Ivan Bayross ,(2000), "**Commercial Application Development using Oracle developer 2000**", BPB publications.

Reference Books

1. David Loctman, "**Developing Personal Oracle For Windows 95**" .
2. Elmasri Navathe,(2001), **"Fundamentals of Database Systems**", First Edition-Pearson Education publication.
3. Sharad Maheshwari & Ruchin Jain,(2006),"**Database Management Systems" Complete Practical Approach**", Second Edition
4. Nilesh Shah,(2007), "**Database Systems using Oracle**" A Simplified Guide to SQL & PL/SQL, Second Edition ,Prentice Hall of India Private Ltd, New Delhi,
5. Ivan Bayross,(1995),**"Oracle 7 The Complete Reference**",BPB Publications.

UCA29

18UCA306

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	H	S	S
CO2	S	H	S	H	M
CO3	S	H	M	H	S
CO4	S	M	S	M	H

S – Strong **H** – High **M** – Medium **L** – Low

UCA30

18UCA3CN

PROGRAMME CODE : 10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE: 18UCA3CN		**C.Pr.3:-RELATIONAL DATABASE MANAGEMENT SYSTEMS - LAB**		
Batch	**Semester**	**Hours / Week**	**Total Hours**	**Credits**
2018-2019	**V**	**5**	**75**	**2**

Course Objectives

1. To understand the use of Structured Query Language (SQL) and its syntax.
2. To understand and apply the principles of data modeling using Entity Relationship and develop a good database design.
3. To study the concepts and techniques relating query processing using SQL engines.

Course Outcomes (CO)

K2	CO1	Designing the basic concepts of Database.
K3	CO2	Implementing data Integrity constraints in Database.
K4	CO3	Validating the various fundamental tasks to perform data Modeling.
K3	CO4	Implementing functions, packages, stored procedures and user defined exception.

Syllabus

1. Creating Tables and writing simple queries using
    a) Comparison Operators
    b) Logical Operators
    c) Set Operators
    d) Sorting and Grouping
2. Creation of Reports using Column format
3. Writing Queries using built infunctions.
4. Updating and altering tables using SQL.
5. Creation of Students Information table and write PL/SQL Block find the Total, Average marks and Results.
6. Design a PL/SQL block to prepare the Electricity Bill.
7. Programming with Cursors: Code a PL/SQL Block to partition the students Information Table into two, one with the Passed and other with Failed .
8. Implement the concepts of Joined relations to Databse.

9. Create a Database Trigger to check the data validity of Record.
10. Recursive Functions Write a Recursive function to find
    a) Factorial of N
    b) Fibonacci Series with N terms.
11. Use SQL queries to manage Views, Sequences and Synonyms.
12. Create a Database Trigger to implement the Master - Detail Relationship.
13. Implement the concept of Stored Procedure with Parameters using SQL queries.
14. Implement the concept of Packages using Procedure and Function.
15. Design a PL/SQL program to handle User defined exception.

Teaching Methods

Powerpoint presentation , Assigments, Disussions.

Guidelines to the distribution of marks for practical Examinations:

Two questions will be given for each student (3 Hours / 60 Marks)

1. Record Work - 10 Marks
2. Algorithm, Program , Typing and Execution : 50 Marks.

Particulars	Program I (Marks)	Program II (Marks)
Algorithm	10	10
Program Writing	10	10
Typing and Execution	5	5

Internal Mark Splitup for 40 Marks: Observation- 10 Marks, Attendance- 5 Marks, Two Model Practical-25 Marks.

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	H	S	S
CO2	S	H	S	H	M
CO3	S	H	M	H	S
CO4	S	M	S	M	H

S – Strong **H** – High **M** – Medium **L** – Low

18UCA407

PROGRAMME CODE : 10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE: 18UCA407		**C.P.7: - SOFTWARE ENGINEERING**		
Batch	**Semester**	**Hours / Week**	**Total Hours**	**Credits**
2018-2019	**IV**	**5**	**75**	**4**

Course Objectives

1. To understand the basic theory of Software Engineering.
2. To describe software engineering layered technology and Process frame work.
3. To gain knowledge about quality control and how to ensure good quality software.

Course Outcomes (CO)

K1	CO1	Learning the fundamentals of software engineering concepts.
K2	CO2	Understanding common lifecycle processes such as waterfall model, spiral model, prototyping model,evolutionary models etc.,
K3	CO3	Applying the principles and techniques of software engineering in the architectural design, detail design, and implementation of software applications.
K4	CO4	Developing the software using different testing concepts.

Syllabus

UNIT I **(Hours:14)**

The evolving role of software – Software – ***Software Crises and Myths**-Software Engineering: Layered Technology –Process models – Water fall model, Incremental model, evolutionary process models - Component-based development- An agile view of process. **Software project planning:** Project planning objectives –Software scope-Resources –Software project estimation –Decomposition Techniques –Empirical estimation models.

UNIT II **(Hours:15)**

Building the Analysis model: Requirement Analysis—analysis modeling approaches. Data modeling concepts – Scenario-based modeling - Flow-oriented modeling- class-based modeling—creating a behavioral modeling. Software prototyping—Specification – *The Data Dictionary.

UNIT III **(Hours:16)**

Design Engineering: The design process and design quality — Design concepts — The design model- Pattern-based software design.

Architectural design: Software Architecture –Data design— Architectural style and patterns — Architectural design.

UNIT IV **(Hours:16)**

Assessing alternative architectural designs- Mapping requirements into software architecture – Transform mapping –Transaction mapping. Performing User interface design: The golden Rules— User interface analysis and design —Interface analysis – interface design steps- Design evaluation.

UNIT V **(Hours:14)**

Testing strategies: A strategic approach to software testing-strategic issues –Test strategies for conventional software-Validation testing—*System testing - The Art of Debugging.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods

Power Point Presentation,Seminar,Discussion,Assignment

Text books

1. Roger S Pressman,(2006),**"Software Engineering a Practioner's Approach"** , Sixth Edition - McGraw-Hill Higher Education.
2. Roger S Pressman,(2001), **"Software Engineering a Practioner's Approach"**, Fifth Edition - McGraw-Hill Higher Education.

Reference Books

1. Richard Fairly,(1997),**"Software Engineering concepts "**,Tata McGraw Hill,.
2. Sommerville,(2000),**"Software Engineering "** , Sixth Edition -Addison Wesley Publication.

UCA34

18UCA407

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	H	S	M	H
CO2	S	M	H	S	M
CO3	S	H	M	H	S
CO4	S	S	H	M	H

S – Strong **H** – High **M** – Medium **L** – Low

18UCA408

PROGRAMME CODE: 10		BACHELOR OF COMPUTER APPLICATIONS		
COURSE CODE: 18UCA408		C.P.8 – COMPUTER NETWORKS		
BATCH 2018-2019	SEMESTER IV	HOURS / WEEK 5	TOTAL HOURS 90	CREDITS 4

Course Objectives

1. To deal with basic ideas of networking domain.
2. To present the principles of Cryptography in Computer Networks.
3. To know the classical, advanced encryption standards and techniques, message authentication codes, digital signatures, email.

Course Outcomes (CO)

K1	CO1	Understanding cryptography and network security concepts and application.
K2	CO2	Applying security principle in system design.
K4	CO3	Detecting network security threats.
K1	CO4	Understanding the various cryptographic algorithms.

Syllabus

UNIT I **(Hours:13)**

Introduction: Uses of computer networks: Business Applications-Home Applications-Mobile Users-Social Issues. Network Hardware: LAN-MAN-WAN-Wireless Networks-Internetworks – Network Software: Protocol Hierarchies-Design Issues for the Layers-Connection Oriented and Connectionless Services-Service Primitives-The Relationship of Services to Protocol – Reference Models.

UNIT II **(Hours:15)**

The Physical layer: Guided transmission media –The Public Switched telephone network: Structure of the telephone system – The local loop : modems- Switching.

18UCA408

UNIT III **(Hours:16)**

The Data link layer: Data link layer design Issues – Error Detection and Correction. The Medium access control sub layer: The channel allocation problem – Multiple access protocols: Carrier sense multiple access protocols, Bluetooth: Blue tooth Architecture, **Bluetooth Applications *** .Data link layer switching: repeaters, hubs, bridges, switches, routers and gateways.

UNIT IV **(Hours:16)**

The Network layer: Network layer design issues – Routing algorithms: The optimality principle, shortest path routing- Congestion Control Algorithm: Congestion Control in Virtual Circuit Subnet, Datagram Subnet.

The Transport layer: The Transport service: Services provided to the upper layers– Elements of Transport protocols.

UNIT V **(Hours:15)**

The Application layer: DNS – The Domain Name System – **Electronic mail: Architecture and services ***, the user agent. Network Security: Cryptography – DES – Digital Signatures: Symmetric-Key Signatures, Public-Key signatures.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods:

Seminar, Discussion, Assignment

Text Books:

1. Andrew S. Tanenbaum, (2008),"**Computer Networks"**, Foourth Edition - Pearson Education Publication.
2. Sandeep Singhal Jari Alvinen,(2005), **"Wireless Application Protocol"**, Pearson Education Publication-.(Unit III).

Reference Books:

1. Behrouz A. Forouzan,(2007), **"Data Communications and Network"**, Second Edition, Tata MCGraw Hill.
2. William A Shay, (2001),**"Understanding data communications and Networks"** , Second Edition -Vikas Publication.

UCA37

18UCA408

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	H	S	S
CO2	S	H	S	H	M
CO3	S	H	M	H	S
CO4	S	M	S	M	H
CO5	S	S	S	S	S

S – Strong **H** – High **M** – Medium **L** – Low

UCA38

18UCA409

PROGRAMME CODE : 10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE: 18UCA409		**C.P.9:-ADVANCED JAVA**		
BATCH	**SEMESTER**	**HOURS / WEEK**	**TOTAL HOURS**	**CREDITS**
2018-2019	**IV**	**5**	**75**	**5**

Course Objectives

1. To enhance the knowledge of object-oriented programming using the Java programming language
2. To understand the applets,files,swings and exception handling mechanisms.
3. To illustrate the various features of java.

