E.M.G. YADAVA WOMEN'S COLLEGE, MADURAI – 625 014.

(*An Autonomous Institution – Affiliated to Madurai Kamaraj University*)

Re-accredited (**3rd Cycle**) with Grade **A+** & **CGPA 3.51** by NAAC

DEPARTMENT OF BUSINESS ADMINISTRATION

CBCS With OBE

BACHELOR OF BUSINESS ADMINISTRATION

PROGRAMME CODE - B

COURSE STRUCTURE

(w.e.f. 2022– 2023 Batch onwards)

CRITERION - I

1.1.3 Details of courses offered by the institution that focus on employability / entrepreneurship / skill development during the year.

Syllabus copies with highlights of contents focusing on Employability / Entrepreneurship / Skill Development

To be Noted:

HIGHLIGHTED COLORS	COURSES
	Employability
	Skill Development
	Entrepreneurship
	Skilled & Employability

Annexure - 13

E.M.G. YADAVA WOMEN'S COLLEGE, MADURAI –14.

(An Autonomous Institution – Affiliated to Madurai Kamaraj University)
Re–accredited (3rd Cycle) with Grade A+ & CGPA 3.51 by NAAC

DEPARTMENT OF INFORMATION TECHNOLOGY – UG

(w.e.f. 2022– 2023 Batch onwards)

CBCS with OBE

VISION

- To create the most favorable environment for quality academic oriented undergraduate and postgraduate education in information technology.
- To develop the programming skills and to meet the current trends of information technology.
- To provide secure and seamless access to information resources in all forms through a reliable infrastructure.
- Prepare the students for a technological society and orient them towards serving the society.

MISSION

- To impart high quality professional training at the postgraduate and undergraduate level with an emphasis on basic principles of information technology.
- To produce technologically competent and ethically responsible graduates through balanced and dynamic curriculum.
- To produce successful graduates with personal and professional responsibilities and commitment to lifelong learning.
- To take up creative project work in collaboration with IT Industries and professional societies to make the nation as a knowledge-power.

Programme Educational Objectives of B.Sc. Information Technology are:

PEO1	Graduates will be in IT industries as experts or will have completed or will be pursuing research leading to higher degrees.
PEO2	Graduates will be leaders in providing technically feasible and socially acceptable solutions to complex real life problems by virtue of their core competence and communication skills.
PEO3	Graduates will exhibit entrepreneurial skills and professional ethics to take up new ventures.
PEO4	Have strong technical foundation for successful professional careers and to evolve as key- players/ entrepreneurs in the field of information technology.
PEO5	Have leadership skills and awareness on professional ethics and codes.
PEO6	Engage in life-long learning and to remain current in their profession to foster personal and organizational growth.

Annexure - 13

PROGRAM OUTCOMES

On completion of B.Sc., Programmes students will be able to

S. No.	Programme Outcomes
PO1	Develop necessary foundation in fundamentals, aptitude, applications of sciences and other related subjects. Able to clear competitive examinations, appear with confidence and possess basic skills on the related subjects. Secure jobs in employment in Government / Private / Industry and entrepreneurship.
PO2	Receive basic experimental skills in the observation and study of nature, biological techniques, scientific research and demonstrate proficiency in critical analysis or creativity and provide scientific solutions to the problems of the society.
PO3	Enhance the digital knowledge of statistics and to understand its application in interpreting the obtained data.
PO4	Obtain knowledge with emerging trends in their disciplinary and inter-disciplinary areas. Usage of modern tools and software can also be put to use.
PO5	Lead lifelong learning & contribute sustainability to environment, equip students enough to takeup higher studies upto research in various disciplines to become professionals.
PO6	Imbibe democratic, ethical, moral, social & spiritual values in the minds of the learners to become responsible citizens and build a healthy nation.

PROGRAMME SPECIFIC OUTCOMES

PSOs	Graduate Attributes	After completion of B.Sc.(Information Technology) the students will be able to	PO Addressed
PSO1	**Knowledge & Proficiency**	Acquire fundamental concepts, methods and practices of Information Technology to develop theoretical and practical skill sets.	PO1
PSO2	**Problem Analysis**	Analyze and recommend the appropriate IT infrastructure required for the implementation of a project.	PO2
PSO3	**Problem Solving**	Design, develop and test software systems for world-wide network computers to provide solutions to real world problems.	PO2
PSO4	**Modern tool usage**	Use modern tools, resources and software and be abreast with the emerging trends in their disciplinary area.	PO4
PSO5	**Social Responsibility**	Excellent adaptability to function in multi-disciplinary work environment in appreciation of professional ethics and societal responsibilities.	PO6
PSO6	**Life-long learning**	Develop strong skills in systematic planning, developing, testing, implementing and providing IT solutions for different domains which helps in the betterment of life.	PO5
PSO7	**Ethical & Moral and Spiritual Values**	Apply ethical principles, responsibility and norms of the technology practice.	PO6
PSO8	**Leadership / Team work / Communication Skills**	An ability to function on different category of teams as a leader and communicate to present effectively.	PO3

Qualification for Admission

Candidates should have passed the Higher Secondary Examination with Mathematics, conducted by the Board of Higher Secondary Education, Government of Tamil Nadu, CBSE & ICSE or any other examinations approved by Madurai Kamaraj University as equivalent.

Duration of the Course

The students shall undergo prescribed course of study for the period of three academic years under CBCS semester pattern with outcome based education model.

Medium of Instruction: English

System: Choice Based Credit System with Outcome Based Education Model

Courses of Study with Credit Distribution for B.Sc. Information Technology

Category	No. of Courses	No. of Credits
Part – I	4	12
Part – II	4	12
Major Core Paper	17	60
Major Elective	3	15
Allied Papers	4	20
Skill Based Elective	6	12
Non Major Elective	2	4
EVS & VE	2	4
NSS/Physical Education	1	1
Total	43	140

Nature of the Course

Courses are classified according to the following nature

1. Knowledge and skill oriented
2. Employability oriented
3. Entrepreneurship oriented

Outcome Based Education (OBE) & Assessment

Students understanding must be built on and assessed for wide range of learning activities, whichincludes different approaches and are classified along several bases, such as

1. **Based on purpose:**

- Continuous Assessment (internal tests, Assignment, seminar, quiz, Documentation, Case lets,ICT based Assignment, Mini projects administered during the learning process)
- External Assessment (Evaluation of students' learning at the end of instructional unit)

2. **Based on Domain Knowledge: (for UG Up to K4 levels)**

Assessment through K1, K2, K3 & K4

Annexure - 13

EVALUATION (THEORY)

Internal (Formative) : 25 marks
External (Summative) : 75 marks
Total : 100 marks

Formative Test (CIA-Continuous Internal Assessment) : 25 Marks

Components	**Marks**
Test (Average of three tests) (Conducted for 100 marks and converted into 20 marks)	**20**
Assignment(Quiz/ Documentation/ Case lets/ ICT based Assignment/ Mini Projects)	**5**
Total	**25**

- ✓ **Centralized system** of Internal Assessment Tests
- ✓ There will be **Three Internal Assessment** Tests
- ✓ Duration of Internal assessment test will be **1 hour for Test I and 2 hours for Test II and III**
- ✓ Students shall write **retest** with the approval of HOD on genuine grounds if they are absent.