Course Outcomes (CO)

CO1	K1	Applyling java programming language for various programming Applications.
CO2	K2	Acquiring knowledge of the structure and model of the java programming language
CO3	K3	Implementing Applets for GUI Concepts.
CO4	K4	Analyzing the concepts of Threads, Swings and Files.

Syllabus

UNIT I **(Hours:13)**

JAVA Evolution: History – Features – How Java differs from C and C++ - Java and Internet- Java and WWW – Web Browsers. Overview of Java Language: Introduction – Simple Java program – Structure – Java Tokens * – Statements - Java Virtual Machine.

Classes, Objects and Methods: Introduction- defining class- field declaration-method declaration- creating objects-Constructors- Method Overloading- Overriding Methods.

UNIT II **(Hours:15)**

Arrays: One Dimensional Arrays- Creating an Array- Two dimensional Arrays, Strings and Vectors. Interfaces: Multiple Inheritance.

UNIT III **(Hours:16)**

Packages: Putting classes together – Multi Threaded Programming. Managing Errors and Exceptions . Applet programming: Introduction-How applet differs from other applications- Applet Life cycle- Applet Tag. Graphics programming: Introduction- The Graphics Class-Lines and Rectangles-Circles and Ellipses- Drawing Arcs Using control Loops in Applets.

UNIT IV **(Hours:16)**

Files: Introduction – concept of streams – Stream classes – Using streams – I/O classes- File class – Creation of files- Reading/Writing characters /Bytes-Handling Primitive Data types-Random Access Files.

UNIT V **(Hours:15)**

Introducing Swings: Origins of swing- two key swing features- components and containers-Swing Packages-Event Handling creating swing applet.

Exploring Swing: Jlabel and ImageIcon-JtextField- The Swing Buttons-Jscroll Pane- Jlist-Jcombobox-Trees-Jtable.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods

Projectors,Seminar,Discussions

Text Books:

1. E.Balagurusamy "**Programming with Java – A Primer**", Fourth Edition -Tata McGraw-Hill Publication,.
2. Herbert Schildt, (2011),"**Java the Complete Reference**", Seventh Edition -Tata McGraw-Hill Publication

Reference Books:

1. Steven Holzner, (2008), **"Java 2 Programming – Black Book "**, New Edition
2. C.Xavier,(2000), **'Programming with Java 2"**, Scitech Publication.

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	S	H	H
CO2	S	S	H	S	S
CO3	S	M	H	H	H
CO4	S	S	S	S	M

S – Strong **H** – High **M** – Medium **L** – Low

UCA41

18UCA4CO

PROGRAMME CODE: 10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE: 18UCA4CO		**C.Pr.4:-ADVANCED JAVA LAB**		
BATCH	**SEMESTER**	**HOURS / WEEK**	**TOTAL HOURS**	**CREDITS**
2018-2019	**IV**	**5**	**75**	**2**

Course Objectives

1. To implement the advanced Java language syntax and semantics.
2. To implement concepts such as variables, conditional and iterative execution methods.
3. To make students to excel in coding, compiling and execute programs while learning advanced programming concepts.

Course Outcomes (CO)

K2	CO1	Applying the concepts of control structures, inheritance, method overriding in Java.
K3	CO2	Implementing the concept of interface, packages, multithreading and applets.
K5	CO3	Manipulating the operations using PL/SQL statements
K5	CO4	Validating the database using triggers.

Syllabus

1. Write a program to print the following triangle of numbers.

   1

   1 2

   1 2 3

   1 2 3 4

2. Write a java program to define a class, instance methods, overload them and use them for dynamic method invocation.
3. Write a program to display a message and draw several shapes in Applet window.
4. Write a program to create an applet and draw Grid lines.
5. Write a java program to create a frame with three text field for name, age and qualification and a text field of multiple lines for address to display Personal Details.
6. Write a java program to demonstrate the multiple selection list box.
7. Write a java program to create a menu bar and pull down menus.

8. Write a java program to create a window when we press M/m the window displays Good Morning, A/a the window displays Good Afternoon, E/e the window displays Good Evening,N/n the window displays Good Night.
9. Write a program to move different shapes (Circle, Ellipse, Square, Rectangle) according to the arrow key pressed.
10. Write a java program to handle the divide by zero exception.
11. Write a java program to explain the multithreading with the use of multiplication tables. Three threads must be defined. Each one must create one multiplication table; they are 5 table, 7 table and 13 table.
12. Write a program to display all prime numbers between two limits using files concept.
13. Write a program to implement the concept of Concatenating and Buffering files in java.
14. Write a java program to Add Items and Remove Items using Swing components**.**
15. Write a program to implement the concept of Trees in java.

Teaching Methods

LCD Projectors, Observation,Exercises

Guidelines to the distribution of marks for practical Examinations:

Two questions will be given for each student (3 Hours / 60 Marks)

1. Record Work - 10 Marks
2. Algorithm, Program, Typing and Execution : 50 Marks.

Particulars	Program I (Marks)	Program II (Marks)
Algorithm	10	10
Program Writing	10	10
Typing and Execution	5	5

Internal Mark Splitup for 40 Marks: Observation- 10 Marks, Attendance- 5 Marks, Two Model Practical-25 Marks

UCA43

18UCA4CO

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	S	H	H
CO2	S	S	H	S	S
CO3	S	M	H	H	H
CO4	S	S	M	S	M

S – Strong **H** – High **M** – Medium **L** – Low

18UCA510

PROGRAMME CODE: 10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE:18UCA510		**C.P.10: – VISUAL BASIC AND .NET**		
BATCH	**SEMESTER**	**HOURS / WEEK**	**TOTAL HOURS**	**CREDITS**
2018-2019	**V**	**6**	**75**	**5**

Course Objectives

1. To gain the practical aspects for developing Graphical User Interface.
2. To provide a consistent object-oriented programming environment.
3. To provide application development using .Net framework.

Course Outcomes (CO)

K1	CO1	Learning the concepts of Visual Basic and .Net
K2	CO2	Summarizing the advantages of Controls in VB
K3	CO3	Demonstrating the concepts of .NET Framework
K4	CO4	Designing and developing the distributed data driven applications and C# console applications.

Syllabus

UNIT I **(Hours:18)**

Introduction to Visual Basic - Steps in VB Application - Integrated development environment (IDE)- Variables - Scope of variables- constants - Data types - Functions - Procedures - Control Structure - Arrays -Control Arrays- User defined Data types - operators - String, **Date and Time functions-** Creating and using Standard Controls - Text Box – Command Button - Check Box - Combo Box - List Box - Option Button - Timer Control - Frame, Label, Shape & Line controls - Picture Box - Image Controls - **Scroll Bars *** - Data Controls

UNIT II **(Hours:15)**

Menus - Menu Editor - Menu Creation - Modifying and Deleting Menu Items - Adding a menu Separator - Creating Submenus. - Data Access Objects (DAO). Data Report - Data Environment Designer - Connection Object - Command Object - Section of the Data Report Designer - Data Report Controls - Creating a Simple Data Report.

UNIT III (VB.NET) **(Hours:12)**

.Net Frame work and the CLR –IDE- Procedures, Scope and Exception Handling- Adding Controls – Handling Events – Creating MDI applications-Database connectivity.

UNIT IV (ASP.NET) **(Hours:15)**

What are Active Server pages– ASP Objects – ADO and ADO.NET Objects- ASP Components.

UNIT V (C SHARP) **(Hours:15)**

Introduction- Exception, Exception in method –Exception throw- String – Struct- Class definition – Class instance – Object reference – Operator Overload.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods

Powerpoint Presentation,Seminar,Discussion,Assignment

Text books:

1. Content Development Group,(2004),**"Visual Basic 6 Programming",** First Edition TataMCGrawHill Publication,. (Unit-I,II)

2. Steven Holzner, (2002), **"Visual Basic.NET Black Book Dream Tech"**, First Edition.(Unit III)

3. Dave Mercer, (2002), ASP.Net,A Beginner's Guide", TataMCGraw Hill, (Unit IV)

4. E.Balagurusamy, **"Programming in C#",** Second Edition ,TataMCGraw Hill Publication ,. (Unit V)

Reference book:

1. Scott Warner,(2000),"**Teach Yourself Visual Basic 6**", Tata McGraw-Hill Edition,First Edition.

UCA46

18UCA510

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	H	S	S
CO2	S	H	S	H	M
CO3	S	H	M	H	S
CO4	S	M	S	M	H

S – Strong **H** – High **M** – Medium **L** – Low

18UCA511

PROGRAMME CODE:10		BACHELOR OF COMPUTER APPLICATIONS		
COURSE CODE: 18UCA511		C.P.11:- ANDROID PROGRAMMING		
BATCH	SEMESTER	HOURS / WEEK	TOTAL HOURS	CREDITS
2018-2019	V	5	75	5

Course Objectives

1. To learn the basics of Android and understand the application lifecycle.
2. To learn the power of background services, threads, and notifications.
3. To introduce the principles of inheritance, packages, interfaces files and basics of Swings and Android

Course Outcomes (CO)

CO1	K1	Learning the working process ofAndroid applications
CO2	K2	Developing Andriod tools for creating Icons
CO3	K3	Applying UI-rich apps using all the major UI components
CO4	K4	Implementing Animation Concepts and Techniques using XML and Android content providers for frame applications

Syllabus

UNIT I **(Hours: 14)**

The History of the Android OS-Configuring Your Android App Development System-Updating Eclipse ADT- Configuring Eclipse Android SDK Manager Repository- Android Virtual Devices- Creating the AVD.

UNIT II **(Hours: 15)**

Android Application Development Platform: How the Android Platform is Structured – Android Runtimes - Creating Your First Android Application - **Android Resources*-** Asset Project

Folders-Creating a Custom App Launch Icon: Creating a Launch Icon for Each Screen Density- Creating Transparency-Creating Resolution Density App Launch Icons.