Question Paper Pattern for Continuous Internal Assessment- Test I

Section		**Marks**
A-Multiple Choice Question	(3x1 mark)	3
B-Short Answer	(1x2 marks)	2
C-Either Or type	(1/2x 5 marks)	5
D-Open choice type	(1/2 x 10 marks)	10
Total		**20**

Question Paper Pattern for Continuous Internal Assessment -Test II and III

Multiple choice for Section		**Marks**
A- Multiple Choice Question	(6x1 mark)	6
B-Short Answer	(2x2 marks)	4
C-Either Or Type	(2/4 x5 marks)	10
D-Open Choice Type	(2/3 x 10 marks)	20
Total		**40**

Conducted for 100 marks and converted into 20 marks

Annexure - 13

Question Paper Pattern for Summative Examination

Section	Marks
A- Multiple choice Questions without Choice (10x1 mark)	10
B-Short Answer without choice (5x2 marks)	10
C-Either Or type (5/10 x5 marks)	25
D-Open Choice type (3out of 5x10 marks)	30
Total	**75**

In respect of Summative Examinations passing minimum is **36 % for UG.**

Distribution of Marks in % with K Levels CIA I, II, III & External Assessment

Blooms Taxonomy	Internal Assessment			External Assessment
	I	II	III	
Knowledge (K1)	12%	12%	12%	13%
Understanding (K2)	44%	22%	22%	21%
Apply (K3)	44%	33%	33%	33%
Analyze (K4)	-	33%	33%	33%

Latest amendments and revision as per **UGC** and **TANSCHE** norms is taken into consideration in curriculum preparation.

Annexure - 13

BLUE PRINT FOR INTERNAL ASSESSMENT – I
Articulation Mapping - K Levels with Course Learning Outcomes (CLOs)

Sl. No	CLOs	K-Level	Section A		Section B		Section C	Section D	Total
			MCQs (No Choice)		Short Answers (No Choice)		(Either or Type)	(Open Choice)	
			No. of Questions	K-Level	No. of Questions	K-Level			
1	CLO1	Up to K3	3	K1	1	K1	2 (K2) (Each set of questions must be in the same level)	1 (K2) & 2 (K3)	
No. of Questions to be asked			3		1		2	3	9
No. of Questions to be answered			3		1		1	1	6
Marks for each question			1		2		5	10	-
Total Marks for each section			**3**		**2**		**5**	**10**	**20**

BLUE PRINT FOR INTERNAL ASSESSMENT – II

Articulation Mapping - K Levels with Course Learning Outcomes (CLOs)

Sl. No	CLOs	K-Level	Section A		Section B		Section C	Section D	Total
			MCQs (No Choice)		Short Answers (No Choice)		(Either or Type)	(Open Choice)	
			No. of Questions	K-Level	No. of Questions	K-Level			
1	CLO2	Up to K3	3	K1/K2	1	K1/K2	2 (K2) / 2 (K4) (Each set of questions must be in the same level)	2 (K3) & 1 (K4)	
2	CLO3	Up to K4	3	K1/K2	1	K1/K2			
No. of Questions to be asked			6		2		4	3	15
No. of Questions to be answered			6		2		2	2	12
Marks for each question			1		2		5	10	
Total Marks for each section			**6**		**4**		**10**	**20**	**40**

Annexure - 13

BLUE PRINT FOR INTERNAL ASSESSMENT – III

Articulation Mapping - K Levels with Course Learning Outcomes (COs)

Sl. No	CLOs	K-Level	Section A		Section B		Section C	Section D	Total
			MCQs (No Choice)		Short Answers (No Choice)		(Either or Type)	(Open Choice)	
			No. of Questions	K-Level	No. of Questions	K-Level			
1	CLO 4	Up to K3	3	K1/K2	1	K1/K2	2 (K2) / 2 (K4) (Each set of questions must be in the same level)	2 (K3) & 1 (K4)	
2	CLO 5	Up to K4	3	K1/ K2	1	K1/K2			
No. of Questions to be asked			6		2		4	3	15
No. of Questions to be answered			6		2		2	2	12
Marks for each question			1		2		5	10	
Total Marks for each section			**6**		**4**		**10**	**20**	**40**

Distribution of Marks with K Levels CIA I, CIA II and CIA III

CIA	K Levels	Section A MCQ	Section B (Short Answer Questions)	Section C (Either/ Or Choice)	Section D(Open Choice)	Total Marks	% of Marks
I	K1	3	2	-	-	5	12
	K2	-	-	10	10	20	44
	K3	-	-	-	20	20	44
	Marks	**3**	**2**	**10**	**20**	**45**	**100**
II	K1	5	2	-		7	12
	K2	1	2	10	-	13	22
	K3	-	-	-	20	20	33
	K4	-	-	10	10	20	33
	Marks	**6**	**4**	**20**	**30**	**60**	**100**
III	K1	5	2	-		7	12
	K2	1	2	10	-	13	22
	K3	-	-	-	20	20	33
	K4	-	-	10	10	20	33
	Marks	**6**	**4**	**20**	**30**	**60**	**100**

Annexure - 13

.

SUMMATIVE EXAMINATION -BLUE PRINT

Articulation Mapping – K Levels with Course Learning Outcomes (CLOs) for External Assessment

Sl. No	CLOs	K- Level	Section A		Section B		Section C (Either/or Choice)	Section D (Open Choice)	Total
			MCQs		Short Answers				
			No. of Questions	K- Level	No. of Questions	K- Level			
1	CLO 1	Up to K3	2	K1/K2	1	K1/K2	2 (K3&K3)	1(K2)	
2	CLO 2	Up to K3	2	K1/K2	1	K1/K2	2 (K2&K2)	1(K3)	
3	CLO 3	Up to K4	2	K1/K2	1	K1/K2	2 (K4&K4)	1(K4)	
4	CLO 4	Up to K3	2	K1/K2	1	K1/K2	2 (K3&K3)	1(K3)	
5	CLO 5	Up to K4	2	K1/K2	1	K1/K2	2 (K4&K4)	1(K4)	
No. of Questions to be asked			10		5		10	5	30
No. of Questions to be answered			10		5		5	3	23
Marks for each question			1		2		5	10	
Total Marks for each section			**10**		**10**		**25**	**30**	**75 (Marks)**

Distribution of Section-wise Marks with K Levels for External Assessment

K Levels	Section A (MCQ'S) (No choice)	Section B (Short Answer) (No choice)	Section C (Either or Type)	Section D (Open Choice)	Total Marks	% of Marks
K1	9	6	-	--	**15**	13
K2	1	4	10	10	**25**	21
K3	-	-	20	20	**40**	33
K4	-	-	20	20	**40**	33
Total Marks	**10**	**10**	**50**	**50**	**120**	**100**

K1 - Remembering and recalling facts with specific answers

K2 – Basic understanding of facts and stating main ideas with general answers

K3 – Application oriented – solving problems, Justifying the statement and deriving inferences

K4 - Examining, analyzing, presentation and make inference with evidences.

Annexure - 13

EVALUATION (THEORY)

(PART IV - SEC, IDC, AECC (EVS & Value Education)

PART V - NSS / Physical Education)

Internal (Formative) : 25 marks
External (Summative) : 75 marks
Total :100 marks

Formative Test (CIA-Continuous Internal Assessment) : 25 Marks

Components	Marks
Test (Conducted for 50 marks and converted into 25 marks)	**25**

- ✓ There will be Only one Internal Assessment Test
- ✓ Duration of Internal assessment test will be 2 hour for Test
- ✓ Students shall write retest with the approval of HOD on genuine grounds if they are absent.