18UCA511

UNIT III **(Hours: 16)**

Introduction to XML: Defining an Android App, Its Design, and Constants-Android Screen Design: Writing to the Display Using Activity and View- Making Apps Interactive: Intents, Event Handling, and Menus.

UNIT IV **(Hours: 15)**

Android Animation: Making Your UI Designs Move-Frame Animation Concepts and Techniques-Creating Frame Animation Using XML Markup-Creating Frame Animation in Main Activity-Creating Tween Animation Using XML- Markup Hybrid Animation Using Frames with Tween.

UNIT V **(Hours: 15)**

Digital Video: Streaming Video, MediaPlayer, and MediaController classes-Android Service Class and Threads: Background Processing- Android Content Providers: Providing Data to Applications.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods

Projectors, Seminar,Group Discussions, Assignment

Text Book:

1. Wallace Jackson,(2014), **"Android Applications for Absolutes Beginners"**, Third Edition, Publisher Apress,.

Reference Books:

1. W. Frank Ableson Robi Sen Chris King,(2011), **"Android in Action",** Second Edition - Manning Publications,.

2. Shawn Van Every, **"Pro Android Media: Developing Graphics, Music, Video, and Rich Media Apps for Smartphones and Tablets ".**

18UCA511

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	S	H	H
CO2	H	S	H	S	S
CO3	S	M	H	H	H
CO4	S	S	M	S	M

S – Strong **H** – High **M** – Medium **L** – Low

UCA50

18UCA512

PROGRAMME CODE:10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE: 18UCA512		**C.P.12:- DATA MINING**		
BATCH	**SEMESTER**	**HOURS / WEEK**	**TOTAL HOURS**	**CREDITS**
2018-2019	**V**	**5**	**75**	**5**

Course Objectives

1. To learn the basic concepts of Data Mining algorithms, methods and tools.
2. To develop and apply critical thinking, problem-solving, and decision-making skills.
3. To discover interesting patterns, analyze supervised and unsupervised models and estimate the accuracy of the algorithms.

Course Outcomes (CO)

K1	CO1	Knowing the data mining principles and techniques.
K2	CO2	Understanding the concept of raw data processing using data mining algorithms.
K3	CO3	Learning data mining algorithms to build analytical applications.
K4	CO4	Gaining informations to extract patterns and to solve problems.

Syllabus

UNIT 1 (**Hours:15)**

Expanding Universe of Data- Production Factor-Data Mining-Data Mining versus Query Tools-*Data Mining In Marketing-Practical Applications. Learning – Self Learning Computer Systems- Machine Learning and Methodology of Science – Concept Learning.

UNIT II (**Hours:14)**

Data Warehouse-Need- Designing Decision Support System-Integration with Data Mining – Client Server and Data Ware Housing – Multi Processing Machines- Cost Justification- Knowledge Discovery Process – Data Selection – Cleaning – Enrichment- Coding.

UNIT III **(Hours:16)**

Data Mining – Preliminary Analysis of the Data Set Using Rational Query Tools – Visualization Techniques – Likelihood and Distance – OLAP Tools – K –Nearest Neighbor – Decision Tree- Association Rule – Neural Networks – Reporting- Different Forms of Knowledge- Ten Golden Rules.

UNIT IV **(Hours:15)**

Developing a data warehouse: Why and how to build a data warehouse? Data warehouse architectural strategies and organizational issues- Design considerations- Data content – *Metadata- Distribution of data- Tools for data warehousing- Performance considerations- crucial decisions in designing a data warehouse- Applications of data warehousing and data mining in government.

UNIT V **(Hours:15)**

Customer Profiling – Predicting Bit Behavior Of Pilots – Learning As Compression Of Data Sets- Content Of Message – Noise And Redundancy – Significance Of Noise – Fussy Data Base- The Traditional Theory Of Relational Data Base – From Relations To Tables – From Keys To Statistical Development Dependencies – Denormalization – Data Mining Primitives.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods

Power Point presentation , Assigments, Disussions, Seminars.

Text Books

1. C.S.R.Prabhu,(2002),**"Data Warehousing-concepts, techniques, products and Applications"**, Second Edition ,Prentice hall of India private limited, New delhi, (Unit-IV)
2. Pieter Adriaans, Dolf Zantinge,(1998), **"Data Mining ",** Addison Wesley,(Unit I,II,III &V)

Reference Book

1. Margaret H.Dunham,(2003),**"Data Mining – Introductory and Advanced Topics"**, Pearson Education.

UCA52

18UCA512

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	H	S	S	S
CO2	S	H	S	H	M
CO3	S	H	M	S	H
CO4	S	M	S	M	H

S – Strong **H** – High **M** – Medium **L** – Low

18UCA5CP

PROGRAMME CODE:10		BACHELOR OF COMPUTER APPLICATIONS		
COURSE CODE: 18UCA5CP		C.Pr. 5:- VISUAL BASIC AND .NET LAB		
BATCH	SEMESTER	HOURS / WEEK	TOTAL HOURS	CREDITS
2018-2019	II	5	75	2

Course Objectives

1. To gain the practical aspects of application development using fundamentals of ASP. Net and C#.
2. To know the concepts of web server controls, form validation, tracking and session Handling.
3. To develop programs using error handling, inheritance, delegates, file operations and ADO.net Connectivity.

Course Outcomes (CO)

K2	CO1	Understanding and implementing the concepts of Visual Basic.
K3	CO2	Applying the behavior of various objects and classes in . Net.
K4	CO3	Implementing the concepts of decision and iteration using control structures.
K4	CO4	Designing and developing the applications using. Net Technologies

Syllabus

1. Develop a program to perform Navigation of list of items between two list boxes.
2. Design an application using the Common Dialog Control to display the font family.
3. Develop a simple project to calculate Electricity Bill using DAO method and print it in a neat Report format.
4. Develop a simple project to search a record & update it newly using DAO method for student information (Calculating Attendance and Marklist).
5. Develop a Simple Project, showing the process (using payroll process)
   1) Move first 2) Move Last 3) Move Previous 4) Move Next.
6. Develop a Program to simulate a simple calculator using VB.Net.
7. Develop a Program to simulate a digital clock with reset option using VB.Net
8. Develop a Program to maintain Employee details using VB.Net.
9. Develop a program to Print one sentence for many times with different font sizes using ASP.NET.

10. Using arrays develop a program to Search a Name from a given list.
11. Develop a C# program to Calculate Student mark list using Loop.
12. Develop a Program to manipulate String Objects using Array Sort() & Array Reverse ().

Guidelines to the distribution of marks for practical Examinations:

Two questions will be given for each student (3 Hours / 60 Marks)

1. Record Work - 10 Marks
2. Algorithm, Program , Typing and Execution : 50 Marks.

Particulars	Program I (Marks)	Program II (Marks)
Algorithm	10	10
Program Writing	10	10
Typing and Execution	5	5

Internal Mark Split-ups for 40 Marks: Observation- 10 Marks, Attendance- 5 Marks, Two Model Practical-25 Marks.

MAPPING

PSO / CO	**PSO1**	**PSO 2**	**PSO 3**	**PSO 4**	**PSO 5**
CO1	S	H	S	H	S
CO2	S	H	S	M	M
CO3	H	S	H	S	S
CO4	H	M	H	H	H

S – Strong **H** – High **M** – Medium **L** – Low

18UCA613

PROGRAMME CODE:10		BACHELOR OF COMPUTER APPLICATIONS		
COURSE CODE:18UCA613		C.P.13:- WEB DESIGNING		
BATCH	SEMESTER	HOURS / WEEK	TOTAL HOURS	CREDITS
2018-2019	VI	6	75	4

Course Objectives

1. To understand website development in a user friendly manner.
2. To improve the visual design and content structuring.
3. To understand the concept of PHP to develop their web development skill.

Course Outcomes (CO)

K1	CO1	Understanding the use of HTML tags.
K2	CO2	Learning and using Cascading Style Sheet.
K1	CO3	Understanding the concept of JavaScript.
K4	CO4	Designing and Developing web pages using PHP, HTML.

Syllabus

UNIT-I **(Hours:14)**

HTML:-Introduction- Core Elements and Attribute – Basic Text Formatting-Presentational Elements-Phrase Elements- Lists- Editing Text- Using Character Entities for Special Characters-Comments-Font Elements- Basic Links-Creating Links with the <a> Element-Adding Images to Website- **Using Images as Links*-** Tables-Forms-Frames.

UNIT II **(Hours:15)**

Cascading Style Sheets: Introducing CSS-CSS Rules, Properties, Types of CSS – Controlling Fonts-Text Formatting-Selectors: Type, Class, ID, Attribute Selectors. Lengths-Percentages, Introducing the Box Model. Links- Backgrounds-Positioning with CSS-Page Layout

UNIT III **(Hours:15)**

Java Script: Learning JavaScript-How to add a script to your pages-The Document Object Model-Starting to Program with Javascript- Variables-**Operators***-Conditional Statements-Looping. Java Script Arrays: Passing Arrays to Functions-Multiple Subscripted Arrays.

UNIT IV **(Hours:15)**

Java Script Functions: Functions- Function Definition - Duration of Identifiers – **Scope Rules*** – Recursion – Java Script Global Functions. Events-Built-In Objects-Writing JavaScript. Working with JavaScript: Form Validation-Form Enhancements-Image Rollovers.

UNIT V **(Hours:16)**

Understanding PHP Basics: Introducing PHP-Using Variables and Operators: storing data and variables-Understanding PHP's Data types-Setting and checking variable Data types-Using Constants-Manipulating Variables with Operators-Controlling Program Flow-Working with Arrays: Storing Data in Arrays-Processing Arrays with Loops and Iterators-Working with Array Functions-Working with Dates and Times-Using Functions and Classes: Creating User-Defined Functions-Creating Classes.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Powerpoint Presentation,Seminar,Discussion,Assignment

Text Books

1. Jon Duckett, (2008),**"Beginning Web Programming With HTML, XHTML AND CSS",** Second Edition ,Wiley India Pvt Ltd,.
2. Vikram Vaswani,(2009), **"PHP: Beginner's Guide"**, Tata McGraw Hill Publication.