Question Paper Pattern for Continuous Internal Assessment- Test

Section	Marks
A-Multiple Choice Question (5x1 mark)	5
B-Short Answer (5x2 marks)	10
C-Either Or type (3x 5 marks)	15
D-Open choice type (2/3 x 10 marks)	20
Total	**50**

Conducted for 50 marks and converted into 25 marks

Question Paper Pattern for External Examination

Section	Marks
A-Multiple Choice Question (10x1 mark)	10
B-Short Answer (5x2 marks)	10
C-Either Or type (5x 5 marks)	25
D-Open choice type (3/5 x 10 marks)	30
Total	**75**

Annexure - 13

BLUE PRINT FOR INTERNAL ASSESSMENT

Articulation Mapping - K Levels with Course Learning Outcomes (CLOs)

Sl. No	CLOs	K- Level	Section A		Section B		Section C	Section D	Total
			MCQs (No Choice)		Short Answers (No Choice)		(Either or Type)	(Open Choice)	
			No. of Questions	K-Level	No. of Questions	K-Level			
1.	CLO1	Up to K3	1	K1	1	K1	4(K2) & 2(K3) (Each set of questions must be in the same level)	1(K2) & 2(K3)	
2.	CLO2	Up to K3	1		1				
3.	CLO3	Up to K3	1		1				
4	CLO4	Up to K3	1		1				
5	CLO5	Up to K3	1		1				
No. of Questions to be asked			5		5		6	3	19
No. of Questions to be answered			5		5		3	2	15
Marks for each question			1		2		5	10	
Total Marks for each section			**5**		**10**		**15**	**20**	**50**

Distribution of Marks with K Levels - CIA

CIA	K Levels	Section A MCQ	Section B (Short Answers)	Section C (Either/Or Choice)	Section D (Open Choice)	Total Marks	% of Marks
I	K1	5	10	-	-	15	20
	K2	-	-	20	10	30	40
	K3	-	-	10	20	30	40
	K4	-	-	-	-	-	-
	Marks	**5**	**10**	**30**	**30**	**75**	**100**

.

Annexure - 13

Articulation Mapping - K Levels with Course Learning Outcomes (CLOs) for External Assessment

Sl. No	CLOs	K-Level	Section A		Section B		Section C (Either/or Choice)	Section D (Open Choice)	Total
			MCQs		Short Answers				
			No. of Questions	K-Level	No. of Questions	K-Level			
1	CLO 1	Up to K3	2	K1	1	K1	3(K2) & 2(K3) (Each set of questions must be in the same level)	2(K2) & 3(K3)	
2	CLO 2	Up to K3	2		1				
3	CLO 3	Up to K3	2		1				
4	CLO 4	Up to K 3	2		1				
5	CLO 5	Up to K 3	2		1				
No. of Questions to be asked			10		5		10	5	30
No. of Questions to be answered			10		5		5	3	23
Marks for each question			1		2		5	10	
Total Marks for each section			10		10		25	30	75

Distribution of Section-wise Marks with K Levels for External Assessment

K Levels	Section A (MCQ'S)	Section B (Short Answer)	Section C (Either/or)	Section D (Open Choice)	**Total Marks**	% of Marks without choice
K1	10	10	-	--	**20**	16
K2	-	-	30	20	**50**	42
K3	-	-	20	30	**50**	42
Total Marks	10	10	50	50	**120**	100

Annexure - 13

E.M.G. YADAVA WOMEN'S COLLEGE, MADURAI – 14.

(An Autonomous Institution – Affiliated to Madurai Kamaraj University)
Re–accredited (3rd Cycle) with Grade A+ & CGPA 3.51 by NAAC

DEPARTMENT OF INFORMATION TECHNOLOGY-UG
CBCS with OBE

COURSE STRUCTURE - SEMESTER WISE
(w.e.f. 2022 – 2023 Batch onwards)

Semester	Part	Course Code	Title of the paper	Teaching Hrs. (per week)	Duration of Exam (hrs.)	Marks Allotted			Credits
						CIA	SE	Total	
1	I	**22OUITA1**	Part I - Tamil	6	3	25	75	100	3
	II	**22OU2EN1**	Part II - English	6	3	25	75	100	3
	III	**22OUIT11**	**Core 1** - Object Oriented Programming with C++	4	3	25	75	100	4
	III	**22OUIT1P**	**Core Lab 2** - Object Oriented Programming with C++ Lab	5	3	40	60	100	3
	III	**22OUITGEIT1**	**GEC I:** Physics – Digital Principles and Applications	5	3	25	75	100	5
	IV	**22OUITSE1P**	**SEC** – HTML and Office Automation Lab	2	2	40	60	100	2
	IV	**22OUITID1**	**IDC** - Windows Tools and Applications	2	2	25	75	100	2
2	I	**22OU1TA2**	Part I - Tamil	6	3	25	75	100	3
	II	**22OU2EN2**	Part II - English	6	3	25	75	100	3
	III	**22OUIT21**	**Core 3** – Operating System	4	3	25	75	100	4
	III	**22OUIT2P**	**Core Lab 4** - Linux Programming Lab	5	3	40	60	100	3
	III	**22OUITGEMA2**	**GEC II** : Mathematics – Resource Management Techniques	5	3	25	75	100	5
	IV	**22OUITSE2P**	**SEC** – Desktop Publishing Lab	2	2	40	60	100	2
	IV	**22OUITID2**	**IDC** - Introduction to Internet	2	2	25	75	100	2
3	I	**22OU1TA3**	Part I - Tamil	6	3	25	75	100	3
	II	**22OU2EN3**	Part II - English	6	3	25	75	100	3
	III	**22OUIT31**	**Core 5** – RDBMS	4	3	25	75	100	3
	III	**22OUIT32**	**Core 6** – Data Structure and Algorithms	4	3	25	75	100	4
	III	**22OUIT3P**	**Core Lab 7** – RDBMS Lab	3	3	40	60	100	3
	III	**22OUITGECOM3**	**GEC III :** Commerce - E-Commerce	5	3	25	75	100	5

	IV	**22OUITSE3P**	**SEC** – PHP and MySQL Lab	2	2	40	60	100	2
4	I	**22OU1TA4**	Part I - Tamil	6	3	25	75	100	3
	II	**22OU2EN4**	Part II - English	6	3	25	75	100	3
	III	**22OUIT41**	**Core 8** – Computer Graphics	4	3	25	75	100	4
	III	**22OUIT4P**	**Core Lab 9** – Computer Graphics Lab	3	3	40	60	100	3
	III	**22OUIT42**	**Core 10** – Computer Organization	4	3	25	75	100	3
	III	**22OUITGECOM4**	**GEC IV**: Commerce – Financial and Cost Accounting	5	3	25	75	100	5
	IV	**22OUITSE4P**	**SEC** – Tally Lab	2	2	40	60	100	2
5	III	**22OUIT51**	**Core 11** - Programming in Java	5	3	25	75	100	4
	III	**22OUIT52**	**Core 12** - Software Engineering	5	3	25	75	100	4
	III	**22OUIT53**	**Core 13** – Computer Networks	5	3	25	75	100	4
	III	**22OUIT5P**	**Core Lab 14** – Programming in Java Lab	6	3	40	60	100	3
	III		**DSEC - I**	5	3	25	75	100	5
	IV	**22OUITSE5**	**SEC** – Dot Net Technologies Lab	2	2	40	60	100	2
	IV	**22OUAECEV5**	**AECC** - Environmental Studies	2	2	25	75	100	2
6	III	**22OUIT61**	**Core 15** – Python Programming	5	3	25	75	100	4
	III	**22OUITPR6**	**Core 16** – Project	5	3	25	75	100	4
	III	**22OUIT6P**	**Core Lab 17** – Python Programming Lab	6	3	40	60	100	3
	III		**DSEC - II**	5	3	25	75	100	5
	III		**DSEC - III**	5	3	20	80	100	5
	IV	**22OUITSE6**	**SEC** - Quantitative Aptitude	2	2	25	75	100	2
	IV	**22OUAECVE6**	**AECC** - Value Education	2	2	25	75	100	2
	V	**22O5NS4/ 22O5PE4**	Extension Activities N.S.S / Physical Education	-	2	25	75	100	1
			Total	**180**					**140**

GEC : Generic Elective Course

SEC : Skill Enhancement Course

DSEC : Discipline Specific Elective Course

AECC: Ability Enhancement Compulsory Course

IDC : Inter Disciplinary Course

Annexure - 13

DSEC: Discipline Specific Elective Course:

Semester - V (DSEC - I Choose any one)

1. Android Programming - 22OUITDSE5A
2. Cloud Computing - 22OUITDSE5B

Semester - VI (DSEC - II Choose any one)

1. Mobile Computing - 22OUITDSE6A
2. Block Chain Technologies - 22OUITDSE6B

Semester - VI (DSEC - III Choose any one)

1. Internet of Things - 22OUITDSE6C
2. Cyber Security - 22OUITDSE6D

NOTE:

The students are permitted to obtain additional credits (Optional)

1.MOOCs / SWAYAM / NPTEL Course (Online)
2. Project

Year	Semester	Title	Duration of Study	Credits
III	VI	Mini Project	6 months	1

Annexure - 13

Compulsory Courses:

Year	Semester	Nature of Course	Course Code	Title of the Course	Hours	Offered to students of
I	I	**Add on Course**	22ITAOC 22ITAOCP	Web Page Designing Web Page Designing Lab	30	I B.Sc., IT
II	III & IV	**Certificate Course**	22ITC 22ITCP	Image Animation in Flash Image Animation in Flash Lab	90	II year students of all other disciplines
III	V	**Value Added Course**	22ITVAC 22ITVACP	Web Development Web Development Lab	30	III B.Sc., IT

Annexure - 13

DEPARTMENT OF INFORMATION TECHNOLOGY					Class: I B.Sc.			
Sem.	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/ Week**	**CIA**	**SE**	**Total**
I	**Core**	**22OUIT11**	**Object Oriented Programming with C++**	**4**	**4**	**5**	**5**	**100**

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✓		

Course Objectives:

1. To comprehend object oriented programming concepts using C++.
2. To understand Class, objects and Constructors.
3. To use the operator overloading and inheritance in program development.
4. To describe the concept of Pointer to objects and pure virtual functions.
5. To apply the concepts of files and its stream operations.

Course Content

Unit – I Software Crisis – Software Evolution – Basic Concepts of Object-Oriented Programming – Benefits of OOP – Object-Oriented Languages - Applications of OOP – Application of C++ - Structure of a C++ Program – Tokens – Keywords – Identifiers – Basic Data Types – User-defined Data types – Derived data types – Symbolic constants – Type compatibility – Declaration of variables – Dynamic initialization of variables –Reference variables – Operators in C++ - Manipulators – Type cast operator – Expressions and their types- Implicit conversions – Control structures – The main function – Function prototyping – inline functions – Function overloading.

Unit – II Specifying a class – Defining member functions – Making an outside function inline – Nesting of member functions – Private member functions – Array within a class – Memory allocation for objects – Static data members – Static member functions – Array of objects - Objects as function arguments – Friendly functions – Returning objects – Constant member functions – Constructors – Parameterized constructor – Multiple constructors in a class – Constructors with default arguments – Dynamic initialization of objects – Copy constructor – Destructors.

Unit – III Defining operator overloading – Overloading unary operators – Overloading binary operators– Overloading binary operators using friend function – Rules for overloading operators - Defining derived classes – Single inheritance – Making a private member inheritable – Multilevel inheritance – Multiple inheritance – Hierarchical inheritance – Hybrid inheritance - Virtual base classes – Constructors in derived class – Member classes: Nesting of classes.

Unit – IV Pointer to objects – this pointer – Pointers to derived classes – Virtual functions – Pure virtual functions – C++ Stream classes – Unformatted I/O operations – Formatted Console I/O operations – Managing output with manipulators.

Unit – V Classes of file stream operations – Opening and Closing files – Detecting end of file – More about open() function – File modes, File pointers and their manipulation – Sequential input and output operations – Command-line arguments- Templates: class templates and function templates.

Book for Study:

Balagurusamy, E. (2013). *Object Oriented Programming with C++***.** McGraw Hill Education (India) Private Limited. New Delhi. Sixth Edition**.**

Chapters:

Unit I	–	Chapter 1 (Except 1.3, 1.4), Chapter 2 (Only 2.6), Chapter 3 (Except 3.20, 3.21, 3.22), Chapter 4
Unit II	–	Chapter 5 (Except 5.18, 5.19), Chapter 6 (Except 6.8, 6.9, 6.10)
Unit III	–	Chapter 7, Chapter 8
Unit IV	–	Chapter 9(Except 9.8) Chapter 10
Unit V	–	Chapter 11 (Except 11.8), Chapter 12 (Only 12.2, 12.3 and 12.4)

Books for Reference:

1. Alok Kumar Jagadev, Amiya Kumar Rath, & Satchidananda Dehuri. (2007). *Object-Oriented Programming Using C++*. Prentice-Hall of India Private Limited. New Delhi.
2. Ashok N. Kamthane. (2006). *Object Oriented Programming with ANSI & Turbo C++*. Pearson Education.
3. John, R., Hubbard. (2007). *Programming with C++*. Tata McGraw Hill Publishing Company Private Limited. New Delhi, Second Edition.
4. Paul Deitel & Harvey Deitel. (2014). *C++ How to Program*. PHI. U.S.A. Ninth Edition.

5. Poornachandra Sarang. (2009). *Object-Oriented Programming With C++*. 2nd Edition. PHI Learning Private Limited. New Delhi.

Web Resources / E-Books:

1. https://soaneemrana.org/onewebmedia/DIGITAL%20PRINCIPLES%20AND%20APPLICATION%20BY%20LEACH%20&%20MALVINO.pdf
2. https://www.cplusplus.com/files/tutorial.pdf
3. http://www.lmpt.univ-tours.fr/~volkov/C++.pdf
4. http:/ /www. microlinkcolleges.net/elib/files/undergraduate/Information%20System/ Object %20Oriented%20Programming%20with%20C++.pdf
5. https:// www.google.co.in/books/edition/OBJECT_ORIENTED_ PROGRAMMING_ USING_C++/dZcq7OL4bhsC?hl=en&gbpv=1&printsec=frontcover
6. https:// www.google.co.in/books/edition/Object_Oriented_Programming_with_ ANSI_an /rA0SWk4dQ-0C?hl=en&gbpv=1

Pedagogy

Chalk and Talk, PPT, Group discussion , OHP presentations, Quiz, On the spot test, You tube Links, Open book test and Virtual Labs.

Activities to be given

- Group Discussion
- Quiz
- PPT

Course Learning Outcomes (CLOs):

Upon successful completion of the Course, the students will be able to

CLO	**Course Outcomes Statement**	**Knowledge According to Bloom's Taxonomy (Upto K level)**
CLO 1	Understand object oriented programming concepts using C++.	K1 to K3
CLO 2	Explain the top-down and bottom-up programming approach and apply bottom up approach to solve real world problems.	K1to K3
CLO 3	Develop the arrays and strings in sorting and pattern matching applications.	K1 to K4
CLO 4	Describe the concept of inheritance, overloading, constructors and apply real world problems.	K1 to K3
CLO 5	Apply the concepts of multithread and event handling program.	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	2	3	1	2	3	2
CLO2	3	3	2	3	3	2
CLO3	3	3	1	2	2	1
CLO4	3	2	2	1	1	2
CLO5	3	3	1	2	3	1

1-Basic Level 2- Intermediate Level 3- Advanced Level

LESSON PLAN: Total Hours (60 Hrs)

Unit	Course Content	Hrs	Mode
I	Software Crisis – Software Evolution – Basic Concepts of Object-Oriented Programming – Benefits of OOP – Object-Oriented Languages - Applications of OOP – Application of C++ . Structure of a C++ Program – Tokens – Keywords – Identifiers – Basic Data Types – User-defined Data types – Derived data types – Symbolic constants – Type compatibility – Declaration of variables – Dynamic initialization of variables –Reference variables – Operators in C++ - Manipulators. Type cast operator Expressions and their types-Implicit conversions – Control structures – The main function – Function prototyping – inline functions – Function overloading.	12	Chalk & Talk, PPT
II	Specifying a class – Defining member functions – Making an outside function inline – Nesting of member functions – Private member functions – Array within a class – Memory allocation for objects – Static data members – Static member functions. Array of objects - Objects as function arguments – Friendly functions – Returning objects – Constant member functions – Constructors – Parameterized constructor – Multiple constructors in a class – Constructors with default arguments – Dynamic initialization of objects – Copy constructor – Destructors.	12	Chalk & Talk, Spot test, Exercise, Assignment, PPT, Video material.