Reference Books

1. Thomas A. Powell, "**The complete Reference HTML**", – Second Edition ,Tata McGraw Hill Publication.
2. Chris Bates,**"Web Programming Building Internet Applications"**, Second Edition , John Wiley & Sons, Ltd. ,

18UCA613

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	H	S	S
CO2	S	H	S	H	M
CO3	S	H	M	H	S
CO4	S	M	S	M	H

S – Strong **H** – High **M** – Medium **L** – Low

18UCA614

PROGRAMME CODE:10		BACHELOR OF COMPUTER APPLICATIONS		
COURSE CODE: 18UCA614		C.P.14:- INFORMATION SECURITY		
BATCH 2018-2019	SEMESTER V	HOURS / WEEK 6	TOTAL HOURS 90	CREDITS 5

Course Objectives

1. To enable the students to learn fundamental concepts of Computer Security.
2. To Provide an understanding of principal concepts, technologies and basic approaches in information security.
3. To Understand the concepts of security policies such as authentication, integrity and confidentiality.

Course Outcomes (CO)

K1	CO1	Studying the basic concepts of security.
K1	CO2	Understanding the issues and technologies in information security.
K2	CO3	Learning various protection mechanisms.
K4	CO4	Illustrating various legal and ethical issues in security.

Syllabus

UNIT I (**Hours:14)**

Is there Security Problem in Computing? : What does Security mean? –Attacks-The Meaning of Computer Security-Computer Criminals. P**rotection in general purpose operating systems**: Memory and Address Protection -File Protection Mechanisms-User Authentication.

UNIT II (**Hours:16)**

Program Security: Nonmalicious Program Errors – Viruses and other Malicious Code**:** Kinds of Malicious code, how viruses attach, Home for virus, Virus Signature, Example of malicious codes: Brain Virus, Worm, Code red, Web bugs.

Targeted Malicious Code: Trojans, Trap door, Salami attack, Keystroke Logging, Timing attacks-Controls against Program Threats: Developmental controls.

UNIT III (**Hours:15)**

Database and Data Mining Security: Introduction to Databases*- Security Requirements- Reliability and Integrity- Multilevel Databases – Proposals for Multilevel Security: Separation- Data Mining.

UNIT IV (**Hours:15)**

Security in Networks: Network Concepts-Threats in Networks: Categories of Attack, Who attacks networks? Reconnaissance, Pinging, Threats in transit: Eavesdropping and wiretapping, software based packet sniffing, tools, Microwave-Firewalls-Intrusion Detection Systems.

UNIT V (**Hours:15)**

Legal and Ethical Issues in Computer Security: Protecting Programs and Data*- Information and the Law-Computer Crime: Why computer crime is hard to prosecute, Examples of Statutes, Cyber pronograghy, Accessing protected system, tampering with source code, Cryptography and the law-Case studies of Ethics: privacy rights, Fraud, Ownership of programs.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods

PowerPoint Presentation, Assigments, Disussions.

Text Book

1. Charles P.Pfleeger, Shari Lawrence Pfleeger, Deven N.Shan, **"Security in Computing",** Fourth Edition.

Reference Books

1. Dhiren R.Patel, (2008),**" Information Security Theory and Practice"**, PHI publications.
2. Ross J.Anderson and Ross Anderson,(2001), **"security Engineering: A Guide to Building Dependable Distributed Systems"**, Wiley.
3. Debby Russell and Sr.G.T.Gangemi, (2006),**"Computer Security Basics(paperback)"**, Second Edition ,O'Reilley Media,.
4. Thomas R.Peltier.Juystin Peltier and John Blackley,(2010),**"Information Security Fundamentals"**, Second Edition, Prentice Hall ,.

UCA60

18UCA614

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	H	S	S
CO2	S	H	S	H	M
CO3	S	H	M	H	S
CO4	S	M	S	M	H

S – Strong **H** – High **M** – Medium **L** – Low

UCA61

18UCA6CQ

PROGRAMME CODE:10		BACHELOR OF COMPUTER APPLICATIONS		
COURSE CODE: 18UCA6CQ		C.Pr. 6:- WEB DESIGNING LAB		
BATCH 2018-2019	SEMESTER VI	HOURS / WEEK 6	TOTAL HOURS 75	CREDITS 2

Course Objectives

1. To implement the concepts in visual design and content structuring.
2. To understand the concept of PHP to develop their web development skill.
3. To facilitate students to create a website using HTML and PHP.

Course Outcomes (CO)

K2	CO1	Understanding how to use HTML tags in Programs.
K3	CO2	Applying CSS styles in web page development.
K2	CO3	Understanding the concept of JavaScript to develop a dynamic web page.
K4	CO4	Developing web pages using PHP, HTML tags.

Syllabus

1. Design a web page for your Department.
2. Design a new web page, which shows your Biodata using CSS.
3. Design a web page for a company using HTML Formatting Tags.
4. Design a web page for Computing Student Mark List using JavaScript.
5. Design a web page for an Advertising using Style Sheets.
6. Design a web page with the following components using JavaScript.
   a) Image b) Hyperlink c) Scroll Bar d) Animation.
7. Design a web page for Library system using HTML Tags.
8. Design a web page for Payroll Processing using Java Script.
9. Design a web page for Electricity Bill Preparation using JavaScript.
10. Create a program to validate username and password using PHP.

UCA62

18UCA6CQ

Guidelines to the distribution of marks for practical Examinations:

Two questions will be given for each student (3 Hours / 60 Marks)

1. Record Work - 10 Marks
2. Algorithm, Program, Typing and Execution : 50 Marks.

Particulars	Program I (Marks)	Program II (Marks)
Algorithm	10	10
Program Writing	10	10
Typing and Execution	5	5

Internal Mark Split-ups for 40 Marks: Observation- 10 Marks, Attendance- 5 Marks, Two Model Practical-25 Marks.

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	H	S	H	S
CO2	S	H	S	M	M
CO3	H	S	H	S	S
CO4	H	M	H	H	H

S – Strong **H** – High **M** – Medium **L** – Low

UCA63

18UCA6Z1

Project Work and Viva-voce

PROGRAMME CODE:10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE: 18UCA6Z1		**Core Project – Project Work & Viva - Voce**		
Batch	**Semester**	**Hours/Week**	**Total Hours**	**Credits**
2018-2019	**VI**	**4**	**60**	**4**

Course Objectives

1. To acquire the knowledge about selecting the task based on their course skills.
2. To get the knowledge about analytical skill for solving the selected task.
3. To get confidence by implementing the task in a real time projects.

Course Outcomes (CO)

K3	CO1	Applying programming skill for solving the project.
K4	CO2	Analyzing the task and to collect the necessary information and software.
K5	CO3	Evaluating and Testing the task based on the software.
K5	CO4	Implementing the software for getting the Report.

Guidelines to the Distribution of Marks:

CIA	Project Review	15	**20**
	Regularity	5	
ESE	Project Report Present	60	**80**
	Viva – Voce	20	
Grand Total			**100**

Teaching Methods:

Power Point Presentation/Project Demo

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	H	S	H	S
CO2	S	M	M	H	H
CO3	S	H	S	H	H

S – Strong **H** – High **M** – Medium **L** – Low

UCA65

Electives for Fifth and Sixth Semester

PROGRAMME CODE: 10	BACHELOR OF COMPUTER APPLICATIONS		
	ELECTIVE PAPER - SOFTWARE PROJECT MANAGEMENT		
BATCH 2018-2019	HOURS/WEEK 6	TOTAL HOURS 90	CREDITS 5

Course Objectives

1. To Understand the fundamental principles of Software Project management
2. To know the different methods and techniques used for project management.
3. To perform Project Scheduling, tracking, Risk analysis, Quality management and Project Cost estimation using different techniques.

Course Outcomes (CO)

K1	CO1	Understanding the fundamentals of Software Project Management, Phases & Models involved in developing the software.
K2	CO2	Obtaining Project Quality, SQA's Role and Risks.
K3	CO3	Analyzing the Requirements & Software Estimation.
K4	CO4	Maintaining the Software for later implementation.

Syllabus

UNIT I **(Hours: 17)**

Product Life Cycle: Introduction – Idea generation – Prototype development Phase –Alpha phase – Beta phase – Production phase – Maintenance and obsolescence Phase. **Project Life Cycle models:** What is Project Life Cycle Model?-A Framework for studying different life cycle models – The Waterfall model*– The prototyping model – RAD model – The Spiral model and its variants. **Metrics:** Introduction – The Metrics roadmap – A Typical metrics strategy – What should you measure? – Set targets and track them.

UNIT II **(Hours: 19)**

Software Quality Assurance: How do you define quality?-Why is quality important in software? – Quality Control and Quality Assurance – Cost and benefits of quality – Software quality analyst's functions– Some popular misconceptions about the SQA's role-Software quality assurance tools –Organizational structures – Profile of a successful SQA-.

Risk Management: Introduction-What is risk management and why is it important?– Risk management cycle- Risk identification: Common tools and techniques – Risk quantification –Risk monitoring-Risk mitigation- Risk and mitigation in the context of global project teams –Some practical techniques in risk management – Metrics in risk management.

UNIT III **(Hours: 18)**

Software requirements gathering: Dimensions of requirements gathering –Steps to be followed during requirements gathering –Outputs and quality records from the requirements phase – Skills sets required during the requirements phase-Challenges during the requirements management phase- Metrics for the requirements phase.

Estimation: What is estimation? - When & why is estimation done? – The three phases of estimation-Estimation methodology – Formal models for size estimation - Common challenges during estimation – Metrics for the estimation processes.