Annexure - 13

III	Defining operator overloading – Overloading unary operators – Overloading binary operators– Overloading binary operators using friend function – Rules for overloading operators - Defining derived classes Single inheritance – Making a private member inheritable – Multilevel inheritance – Multiple inheritance – Hierarchical inheritance – Hybrid inheritance - Virtual base classes – Constructors in derived class – Member classes: Nesting of classes.	12	Chalk & Talk, Exercise, PPT, Video Material
IV	Pointer to objects – this pointer – Pointers to derived classes – Virtual functions – Pure virtual functions. C++ Stream classes – Unformatted I/O operations – Managing output with manipulators.	12	Chalk & Talk, Exercise, Assignment, Video Material, Group Discussion
V	Classes of file stream operations – Opening and Closing files – Detecting end of file – More about open() function – File modes- File pointers and their manipulation – Sequential input and output operations - Command-line arguments- Templates: class templates and function templates.	12	Quiz, Chalk & Talk, Exercise , Spot test, Assignment, Seminar

Course Designer

Mrs. R.Boomadevi

Mrs. R.Lakshmi

Annexure - 13

DEPARTMENT OF INFORMATION TECHNOLOGY					Class: I B.Sc			
Sem.	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/ Week**	**CIA**	**SE**	**Total**
I	**Core Lab**	**22OUIT1P**	**Object Oriented Programming with C++ Lab**	**3**	**5**	**40**	**60**	**100**

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	Entrepreneurship oriented
✓	✓	

Course Objectives

1. To impart the knowledge Default arguments and constructor.
2. To learn the organized structures of inheritance type and operator overloading.
3. To design a string manipulation and virtual function.
4. To learn the objects and classes for developing programs.
5. To design various object oriented concepts to solve different problems.

PROGRAMS LIST

1. Write a program in C++ to implement the default arguments.
2. Write a program in C++ to implement the Friend Function.
3. Write a Program in C++ to Find the Square value of given two integer in Inline Function.
4. Write a Program in C++ to implement the Copy Constructor.
5. Write a Program in C++ to implement the Single inheritance.
6. Write a Program in C++ to Create Multiple inheritance.
7. Write a Program in C++ to Create Multilevel Inheritance.
8. Write a Program in C++ to implement the Hybrid Inheritance.
9. Write a Program in C++ to implement the operator overloading.
10. Write a Program in C++ to perform the basic operation of string manipulation.
11. Write a program in C++ to perform the basic operation using virtual function.
12. Write a Program in C++ to implement the Formatting output using manipulators.
13. Write a Program in C++ to implement the Type conversion
14. Write a program in C++ Number manipulation using operator overloading
15. Write a program in C++ for demonstrating the use of **"this"** pointer
16. Write a program in C++ for Processing mark list using binary file

17. Write a program in C++ for Processing mark list using binary file

18. Write a program in C++ Polymorphism and virtual functions.

Book for study

1. Balagurusamy, E. (2013). *Object Oriented Programming with C++***.** McGraw Hill Education (India) Private Limited. New Delhi. Sixth Edition.

2. Mark Allen Weiss, (2013).*Data Structures and Algorithm Analysis in C++*. Fourth Edition.Pearson Publications.

Books for Reference

1. Alok Kumar Jagadev, Amiya Kumar Rath & Satchidananda Dehuri. (2007). *Object-Oriented Programming Using C++*. Prentice-Hall of India Private Limited. New Delhi.
2. Ashok Kamthane,.N.(2006). *Object Oriented Programming with ANSI & Turbo C++*. Pearson Education.
3. John Hubbard, R. (2007). *Programming with C++* . Tata McGraw Hill Publishing Company Private Limited . New Delhi . Second Edition.
4. Mark Allen Weiss, (2002). *Data Structures and Algorithm Analysis in C* . Second Edition, Pearson Publications.
5. Seymour Lipschutz , (2017). *Data Structures with C.* Mc Grow Hill Publications.

Web Resources / E-Books

1. https://www.tutorialspoint.com/cplusplus/cpp_tutorial.pdf
2. https://www.cplusplus.com/files/tutorial.pdf
3. http://www.lmpt.univ-tours.fr/~volkov/C++.pdf
4. http://freecodecamp.org
5. https://www.dzone.com

Nature of the course

- Developing logic and structured program, organizing data in software development.

Activities to be given

- Implement Programming
- Mini Projects

Activities on Employability Oriented

- Software Development
- Data Analysis

Pedagogy

Record Book writing, Program development and Demonstration, Practical sessions.

Annexure - 13

LESSON PLAN (Total Hours: 75)

Cycle	Course Content	Hrs	Mode of Teaching
I	1. Write a program in C++ to implement the default arguments. 2. Write a program in C++ to implement the Friend Function. 3. Write a Program in C++ to Find the Square value of given two integer in Inline Function. 4. Write a Program in C++ to implement the Copy Constructor.	15	Demo & Practical Session
II	5. Write a Program in C++ to implement the Single inheritance. 6. Write a Program in C++ to Create Multiple inheritance. 7. Write a Program in C++ to Create Multilevel Inheritance. 8. Write a Program in C++ to implement the Hybrid Inheritance.	15	Demo & Practical Session
III	9. Write a Program in C++ to implement the operator overloading. 10. Write a Program in C++ to perform the basic operation of string manipulation. 11. Write a program in C++ to perform the basic operation using virtual function.	15	Demo & Practical Session
IV	12. Write a Program in C++ to implement the Formatting output using manipulators. 13. Write a Program in C++ to implement the Type conversion 14.Write a program in C++ Number manipulation using operator overloading.	15	Demo & Practical Session
V	15. Write a program in C++ for demonstrating the use of **"this"** pointer 16. Write a program in C++ for Processing mark list using binary file 18. Write a program in C++ Polymorphism and virtual functions.	15	Demo & Practical Session

Course Designer

Mrs. R.Boomadevi

Mrs. R.Lakshmi

Annexure - 13

DEPARTMENT OF INFORMATION TECHNOLOGY					Class: I B.Sc.			
Sem.	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/ Week**	**CIA**	**SE**	**Total**
I	**Generic Elective Course I**	**22OUITGEIT1**	**Digital Principles and Applications**	**5**	**5**	**25**	**75**	**100**

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✓		

Course Objectives

1. To gain knowledge of digital logic design including basic and universal Gates.
2. To design and analysis of digital electronic circuits, Boolean algebra and multi-variable Karnaugh map methods.
3. To study the small-scale combinational and sequential digital circuits.
4. To prepares time flow chart, logic symbol and truth table of RS, JK, and D type flip- Flops.
5. To categorize asynchronous and synchronous counters and register.