UNIT IV **(Hours: 18)**

Design and development phase: Salient features of design – Design for reusability – Technology choices /constrains – Design to standards – Design for portability – User interface issues – Design for Testability- Design for Diagnosability – Design for maintainability – Design for Installability - Challenges during design and development phases-Skill sets for design and development- Metrics for design and development phases.

UNIT V **(Hours: 18)**

Project Management in the Maintenance Phase: Introduction – Activities during the maintenance phase-Management issues during the maintenance phase- Configuration management during the maintenance phase – Skill sets for people in the Maintenance phase -Metrics for the Maintenance phase.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods

Assignment, Case Study,Seminar

Text Book

1. Gobalswamy Ramesh,(2007), **"Managing Global Software Projects"**, Tata McGraw Hill Publishing Company.

Reference Books

1.S.A. Kelkar,(2003),**"Software Project Management – A Concise study"**, PHI.

2. Milk Cotterel, Bob Hughes,,(1955), **"Software project Management"**, Inclination/Thomas Computer press.

3. Derrel Ince, H. Sharp and M. Woodman,(1995), **"Introduction to software project management and quality assurance"**, Tata McGraw Hill.

4. Stephen H. Kan, **"Metrices and Models in Software Quality Engineering"**, Second Edition , Pearson Education Asia,.

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	H	M	S	S
CO2	S	S	H	H	H
CO3	H	H	S	H	M
CO4	S	M	H	S	S

S – Strong **H** – High **M** – Medium **L** – Low

UCA68

PROGRAMME CODE:10		BACHELOR OF COMPUTER APPLICATIONS		
		ELECTIVE PAPER :- CASE TOOLS AND CONCEPTS		
BATCH	**SEMESTER**	**HOURS / WEEK**	**TOTAL HOURS**	**CREDITS**
2018-2019	**VI**	**6**	**90**	**5**

Course Objectives

1. To learn the basics of Object Oriented analysis and design skills.
2. To expose to UML design diagrams.
3. To understand the concepts of case tools.

Course Outcomes (CO)

K1	CO1	Learning the software with SE practices and standards
K1	CO2	Studying hybrid CASE tools by integrating existing CASE tools..
K3	CO3	Knowing the new CASE tools to automate software development activities.
K2	CO4	Understanding different CASE tool approaches for the software development processes.

Syallabus

UNIT-I (**Hours: 17)**

Data Modelling: Business Growth-Organisational Model-Case Study of student MIS-What is the purpose of such Models-Understanding the business-Types of models-model development approach-the case for structural development-advantages of using a case tool. System analysis and design-what is DFD-General Rules for Drawing DFD-Difference between Logical data flow diagram and Physical data flow diagram Software verses Information Engineering-How case tools store information.

UNIT-II **(Hours: 19)**

Approach used to solve the problem statement: How to deal with a problem statement-Data flow diagram for Payroll System-Presentation Diagram for Payroll System-schematics of the model -Forms-Screens-Menu Screens-Data entry Screens-Report Output Format-Utilities. Installation of Ubridge and Synthesis: How to use the tools in Ubridge Synthesis for case-Installation of Ubridge Synthesis-Computer Aided Software Engineering Getting Ubridge to work-Setup-Assign-Housekeep-The Ubridge page.

UNIT-III (**Hours: 18)**

Introduction to Ubridge: Introduction - Main flow of the system prototyping your Report Introducing the Novice Model of the Operation. Introducing Synthesis - Synthesis basic – Synthesis - Menu Drawing the screen-Requirement Definition-Diagram-Data Dictionary-Document-Synthesis Main Administration - Synthesis reference - importing and exporting screen.

UNIT-IV

(Hours: 18)

Diagram definition tool: Introduction-Starting DDT-Drawing your own Icon - Defining the connection rules-Rebuilding your icon. Object oriented methodologies: Rumaugh Et.Al's object modeling techniques The Booch methodology –The Jacobson Et.Al Methodologies-Pattern-Frame works-The Unified Approach.

UNIT-V: **(Hours: 18)**

Introduction to UML-UML Diagram-Class Diagram-Use Case Diagram-Interaction Diagram Sequence Diagram-Collaboration Diagram-State Chart Diagram-Activity Diagram Component Diagram-Deployment Diagram.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods

Power Point Presentation,Seminar,Discussion,Assignment

Text Books:

1. Ivan N Bayross," **Case Tools Concepts and Applications",** BPB Publications
2. **"Object Oriented System Development using the unified modeling language"**McGrawHill International editions.

Reference Books:

1. Roger s pressman,**"Software engineering a practioner's approach"**,McGrawHill International Editions.

UCA70

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	H	M	S	H
CO2	S	H	H	H	M
CO3	S	H	M	M	M
CO4	S	S	H	M	S

S – Strong **H** – High **M** – Medium **L** – Low

UCA71

PROGRAMME CODE:10	BACHELOR OF COMPUTER APPLICATIONS		
	ELECTIVE PAPER II - SOFTWARE TESTING		
BATCH 2018-2019	HOURS / WEEK 6	TOTAL HOURS 90	CREDITS 5

Course Objectives

1. To provide an overview of the software testing principles .
2. To emphasize various testing undergone to enhance the quality of the software.
3. To be familiar with test management and test automation techniques.

Course Outcomes (CO)

K1	CO1	Understanding the importance of software quality/software testing and apply software testing techniques for information systems development.
K2	CO2	Analyzing the techniques in test management.
K3	CO3	Preparing and documenting test plans and make use of automatic testing tools.
K4	CO4	Developing and validating a test plan.

Syllabus

UNIT I **(Hours:19)**

Software Development Life Cycle Models: Phases of Software Project – Quality, Quality Assurance and Quality Control - Testing, Verification and Validation – Process Model to Represent Different Phases-Life Cycle Models .White Box Testing: What is White Box Testing- Static Testing – **Structural Testing *.**

UNIT II **(Hours:18)**

Black Box Testing: What is Black-Box Testing?-Why Black-Box Testing?-How to do Black Box Testing?. Integration Testing: What is Integration Testing–Integration Testing as a Type of Testing – Integration Testing as a Phase of Testing – Scenario Testing – Defect Bash.

UNIT III **(Hours:18)**

System and Acceptance Testing: System Testing Overview –Why System Testing is done?-Functional Versus Non-Functional Testing – **Functional System Testing*–**Non-Functional Testing – Acceptance Testing-Summary of Testing Phases.

UNIT IV **(Hours:18)**

Performance Testing: Factors governing Performance Testing- Methodology for Performance Testing–Tools for Performance Testing–Process for Performance Testing-Challenges. Regression Testing: What is Regression Testing? –Types of Regression Testing– When to do Regression Testing? – How to do Regression Testing? – Best Practices in Regression Testing.

UNIT V **(Hours:18)**

Ad hoc Testing: Overview of Ad hoc Testing–Buddy Testing–Pair Testing. Test Planning, Management, Execution and Reporting: Test Planning – Test Management – Test Process–Test Reporting–Best Practices.

***Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods

Discussion , Assignment, Case study

Text Book

1. Srinivasan Desikan & Gopalaswamy Ramesh,(2006),"**Software Testing - Priciples And Practices"** - Pearson Education.

Reference Books

1. Arunkumar Khannur **,"Software Testing – Techniques And Applications**",Pearson Education, India.

2. Renu Rajani **,** (2007),**SOFTWARE TESTING – Effective Methods, Tools And Techniques"**, Pradeep Oak,TMH

UCA73

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	H	S	S
CO2	S	M	S	H	M
CO3	H	S	M	H	S
CO4	S	H	H	M	H

S – Strong **H** – High **M** – Medium **L** – Low

UCA74

PROGRAMME CODE:10	BACHELOR OF COMPUTER APPLICATIONS		
	ELECTIVE PAPER :- PRINCIPLES OF COMPILER DESIGN		
BATCH 2018-2019	HOURS / WEEK 6	TOTAL HOURS 90	CREDITS 5

Course Objectives

1. To introduce the major concepts of language translation and compiler design.
2. To enrich the knowledge in various phases of compiler ant its use, code optimization techniques, machine code generation, and use of symbol table.
3. To extend the knowledge of parser by parsing LL parser and LR parser.

Course Outcomes (CO)

K2	CO2	Learning the new code optimization techniques to improve the performance of a program in terms of speed and space.
K3	CO3	Applying syntax directed translator.
K4	CO4	Acquiring the knowledge of code generation.

Syllabus

UNIT I **(Hours: 19)**

Introduction to Compliers: Compliers and Translator – Need of Translator – The structure of a Complier – Lexical analysis – Syntax analysis – Intermediate code generation – optimization – code generation – Complier – writing tools. Finite automata and lexical Analysis: The role of the lexical analysis – A simple approach to the design of lexical analyzers- Regular expressions to finite automata – Minimizing the number of states of a DFA.

UNIT II (**Hours: 18**)

The Syntactic specification of programming languages: context free grammars – derivations and parse trees – capabilities of context free grammars. Basic parsing techniques: Parsers – shift – reduce parsing – operator – precedence parsing – top down parsing – predictive parsers.

UNIT III (**Hours: 18)**

Syntax – directed translation: syntax – directed translation schemes – implementation of syntax – directed translators – intermediate code – postfix notation – parse trees and syntax trees – 3 address code – quadruples and triples – translation of assignment statements – Boolean expressions – statements that alter the flow of control. Symbol tables: the contents of a symbol table – data structures for symbol table – representing scope information.

UNIT IV **(Hours: 18)**

Run time storage administration: Implementation of a simple stack allocation scheme – implementation of block-structured languages – storage allocation in block structured languages. Error deduction and recovery: errors – lexical phase errors – syntactic phase errors – semantic errors.

UNIT V **(Hours: 17)**

Introduction of code optimization: The principle sources of optimization – loop optimization – the DAG representation of basic blocks – value numbers and algebraic laws – Global data flow analysis. Code generation: Object programs – problems in code generation – a machine model – a simple code generator – register allocation and assignment – code generation from DAG‘s – peepholes optimization.

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods

Power Point Presentation,Seminar,Discussion,Assignment

Text Books

1. Alfred V.Aho, Jeffrey D.Ullman,” **Principles of Complier Design”** ,Narosa Publication House.

Reference Books

1. Kenneth C.Louden **,”Compiler Construction: Principles and Practice”**

2. Dick Grune, H.E.Bal, C.Jacobs, K.G.Langendoen Modern Compiler Design by

UCA76

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	M	H	H
CO2	H	M	S	M	M
CO3	S	M	H	S	M
CO4	H	H	M	S	S

S – Strong **H** – High **M** – Medium **L** – Low

18UCA3S1

PROGRAMME CODE:10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE: 18UCA3S1		**SKILL BASED SUBJECT 1 – PYTHON PROGRAMMING - I**		
BATCH 2018-2019	**SEMESTER IV**	**HOURS / WEEK 2**	**TOTAL HOURS 30**	**CREDITS 3**

Course Objectives

1. To introduce the fundamentals of Python Programming.
2. To teach about the concept of Functions in Python.
3. To impart the knowledge of formatting and escape sequencing characters

Course Outcomes (CO)

K1	CO1	Remember the syntax of looping statements.
K2	CO2	Understand the concept of python scripts.
K3	CO3	Apply the concept of functions and user defined functions in programming.
K4	CO4	Analyze the concept of operators and looping statements in programming.

Syllabus

Unit I **(Hours: 6)**

Introduction to Python: Introduction – Python Overview – Getting Started with Python – Comments – Python Identifiers – Reserved Keywords – Variables – Standard Data types.

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Unit II **(Hours: 6)**

Operators - Statement and Expressions – String Operations – Boolean Expressions – Illustrative Programs : Square root of a number, Area of a Rectangle and Swap the values of two numbers.

Unit III **(Hours: 6)**

Control Statements – Iteration - While Statement – Input from Keyboard – Illustrative Programs using Control and Iteration Statements :Find a number is Odd or Even, Largest of three numbers, Input year is leap or not, Fibonacci sequence of n terms.

Unit IV **(Hours: 6)**

Functions: Introduction - Built-in Functions – Composition of Functions – Illustrative program using Functions and Built-in Functions : To get current Date and Time, To get Calendar for a month, To format date and Time and to demonstrate built-in functions.

18UCA3S1

Unit V **(Hours: 6)**

User defined Functions – Parameters and Arguments – Python Recursive Functions –the return statement. Illustrative programs using User defined functions and Recursive functions : to find HCF of given numbers, to display factors of a given number, to convert decimal number to its binary, octal, hexadecimal equivalents, sum of natural numbers using recursion and factorial of a number.

Teaching Methods:

Chalk and Talk, Presentation, Seminar, Quiz, Discussion & Assignment

Text Book:

1. E. Balagurusam**y,** (2017), Problem Solving and Python Programming , First Edition McGraw-Hill Publication.

Reference Books:

1. **Ashok Namdev Kamthane** ,**Amit Ashok Kamthane, (**2017), Programming and Problem Solving with Python, First Edition.

Mapping

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	H	M	S	H
CO2	H	S	S	H	S
CO3	M	H	M	S	H
CO4	S	H	H	M	H

S – Strong **H** – High **M** – Medium **L** – Low

18UCA4SL

PROGRAMME CODE:10		BACHELOR OF COMPUTER APPLICATIONS		
COURSE CODE: 18UCA4SL		SKILL BASED SUBJECT 2 – PYTHON PROGRAMMING LAB- I		
BATCH 2018-2019	SEMESTER IV	HOURS / WEEK 2	TOTAL HOURS 30	CREDITS 3

Course Objectives

1. To gain knowledge about the concepts of python programming.
2. To understand the concepts of Built-in functions and User-defined functions.
3. To develop programs using String functions.

Course Outcomes (CO)

K3	CO1	Apply different types of operators in programming.
K4	CO2	Implement the concepts of built-in functions in programming.
K5	CO3	Analyze the use control structures in programming.

LIST OF PRACTICAL PROGRAMS

1. Write a program to solve quadratic equation.
2. Write a program to convert temperature in Celsius to Fahrenheit and Fahrenheit to Celsius.
3. Write a program to display all the prime numbers within an interval.
4. Write a program to create a simple calculator using functions.
5. Write a program to multiply two matrices using nested loops.
6. Write a program to accept 5 subject marks and to calculate the total, average and grade of a student.
7. Write a program to generate an electricity bill.
8. Program to perform different set operations.
9. Program to perform linear and binary search .
10. Program to perform merge sort.

UCA80

18UCA4SL

Guidelines to the distribution of marks for practical Examinations:

Two questions will be given for each student (3 Hours / 60 Marks)

1. Record Work - 10 Marks
2. Algorithm, Program , Typing and Execution : 50 Marks.

Particulars	Program I (Marks)	Program II (Marks)
Algorithm	10	10
Program Writing	10	10
Typing and Execution	5	5

Internal Mark Splitup for 40 Marks: Observation- 10 Marks, Attendance- 5 Marks, Two Model Practical-25 Marks.

Teaching Methods:

Presentation and Program Demonstration using Projector

Mapping

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	M	H	M	S	H
CO2	H	S	M	H	S
CO3	M	H	M	M	H
CO4	S	H	H	M	H

S – Strong **H** – High **M** – Medium **L** – Low

18UCA5S2

PROGRAMME CODE:10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE: 18UCA5S2		**SKILL BASED SUBJECT 3– PYTHON PROGRAMMING - II**		
BATCH	**SEMESTER**	**HOURS / WEEK**	**TOTAL HOURS**	**CREDITS**
2018-2019	**V**	**2**	**30**	**3**

Course Objectives

1. To teach the concepts of Strings and Tuples and dictonaries.
2. To gain knowledge about files and directories in python.
3. To learn the concepts of dictionaries in python.

Course Outcomes (CO)

K1	CO1	Remember the structures of Lists, Tuples and Dictionaries.
K2	CO2	Understand the concepts of Input / Output operations in file.
K3	CO3	Apply the concepts of exception handling in programs.
K4	CO4	Analyze the concepts of Files and Directories.

Syllabus

Unit I **(Hours: 6)**

Strings : Compound Data type – len Function – String Slices – Strings are Immutable – String Traversal – Escape Characters – String Formatting Operators and Functions – Lists - values and accessing elements - Lists and mutable - Deleting elements from list- Built-in list operations - Built-in list methods.

Unit II **(Hours: 6)**

Tuples - Creating tuples – Accessing values in tuples – tuples are Immutable – Tuple assignment- Tuples as return values- Variable length argument tuples- Basic Tuple operations. Built-in tuple functions. Dictionaries – Creating a dictionary - Accessing values in a dictionary – Updating dictionary – Deleting elements from dictionary - Properties of dictionary keys – Operations in dictionary – Built-in dictionary methods.

Unit III **(Hours: 6)**

Files: Text files: Opening a file – Closing a file – The file object attributes- Writing to a file – Reading from a file - Renaming a file – Deleting a file – Files related methods.

18UCA5S2

Unit IV **(Hours: 6)**

Directories: mkdir() , chdir(), getcwd(), rmdir() .Illustrative programs to write data in a file for both write and append mode directories. Exception: Built-in exceptions – Handling exceptions – Exception with arguments – User defined exceptions.

Unit V **(Hours: 6)**

Classes and Objects: Overview of OOP - Class Definition - Creating Objects - Objects as arguments - Objects as Return Values - Built-in class attribute - Inheritance – Method Overriding - Data Encapsulation - Data Hiding..

Teaching Methods:

Chalk and Talk, Presentation, Seminar, Quiz, Discussion & Assignment

Text Book:

1. E. Balagurusam**y,** (2017), Problem Solving and Python Programming , First Edition McGraw-Hill Publication.

Reference Books:

1. **Ashok Namdev Kamthane** ,**Amit Ashok Kamthane, (**2017), Programming and Problem Solving with Python**,** First Edition.

Mapping

PSO / CO	**PSO1**	**PSO 2**	**PSO 3**	**PSO 4**	**PSO 5**
CO1	S	H	M	S	H
CO2	H	S	S	H	S
CO3	M	H	M	S	H
CO4	S	H	H	M	H

S – Strong **H** – High **M** – Medium **L** – Low

UCA83

18UCA6SM

PROGRAMME CODE:10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE: 18UCA6M		**SKILL BASED SUBJECT 4 – PYTHON PROGRAMMING LAB-II**		
BATCH 2018-2019	**SEMESTER VI**	**HOURS / WEEK 2**	**TOTAL HOURS 30**	**CREDITS 3**

Course Objectives

1. To gain knowledge about the usage of tuples in Programming.
2. To teach the concepts of using dictionaries programming.
3. To impart knowledge about the creation of files and directories.

Course Outcomes (CO)

K3	CO1	Apply the concepts of tuples in programming.
K4	CO2	Implement the concepts of files and directories in programming
K5	CO3	Analyze the concept of exception handling in programming.

LIST OF PRACTICAL PROGRAMS

1. Write a program to count the number of each vowel in a string.
2. Write a program to sort alphabetically the words form a string provided by the user.
3. Write a program to demonstrate tuples functions and operations.
4. Write a program to demonstrate dictionaries functions and operations.
5. Write a python program to demonstrate File Input and Output operations.
6. Write a program to demonstrate Exception Handling.
7. Write a program to demonstrate Classes and their Attributes.
8. Write a program to demonstrate inheritance and method overriding.
9. Write a program to demonstrate Multiple Inheritance.
10. Write program to generate a student mark sheet using Built-in Class attributes.