Course Content

Unit – I Number systems & Discrete logic: why binary – binary to decimal – decimal to binary – octal-hexadecimal – ASCII Code – Excess 3 code – Gray code- transistor invertors – OR gates-AND gates- Boolean algebra-NOR gates-NAND gates.

Unit – II Circuit analysis & design: Boolean law & theorems-sum of products method – K map truth tables-pairs , quads, octets –K map simplifications-don't care-product of sum method , sum of product simplifications.

Unit – III Data processing & arithmetic circuits: Multiplexers – De multiplexers – 1 of 16 decoders –BCD-to decimal decoders –7segment decoders – encoders – exclusive OR gates – binary addition –binary subtraction , 2's &1's complement representation –complement arithmetic –arithmetic building blocks.

Unit – IV Flip-flops , clocks &timers: RS Flip flop – D flip flop-JK flip-flop-JK Master slave Flip flop –Schmitt trigger –555timer Astable –555 timer Mono stable –555 timer Schmitt trigger.

Unit – V Shift Registers & Counters : Types of register – serial in serial out – Parallel in – serial out-parallel in parallel out – Ring counter – Ripple counter – synchronous counter – mod counter.

Book for Study

Donald, P., Leach, Albert Paul Malvino & Gautam Sahi. (2011). *Digital principles and Applications*. Tata McGraw Hill Education Private Limited. New Delhi, 7th Edition.

Chapters:

Unit I – Chapter (2.1 to 2.3 & 5.1 to 5.8)

Unit II – Chapter (3.1 to 3.8)

Unit III – Chapter (4.1 to 4.7)

Unit IV – Chapter (7.1 to 7.5 & 8.1,8.3,8.6 to 8.8)

Unit V – Chapter (9.1 to 9.5 & 10.1,10.3,10.6)

Books for Reference

1. Charles RothJr, H. (2005). *Fundamentals of Logic Design*. Thomson Brooks/COLE. 5thEdition.
2. Floyd & Jain. (2007). *Digital Fundamentals*. Pearson Education. New Delhi. 8th edition.
3. Moris Mano, M. (2005). *Digital Design*. Pearson Education. 3rd Edition. New Delhi.
4. Salivahanan. S & Arivazhagan. S.(2011). *Digital Circuits and Design*. Vikas Publishing House Ltd. Second edition. New Delhi.
5. Thomas C. Bartee. (2005). *Digital Computer Fundamentals.* McGraw Hill International Edition. 6th Edition.

Web Resources / E-Books

1. https://soaneemrana.org/onewebmedia/DIGITAL%20PRINCIPLES%20AND%20APPLICATION%20BY%20LEACH%20&%20MALVINO.pdfhttps://doc.lagout.org/electronics/Digital%20Systems%20Principles%20And%20Applications%20%20%5Bby%20Ronald%20Tocci%5D.pdf
2. https://www.shahucollegelatur.org.in/Department/Studymaterial/sci/it/BCA/FY/digielec.pdf
3. https://archive.org/details/digitalprinciple0000malv_e7v0/page/n7/mode/2up

4. https://soaneemrana.org/onewebmedia/DIGITAL%20PRINCIPLES%20AND%20APPLICATION%20BY%20LEACH%20&%20MALVINO.pdf
5. https://doc.lagout.org/electronics/Digital%20Systems%20Principles%20And%20Applications%20%20%5Bby%20Ronald%20Tocci%5D.pdf

Pedagogy

Power point Presentations, Seminar, Quiz, Assignment, video material and Brain storming.

Activities to be given

- Group Discussion
- Quiz
- Seminar

Course Learning Outcomes (CLOs)

Upon successful completion of the Course, the students will be able to

S.**No.**	**Course Outcome**	**Knowledge Level(According to Bloom's Taxonomy)**
CLO 1	Understand the fundamental concepts of basic and universal gates, number systems, binary coded systems, basic components of combinational and sequential circuits.	K1 to K3
CLO 2	Explain the Boolean law & theorems-sum of products method, K-Map	K1 to K3
CLO 3	Develop the Data processing & arithmetic circuits.	K1 to K4
CLO 4	Describe the concept of Flip flops and Timers.	K1 to K3
CLO 5	Apply the concepts of Registers and Counters.	K1 to K4

K1- Remembering facts with specific answers
K2- Basic understanding of facts.
K3- Application oriented
K4- Analyzing, examining and making presentations with evidences

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CLO1	2	3	1	2	3	2
CLO2	3	3	2	3	3	2
CLO3	3	3	1	2	2	1
CLO4	3	2	2	1	1	2
CLO5	3	3	1	2	3	1

1-Basic Level 2- Intermediate Level 3- Advanced Level

Annexure - 13

LESSON PLAN: (Total Hours: 75)

Unit	Course Content	Hrs	Mode
I	**Number systems & Discrete logic**: why binary – binary to decimal – decimal to binary – octal-hexadecimal – ASCII Code – Excess 3 code – Gray code Transistor invertors – OR gates-AND gates- Boolean algebra-NOR gates-NAND gates.	15	Chalk & Talk, PPT
II	**Circuit analysis & design**: Boolean law & theorems-sum of products method – K map truth tables-pairs , quads, octets K map simplifications-don't care-product of sum method , sum of product simplifications.	15	Chalk & Talk, Spot test, Exercise, Assignment, PPT, Video material.
III	**Data processing & arithmetic circuits**: Multiplexers – Demultiplexers – 1 of 16 decoders –BCD-to decimal decoders – 7segment decoders – encoders – exclusive OR gates Binary addition –binary subtraction , 2's &1's complement representation –complement arithmetic –arithmetic building blocks.	15	Chalk & Talk, Exercise, PPT, video material
IV	**Flip-flops , clocks &timers**: RS Flip flop – D flip flop-JK flip-flop-JK Master slave Flip flop Schmitt trigger –555timer A stable –555 timer Mono stable –555 timer Schmitt trigger.	15	Chalk & Talk, Exercise, Assignment, video material, Group Discussion
V	**Shift Registers & Counters** : Types of register – serial in serial out – Parallel in –serial out-parallel in parallel out Ring counter – Ripple counter – synchronous counter – mod counter.	15	Quiz, Chalk & Talk, Exercise , Spot test, Assignment, Seminar

Course Designer
Mrs. G.Amudha

Annexure - 13

DEPARTMENT OF INFORMATION TECHNOLOGY					Class: I B.Sc.			
Sem.	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/ Week**	**CIA**	**SE**	**Total**
I	**Skill Enhancement Course**	**22OUITSE1P**	**HTML and Office Automation Lab**	**2**	**2**	**40**	**60**	**100**

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	Entrepreneurship oriented
✔	✔	

Course Objectives

1. To create a table, graphics and link within a web page.
2. To review and apply formatting techniques to produce professional documents.
3. To determine layout to achieve desired formatting and calculations for accurate workbook design.
4. To determine and develop presentation content to create presentation slides by entering text, data and graphics.
5. To create and design the relational database using given data.

Course Content

HTML:

1. a. Write HTML code to develop a web page having the background in red and body My First Page" in any other color.

b. Create a HTML document giving details of your name, age, telephone, address, roll no. using align tag.

c. Write HTML code to design a page containing a text in a paragraph give suitable heading style.

d. Design a page having background color given text color red and using all the attributes of font tab.

2. a. Write HTML code to create a WebPages that contains an Image at its center.

b .Create a web Page using href tag having the attribute alink, vlink.

c. Write a HTML code to create a web page of pink color and display moving message in red color.

3. a. Create a web page, showing an ordered list of name of your five friends.

b. Create a HTML document containing a nested list showing the content page of any book c. Create a web page, showing an unordered list of name of fruits

4. Write HTML code to create a web page that displays your class time table.

5. Create a web page with Table using Frame concept.

6. Design an application form using all input types.

MS Word:

1. Open a word document to prepare your "RESUME" by performing the following operations.

   Formatting the test, alignment and font style.