UCA84

18UCA6SM

Guidelines to the distribution of marks for practical Examinations:

Two questions will be given for each student (3 Hours / 60 Marks)

1. Record Work - 10 Marks
2. Algorithm, Program , Typing and Execution : 50 Marks.

Particulars	Program I (Marks)	Program II (Marks)
Algorithm	10	10
Program Writing	10	10
Typing and Execution	5	5

Internal Mark Splitup for 40 Marks: Observation- 10 Marks, Attendance- 5 Marks, Two Model Practical-25 Marks.

Teaching Methods:

Presentation and Program Demonstration using Projector

Mapping

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	M	H	M	S	H
CO2	H	S	M	H	S
CO3	M	H	M	M	H
CO4	S	H	H	M	H

S – Strong **H** – High **M** – Medium **L** – Low

UCA85

18UHR3N1

PART IV -NON MAJOR ELECTIVE –I HUMAN RIGHTS

Total Hours of Teaching : 30 **Total Credits : 2**

Objectives:

1. To prepare for responsible citizenship with awareness of the relationship between Human Rights, democracy and development.
2. To impart education on national and international regime on Human Rights.
3. To sensitive students to human suffering and promotion of human life with dignity.
4. To develop skills on human rights advocacy
5. To appreciate the relationship between rights and duties
6. To foster respect for tolerance and compassion for all living creature.

UNIT – I

Definition, Meaning, Concept ,Theories and Kinds of Human Rights- Evaluation and Protection of Human Rights in India- Development of Human Rights under the United Nations.

UNIT – II

United Nations Charter and Human Rights - U.N.Commission on Human Rights- Universal Declaration of Human Rights - International Covenant on

- Civil & Political Rights
- Economic, Social and Cultural Rights

UNIT – III

Human Rights and Fundamental Rights (Constitution) - Enactments regarding Human Rights Laws in India - National Human Rights Commission and State Human Rights Commission.

UNIT – IV

Aged persons and their Human Rights - Human Rights of Persons with Disabilities - Tribal Human Rights in India - Three Generation Human Rights.

UNIT – V

Rights of Women, Child, Refugees and Minorities - Media and Human Rights - NGO's in protection of Human Rights - Right to Election.

Books for Study:

1. Human Rights	Compiled by Dr.V.Sugantha, Dean(Unaided), Kongunadu Arts and Science College, Coimbatore –29.

Book for Reference:

1.Human Rights, Humanitarian Law and Refugee Law	Jaganathan,MA.,MBA.,MMM.,ML.,ML., J.P.Arjun Proprietor,Usha Jaganathan law series, 1st floor, Narmatha Nanthi Street, Magathma Gandhi Nagar, Madurai – 625014.
2. Promoting Women's Rights As Human Rights	Publisher : United Nations. New York., 1999.

UCA86

Question Paper Pattern

(External only)

Duration: 3 hours **Max: 75 marks**

Section A **(5X5=25)**

Short notes
Either – Or/ Type - Question from each unit

Section B **(5X10=50)**

Essay type
Either – Or/ Type - Question from each unit

UCA87

18UWR4N2

NON MAJOR ELECTIVE-II WOMEN'S RIGHTS

Total Hours of Teaching: 30 **Total Credits: 2**

OBJECTIVES:

- To know about the laws enacted to protect women against violence.
- To impart awareness about the hurdles faced by women.
- To develop a knowledge about the status of all forms of women to access to justice.
- To create awareness about women's rights.
- To know about laws and norms pertaining to protection of women.
- To understand the articles which enables the women's rights.
- To understand the Special Women Welfare laws.
- To realize how the violence against women puts an undue burden on health care services.

UNIT -I **(Hours: 6)**

Laws, Legal System & Change

Definition- Constitutional law, CEDAW and international human rights-law and norms-laws and social context-constitutional and legal frame.

UNIT -II **(Hours: 6)**

Politics of Land and Gender in INDIA

Introduction-faces of poverty-land as productive resources-locating identities-women's claim to land –rights of properties-case studies.

UNIT -III **(Hours: 6)**

Women's Rights: Access to Justices

Introduction-criminal law-crime agent women-domestic violence-dowry related harassment and dowry deaths-molestation-sexual abuse and rape-loopholes in practice-laws enforcement agency.

UNIT -IV **(Hours: 6)**

Women's Right

Violence against-women-domestic violence-the protection of women from domestic violence act, 2005-The Marriage Validation Act, 1982-The Hindu Widow Re-marriage Act, 1856 - The Dowry Prohibition Act, 1961.

18UWR4N2

UNIT -V **(Hours: 6)**

Special Women Welfare Laws

Sexual harassment at work place-rape and indecent representation-the indecent representation act, 1956-acts enacted for women development and empowerment-role of rape crisis center.

Book for study : Published by Kongunadu Arts & Science College, 2011.

Books for reference:

1. Good Women do not Inherit land	Nitya Rao, Social Science Press and Orient Blackswan (2008).
2. Knowing Our Rights	An Impart for Kali for Women (2006). International solidarity network.
3. Women Rights	P.D.Kaushik, Bookwell Publications (2007).
4. Violence Protective Measures for Women Development and Empowerment	Aruna Goal, Deep and Deep Publications Pvt. (2004).
5. Gender Justice	Monika Chawla, Deep and Deep Publications Pvt. (2006).
6. Domestic Violence Against Women	Preeti Mishra, Deep and Deep Publication Pvt. (2007).
7. Violence against Women	Clair M. Renzetti, Jeffrey L. Edleson, Raquel Kennedy Bergen, Sage Publications (2001).

Question paper pattern

(External Only)

Duration: 3 hrs **Max: 75 Marks**

Section A **(5 x 5=25)**

Short notes
Either – or / type – question from each unit.

Section B **(5 x 10=50)**

Essay type
Either – or / type – question from each unit.

UCA89

NON MAJOR ELECTIVE : CONSUMER AFFAIRS

Course Objectives

1. To familiarize the students with their rights and responsibilities as a consumer.
2. To understand the procedure of redress of consumer complaints, and the role of different agencies in establishing product and service standards.
3. To have a handle the business firms' interface with consumers and the consumer related regulatory and business environment.

Course Outcomes (CO)

K1	CO1	Able to know the rights and responsibility of consumers.
K2	CO2	Understanding the various procedure of redress.
K3	CO3	Applying the role of different agencies in establishing product and service standards.
K4	CO4	To enable them to handle the business firms' interface with consumers.

Syllabus

UNIT I **(Hours:15)**

Conceptual Framework - Consumer and Markets: Concept of Consumer, Nature of markets: Liberalization and Globalization of markets with special reference to Indian Consumer Markets, E-Commerce with reference to Indian Market, Concept of Price in Retail and Wholesale, Maximum Retail Price (MRP), Fair Price, GST, labeling and packaging along with relevant laws, Legal Metrology. Experiencing and Voicing Dissatisfaction: Consumer buying process, Consumer Satisfaction/dissatisfaction-Grievances-complaint, Consumer Complaining Behaviour: Alternatives available to Dissatisfied Consumers; Complaint Handling Process: ISO 10000 suite

UNIT II **(Hours:15)**

The Consumer Protection Law in India - Objectives and Basic Concepts: Consumer rights and UN Guidelines on consumer protection, Consumer goods, defect in goods, spurious goods and services, service, deficiency in service, unfair trade practice, restrictive trade practice.

Organizational set-up under the Consumer Protection Act: Advisory Bodies: Consumer Protection Councils at the Central, State and District Levels; Adjudicatory Bodies: District Forums, State Commissions, National Commission: Their Composition, Powers, and Jurisdiction (Pecuniary and Territorial), Role of Supreme Court under the CPA with important case law.

UNIT III **(Hours:15)**

Grievance Redressal Mechanism under the Indian Consumer Protection Law - Who can file a complaint? Grounds of filing a complaint; Limitation period; Procedure for filing and hearing of a complaint; Disposal of cases, Relief/Remedy available; Temporary Injunction, Enforcement of order, Appeal, frivolous and vexatious complaints; Offences and penalties.

Leading Cases decided under Consumer Protection law by Supreme Court/National Commission: Medical Negligence; Banking; Insurance; Housing & Real Estate; Electricity and Telecom Services; Education; Defective Products; Unfair Trade Practices.

Unit IV (15 Hours)

Role of Industry Regulators in Consumer Protection

i. Banking: RBI and Banking Ombudsman
ii. Insurance: IRDA and Insurance Ombudsman
iii. Telecommunication: TRAI
iv. Food Products: FSSAI
v. Electricity Supply: Electricity Regulatory Commission
vi. Real Estate Regulatory Authority

UNIT V **(Hours:15)**

Contemporary Issues in Consumer Affairs - Consumer Movement in India: Evolution of Consumer Movement in India, Formation of consumer organizations and their role in consumer protection, Misleading Advertisements and sustainable consumption, National Consumer Helpline, Comparative Product testing, Sustainable consumption and energy ratings.

Quality and Standardization: Voluntary and Mandatory standards; Role of BIS, Indian Standards Mark (ISI), Ag-mark, Hallmarking, Licensing and Surveillance; Role of International Standards: ISO an Overview.

Note: Unit 2 and 3 refers to the Consumer Protection Act, 1986. Any change in law would be added appropriately after the new law is notified.

Suggested Readings:

1. Khanna, Sri Ram, Savita Hanspal, Sheetal Kapoor, and H.K. Awasthi, (2007),**" Consumer Affairs"**, Universities Press.
2. Choudhary, Ram Naresh Prasad (2005),**"Consumer Protection Law Provisions and Procedure"**, Deep and Deep Publications Pvt Ltd.
3. G. Ganesan and M. Sumathy, (2012), **"Globalisation and Consumerism: Issues and Challenges"**, Regal Publications
4. Suresh Misra and Sapna Chadah ,(2012),**"Consumer Protection in India: Issues and Concerns"**, IIPA, New Delhi

5. Rajyalaxmi Rao (2012), **"Consumer is King"**, Universal Law Publishing Company
6. Girimaji, Pushpa,(2002),**"Consumer Right for Everyone"** ,Penguin Books.
7. E-books :- www.consumereducation.in
8. Empowering Consumers e-book, www.consumeraffairs.nic.in
9. ebook, www.bis.org
10. The Consumer Protection Act, 1986 and its later versions.