   Page setup(margin, alignment, page height and width).

2. Create a word document to prepare an application form for college.

3. Create a student mark sheet using table, find out the total and average marks and display the result.

4. Design an invitation of your course inauguration function using different fonts, font sizes, bullets and word art/ clip art.

   - Mail merge Prepare a business letter for more than one company using mail merge.
   - Prepare an invitation and to be sent to specify address in the data source.

MS Excel

6. Create a suitable worksheet with necessary information and use data sort to display the results. Also use data filters to answer at least five different criteria.

7. Create a suitable worksheet with necessary information and make out a suitable chart showing gridlines, legends and titles for axes.

8. Prepare salary bill in a worksheet showing Basic pay, DA, HRA, Gross salary, PF, Tax and Net Salary using suitable Excel functions.

9. Create, display and interact with the data using pivot tables and pivot charts of Excel features.

MS PowerPoint

10. Create a presentation to explain various aspects of your college using auto play

11. Create a presentation to explain the sales performance of a company over a period of five years. Include slides covering the profile of the company, year wise sales and graph with gridlines, legends and title for axes. Use clipart and animation features.

12. Create a presentation from various design templates
13. Prepare a presentation using auto content wizard and your content to auto content wizard.
14. Create a presentation with the audio and video effect.

MS Access

15. Create a "Student details" table for storing marks of N students. The fields of the table are:

    Reg.no., name, mark1, mark2, mark3 , assignment mark, seminar mark. Set the following constrains in the table.

- Set primary key in the Reg.no. field
- Assignment marks should be of maximum 5
- Seminar marks should be of maximum 10

16. Create a query for calculating total and average marks in the student table
17. Create a "Book Details" table with the fields book name, author name, price, name of the

    publisher, year of publication. Prepare the following queries by using this table:

- use "like" function to filter the author names beginning with the letter 'A'
- list those books which are published after the year 2010.
- Make a new table with the fields author name and book name.

Book for study

1. Dinesh Maidasani.(2000). *MS Office 2000.* Firewall media. New Delhi.1st Edition.
2. John Duckett.(2010). *Beginning HTML, XHTML, CSS, and JavaScript* .Wiley India.
3. Kogent. (2010). *HTML 5 in simple steps.* Dreamtech Learning Solutions Inc Press.
4. Kogent. (2010). *Learning Web Technologies: HTML, Javascript.* Wiley India.

Books for Reference

1. NellaiKannan, C. (2012). *MS Office.* NellaiKannan Publication. Chennai. 5thEdition.
2. Paul McFedries. (2007). *MS office 2000.* Kanak Enterprises pressup. NewDelhi. 2nd Edition.
3. Pouncey, Richard York. (2016). *Beginning CSS: Cascading Style Sheets for Web Design*. Wiley India.
4. Ramesh Benjamin. (2005). *Ms Office.* Vikas Publishing House Pvt. Ltd. Chennai. 2nd Edition.

5. Sanjay Saxena.(2009). *MS Office 2000*. Vikas Publishing House Pvt. Ltd. Chennai. 4th Edition.
6. Stephen Cope stake. (2004). *Excel 2003*. Dreamtech Press. New Delhi. 2nd Edition.

Web Resources / E-Book

1. https://www.w3schools.com/html/
2. https://www.w3schools.com/html/html_intro.asp
3. https://www.tutorialspoint.com/html/index.htm
4. https://www.teachucomp.com/courses/html/html-tutorial/
5. https://en.wikipedia.org
6. https://bosslinux.in/sites/default/files/BOSS4.0-Usermanual.pdf (For EduBOSS3.0)
7. https://wiki.openoffice.org/wiki/Documentation
8. http://windows.microsoft.com/en-in/windows/windows-basics-all-topics

Nature of the course

- Developing logic and structured program, organizing data in software development.

Activities to be given

- Implement Programming
- Mini Projects

Activities on Employability Oriented

- Software Development
- Data Analysis

Pedagogy

Record Book writing, Program development and Demonstration, Practical sessions.

Annexure - 13

LESSON PLAN (Total Hours : 30)

Cycle	Course Content	Hrs	Mode of Teaching
I	**HTML:** 1. a. Write HTML code to develop a web page having the background in red and body My First Page" in any other color. b. Create a HTML document giving details of your name, age, telephone, address, roll no. using align tag. c. Write HTML code to design a page containing a text in a paragraph give suitable heading style. d. Design a page having background color given text color red and using all the attributes of font tab. 2. a. Write HTML code to create a WebPage that contains an Image at its center. b .Create a web Page using href tag having the attribute alink, vlink. c. Write a HTML code to create a web page of pink color and display moving message in red color. 3. a. Create a web page, showing an ordered list of name of your five friends. b. Create a HTML document containing a nested list showing the content page of any book c. Create a web page, showing an unordered list of name of fruits 4. Write HTML code to create a web page that displays your class time table. 5. Create a web page with Table using Frame concept. 6. Design an application form using all input types.	6	Demo & Practical Session
II	**MS Word:** 5. Open a word document to prepare your "RESUME" by performing the following operations. Formatting the test, alignment and font style. Page setup(margin, alignment, page height and width). 6. Create a word document to prepare an application form for college. 7. Create a student mark sheet using table, find out the total and average marks and display the result. 8. Design an invitation of your course inauguration function using different fonts, font sizes, bullets and word art/ clip art. 9. Mail merge	6	Demo & Practical Session

	Prepare a business letter for more than one company using mail merge. Prepare an invitation and to be sent to specify address in the data source.		
III	**MS Excel** 8. Create a suitable worksheet with necessary information and use data sort to display the results. Also use data filters to answer at least five different criteria. 9. Create a suitable worksheet with necessary information and make out a suitable chart showing gridlines, legends and titles for axes. 8. Prepare salary bill in a worksheet showing Basic pay, DA, HRA, Gross salary, PF, Tax and Net Salary using suitable Excel functions. 9. Create, display and interact with the data using pivot tables and pivot charts of Excel features.	6	Demo & Practical Session
IV	**MS PowerPoint** 15. Create a presentation to explain various aspects of your college using auto play 16. Create a presentation to explain the sales performance of a company over a period of five years. Include slides covering the profile of the company, year wise sales and graph with gridlines, legends and title for axes. Use clipart and animation features. 17. Create a presentation from various design templates 18. Prepare a presentation using auto content wizard and your content to auto content wizard. 19. Create a presentation with the audio and video effect.	6	Demo & Practical Session
V	**MS Access** 18. Create a "Student details" table for storing marks of N students. The fields of the table are: Reg.no, name, mark1, mark2, mark3 , assignment mark, seminar mark. Set the following constrains in the table. i) Set primary key in the Reg.no. field ii)Assignment marks should be of maximum 5 iii) Seminar marks should be of maximum 10 19. Create a query for calculating total and average marks in the student table	6	Demo & Practical Session

	20. Create a “Book Details” table with the fields book name, author name, price, name of the publisher, year of publication. Prepare the following queries by using this table: i) use “like” function to filter the author names beginning with the letter ’A’ ii) list those books which are published after the year 2010. iii) Make a new table with the fields author name and book name.		

Course Designer

Mrs.S.Sumathi

Annexure - 13

DEPARTMENT OF INFORMATION TECHNOLOGY					Class: I UG			
Sem.	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/ Week**	**CIA**	**SE**	**Total**
I	**Inter Disciplinary Course**	**22OUITID1**	**Windows Tools and Applications**	**2**	**2**	**25**	**75**	**100**

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✔		

Course Objectives

1. To introduce tools and features to edit and view a text document.
2. To perform basic editing functions, formatting text, copy and moving objects and text.
3. To learn the use and utility of functions and formulas on excel spreadsheet.
4. To create slide presentations that includes text, graphics, animation, and transitions.
5. To add special effects to slide transitions to spice up your presentations.