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	H	S	S	S
CO2	H	H	M	H	H
CO3	H	S	S	S	S
CO4	S	M	H	S	M

S – Strong **H** – High **M** – Medium **L** – Low

UCA92

18UCA4A4

PROGRAMME CODE:10		**BACHELOR OF COMPUTER APPLICATIONS**		
COURSE CODE:18UCA4A4		**Allied 4:- ORGANIZATIONAL BEHAVIOR AND MARKETING**		
BATCH	**SEMESTER**	**HOURS / WEEK**	**TOTAL HOURS**	**CREDITS**
2018-2019	**II**	**6**	**90**	**5**

Course Objectives

1. To specify the intellectual and behavioral competencies that graduates should possess.
2. To enable the students to insight in to the management techniques prevailing in the corporate world.
3. To be aimed at preparing young graduates to take up challenging careers in business and industry, and enables them to pursue higher studies thereafter.

Course Outcomes (CO)

CO1	K1	Preparing and delivering effective role of marketing in modern management.
CO2	K2	Identifying and analyzing product life cycle and developing new products and product characteristics.
CO3	K3	Applying knowledge of pricing, kinds of pricing and factors affecting changes in price.
CO4	K4	Applying motivational theories to improve the leadership qualities.

Syllabus

UNIT I **(Hours:18)**

Management - Meaning and Definition – Features-Functions – Importance-Difference Between Administration And Management – Management Hierarchy.Planning – Meaning – Nature-Objectives – Importance-Steps in Planning – Advantages and Limitations –Management by Objectives.

UNIT II **(Hours:18)**

Organization - Meaning-Functions-Principles- Types Of Organization-Merits& Demerits-Delegation Of Authority-Decentralization- Advantages & Disadvantages **Departmentation - Meaning-Process-Basis Types Of Departmentation** *- Importance.

18UCA4A4

UNIT III **(Hours:17)**

Staffing – Definition-Processing Of Staffing-Recruitment-Sources Of Recruitment- Stages In Selection Procedure – Training And Development. Motivation- Meaning And Importance – Types – Theories Of Motivation – Maslow, McGregor, Hertzberg, Leadership – Need And Importance – Qualities Of Leadership – Leadership Styles.

UNIT IV **(Hours:19)**

Communication &Marketing:: Written Communication: Business Letters-drafting letters for sales and collection. Oral Communication: Interviews-telephone conversation. Conducting Meeting: notice, Agenda, Minutes. Marketing Concepts: Modern Marketing – Marketing and Selling – New Product Development –Product Life Cycle- Brands, Packaging and Other Product Features.

UNIT V **(Hours:18)**

Pricing Strategies and Policies- Channels Of Distribution – Sales Promotion Program And Techniques, Managing The Sales Force – Personal Selling – Marketing Research: Procedures & Methods.

Text Books:

1. L.M.Prasad,(2004),"**Principles & Practice of Management**", Sultan Chand & Sons (Unit I, II & III).
2. Philip Kotler, (2004),"**Marketing Management**", Prentice Hall of India (Unit IV & V).
3. Rajendran Pal and Karalnath J.S.,(1999), **"Essentials of Business Communication"**, Sultan Chand & sons, New Delhi.

Reference Book:

1. Tripathy and Reddy, "**Principles of Management**", Tata McGraw Hill (Unit I, II & III)

*** Self Study Topic and Questions for examinations may be taken from Self Study Portions also.**

Teaching Methods

PowerPoint presentation,Seminar,Assignment

UCA94

18UCA4A4

MAPPING

PSO / CO	PSO1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	H	M	M
CO2	M	M	M	S	S
CO3	S	S	M	H	S
CO4	H	H	M	M	M

S – Strong **H** – High **M** – Medium **L** – Low

UCA95

18EVS101

SEMESTER I

PART IV – ENVIRONMENTAL STUDIES

Total Credits: 2 **Total Hours: 30**

Objectives:

- To inculcate knowledge and create awareness about ecological and environmental concepts, issues and solutions to environmental problems.
- To shape students into good "ecocitizens" thereby catering to global environmental needs.

UNIT I: MULTIDISCIPLINARY NATURE OF ENVIRONMENT (Hours:6)

Definition : scope and importance – Need for public awareness - Natural resources – Types of resources – Forest Resources – Water Resources – Mineral Resources – Food Resources – Energy Resources – Land Resources.

UNIT II :ECOSYSTEMS (Hours:6)

Concept of an ecosystem – Structure and functions of an ecosystem – Procedures, consumers and decomposers – Energy flow in the ecosystem – Ecological succession – Food chains, food web and ecological pyramids – Structure and function of the following ecosystem – Forest Ecosystem – Grassland Ecosystem – Desert Ecosystem – Aquatic Ecosystem.

UNIT III : BIODIVERSITY AND ITS CONSERVATION (Hours:6)

Introduction – Definition – Genetic – Species and ecosystem diversity- Bio geographical classification of India – Value of biodiversity – Biodiversity at global, national and local levels – India as a mega - diversity Nation - Hot spot of biodiversity – Threats to biodiversity - Endangered and endemic species of India – Conservation of Biodiversity – insitu Conservation of Biodiversity – exsitu Conservation of Biodiversity

UNIT IV: ENVIRONMENTAL POLLUTION (Hours:6)

Definition - Causes, effects and control measures of : Air Pollution – Water Pollution – Soil Pollution – Marine Pollution – Noise Pollution – Thermal Pollution – Nuclear Pollution – Solid Waste Management: Causes, effects, control measures of urban and industrial wastes – Role of individual in prevention of pollution – Pollution case studies – domestic waste water, effluent from paper mill and dyeing, cement pollution – Disaster Management – Food, Drought, Earthquake, Tsunami, Cyclone and Landslide.

18EVS101

UNIT V: SOCIAL ISSUES AND THE ENVIRONMENT (Hours:6)

Sustainable Development – Urban problems related to energy – Water Conservation: Rain Water Harvesting and Watershed Management – Resettlement and rehabilitation of people, its problems and concerns, case studies Narmatha Valley Project – Environmental ethics, issues and possible solutions – Climate change, global warming, ozone layer depletion, acid rain, nuclear accidents and holocaust, case studies – Hiroshima and Nagasaki, Chernobyl – Consumerism and waste products – Environmental Protection Act – Air Pollution Act (Prevention and Control) – Water Pollution Act (Prevention and control) – Wild Life Protection Act – Forest Conservation Act – Issues involved in enforcement of environmental legislation – Public awareness – Human Population and the environment – Population Growth and Distribution – Population Explosion – Family Welfare Programme – Environment and Human Health – Human Rights – Value Education – HIV/ AIDS – Women and Child Welfare – Role of Information Technology in Environment and Human Health -.

Self Study (Questions may be asked from these topics also)

Text Book

1.P.Arul,(Nov 2004), **"A Text Book of Environmental Studies, Environmental Agency"**, First Edition, No 27, Nattar street, Velacherry main road, Velacheery, Chennai – 42, .

Reference Books

1. Purohit Shammi Agarwal, A text Book of Environmental Sciences, Publisher Mrs.Saraswati Prohit, Student Education , Behind Naswan Cinema Chopansi Road, Jodhpur.

2. Dr.Suresh and K.Dhameja,"**Environmental Sciences and Engineering"** , Publisher S.K.Kataria & Sons, 424/6, Guru Nanak Street, Vaisarak, Delhi -110 006.

3. J.Glynn Henry and Gary W Heinke,**"Environmental Science and Engineering**", Prentice Hall of India Private Ltd., New Delhi – 110 001.

UCA97

18VED201

SEMESTER-II

PART-IV VALUE EDUCATION: MORAL AND ETHICS

Total Hours : 30 **Total Credits: 2**

OBJECTIVES:

- To impart the value education in every walk of life.
- To make them understand the relationship between Moral and Ethics.
- To impart the right attitude by practicing self introspection.
- To make them realize about their hidden power within them.
- To develop a knowledge for the steps of upliftment.
- To know about their goal of life.
- To make them understand the importance of yoga and meditation.
- To realize what is the real peace.
- To understand what are the ways to contribute peace to the whole world.
- To goad youth to reach excellence and reap success.

UNIT I: **(Hours: 6)**

Introduction – Meaning of Moral and Ethics – Ethics and Culture – Aim of Education.

UNIT II: **(Hours: 6)**

Swami Vivekananda – A Biography.

UNIT III: **(Hours: 6)**

The Parliament of Religions – Teachings of Swami Vivekananda.

UNIT IV: **(Hours: 6)**

Steps for Human Excellence.

UNIT V: **(Hours: 6)**

Yoga & Meditation.

Text Book:

1. Value Base Education – Moral and Ethics,(2015), Published by Kongunadu Arts and Science College (Autonomous), First Edition,.

Reference Book:

1. Swami Vivekananda, (2000), **"Easy steps to Yoga",** A Divine Life Society Publication,.

Question paper pattern
(External only)

Duration: 3 hrs Total Marks: 50

Answer all Questions (5 x 10 = 50 Marks)
Essay type, either or type questions from each unit.

UCA98

KONGUNADU ARTS AND SCIENCE COLLEGE [AUTONOMOUS]

COIMBATORE - 641 029

End Semester Examination Question Paper Pattern

[For the candidates admitted from the academic year 2014 Onwards]

BACHELOR OF COMPUTER APPLICATIONS [BCA]

Time: 3 Hours **Maximum Marks: 75 Marks.**

Answer all of the following questions

Section – A

10 x 1 = 10

[10 Questions]

(Two questions from each unit. Questions shall be in the form of multiple choices)

Section – B

5X5 = 25

Five questions either or type

(One question from each unit)

Section – C

5 X 8 = 40

Five questions either or type

(One question from each unit)