Course Content

Unit – I MS - Word: About MS-Word 2000 – **File Menu:** New – Open – Close – Save – Save as a Web page – Page setup – Print – **Edit Menu:** Editing Text – Selecting Text – Undo Typing – Redo Typing – Cut – Deleting text – Copy – Paste – Paste as Hyperlink – Select all – Find and Replace – **View Menu:** Normal View – Web Layout – Print Layout – Ruler – Document map – Header and Footer – Full Screen – **Insert Menu:** Break – Page Number – Date & Time – Auto Text – Field – Symbol – Footnote & End note – Caption – Cross-reference – Index & Tables – Picture – Textbox –Hyperlink.

Unit – II MS-Word: Format menu: Font – Paragraph – Bullets & Numbering – Borders & Shading – Theme – Frames Auto Format – Style – **Tool Menu:** Spelling & Grammar – Language – Word Count – Auto Summarize – Track Changes – Merge Documents – Protect Documents – Online Collaboration – Mail Merge – **Table Menu:** Draw Table – Insert Table – Delete – Select – Merge Cells – Split Cells – Split Table – Table Auto Format.

Unit – III MS-EXCEL: About Excel : Starting Excel – Navigating Worksheets – Opening a New Work Book – Entering Data, Text, Numbers , Dates & Times, Formulas – Entering labels and data – Excel Functions – Creating text, Numbers & date Series – Undo & redo – Saving

Workbooks – Editing Worksheet – clearing a cell – Copying data – Moving Data – Inserting rows, columns and cell ranges – Deleting rows, columns and cell ranges – Headers and Footers – Find and Replace – **Formatting Worksheets:** Numeric Formatting – Custom Formatting – Date & Time Formats – Alignment – Wrap Text – Merge Cells – Orientation – Font – Borders – Patterns – Changing row Height – Sheet – **Charts:** Creating a chart – Save & Print a Chart – Save & Printing Worksheets.

Unit – IV Microsoft PowerPoint: About Power Point: Starting Power Point – Creating a presentation using Auto content Wizard – Creating a Design template – Creating a Blank presentation – Opening an existing presentation – Saving and Closing presentation – Existing Power Point – View, Insert & Edit in Presentation: Using Master – Inserting and Deleting Slides – Viewing a presentation – Entering, Editing, Inserting, Deleting, Moving and Copying text – Inserting text in bulleted list text place holders – **Formatting in Presentations:** Changing the case of the text – Check Spell – Formatting text – Alignment – Line Spacing – Back ground – Colors & Lines – Header and Footer.

Unit – V Microsoft PowerPoint: Inserting Pictures: Inserting Clip art Pictures – Auto shaped feature to add object – Adding movies & sounds – Organization Chart – Word Art – Inserting Table, Chart and Object – **Slid Show in Presentations:** Presentation with group of Slide – View Show – Rehearse Timings – Record Narration – Setup Show for Self-running presentation – Preset & Custom Animation – Slide Transition – Hide Slide – Action Buttons – Custom Shows – Printing a presentation.

Book for Study

Nellai Kannan, C.(2012). *MS Office.* Nels Publications. Chennai. 5th Edition.

Chapters:

Unit I	:	Chapter 1 – 4 (Word)
Unit II	:	Chapter 5 – 7 (Word)
Unit III	:	Chapter 1 – 3 (Excel)
Unit IV	:	Chapter 1 – 2 (PowerPoint)
Unit V	:	Chapter 4 – 5 (PowerPoint)

Books for Reference

1. Dinesh Maidasani.(2003). *MS Office 2000*. Firewall media. New Delhi.1st Edition.
2. Paul McFedries. (2007) .*MS office 2000*. Kanak Enterprises pressup.NewDelhi.2nd Edition .

3. Ramesh Benjamin,(2005). *Ms Office*. Vikas Publishing House Pvt. Ltd. Chennai. 2nd Edition.
4. Sanjay Saxena.(2009). *MS Office 2000*.Vikas publishing house Pvt.Ltd. hennai .
5. 4th Edition.
6. Stephen Cope stake,(2004). *Excel 2003*. Dreamtech Press. NewDelhi. 2nd Edition.

Web Resources / E-Books

1. https://www.gacbe.ac.in/pdf/ematerial/18BCS5EL-U5.pdf
2. https://www.tutorialspoint.com/word/word_tutorial.pdf
3. https://en.wikipedia.org
4. https://bosslinux.in/sites/default/files/BOSS4.0-Usermanual.pdf (For EduBOSS3.0)
5. https://wiki.openoffice.org/wiki/Documentation
6. http://windows.microsoft.com/en-in/windows/windows-basics-all-topics

Pedagogy

Chalk and talk, Materials, PPT, Assignment, Seminar, Problem solving, Group discussion, Interaction and Demonstration.

Course Learning Outcomes

S. No.	Course Outcome	Knowledge Level
CLO1	Learn and Understand MS Word tools and features.	K1 to K3
CLO2	Learn the formatting work on paragraphs, tables and pages in an organized manner.	K1 to K3
CLO3	Working knowledge of organizing and displaying large amounts and complex data.	K1 to K3
CLO4	Create slide presentations that include text, graphics, animation and transitions.	K1 to K3
CLO5	Analyzing formatting techniques and presentation styles.	K1 to K3

K1- Remembering facts with specific answers
K2- Basic understanding of facts.
K3- Application oriented

Annexure - 13

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs) (SCIENCE)

CLOs / POs	PO1	PO2	PO3	PO4	PO5	PO6
CLO 1	2	2	2	2	2	1
CLO 2	2	2	3	2	3	2
CLO 3	2	2	3	2	3	2
CLO 4	2	2	3	2	3	3
CLO 5	2	2	3	2	2	2

1-Basic Level 2- Intermediate Level 3- Advanced Level

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs) (ARTS)

CLOs / POs	PO1	PO2	PO3	PO4	PO5	PO6
CLO 1	1	2	1	2	1	1
CLO 2	2	1	2	2	2	2
CLO 3	2	1	3	2	1	2
CLO 4	2	1	2	2	1	3
CLO 5	2	2	2	2	1	2

1-Basic Level 2- Intermediate Level 3- Advanced Level

LESSON PLAN (Total Hours : 30)

Unit	Course Content	Hours	Mode of Teaching
I	**MS - Word:** About MS-Word 2000 – **File Menu:** New – Open – Close – Save – Save as a Web page – Page setup – Print – **Edit Menu:** Editing Text – Selecting Text – Undo Typing – Redo Typing – Cut – Deleting text – Copy – Paste – Paste as Hyperlink – Select all – Find and Replace – **View Menu:** Normal View – Web Layout – Print Layout – Ruler – Document map – Header and Footer – Full Screen – **Insert Menu:** Break – Page Number – Date & Time – Auto Text – Field – Symbol – Footnote & End note – Caption – Cross-reference – Index & Tables – Picture – Textbox –Hyperlink.	**6**	Lecture, GD
II	**MS-Word: Format menu:** Font – Paragraph – Bullets & Numbering – Borders & Shading – Theme – Frames Auto Format – Style – **Tool Menu:** Spelling & Grammar – Language – Word Count – Auto Summarize – Track Changes – Merge Documents – Protect Documents – Online Collaboration – Mail Merge – **Table Menu:** Draw Table – Insert Table – Delete – Select – Merge Cells – Split Cells – Split Table – Table Auto Format.	**6**	Lecture, PPT
III	**MS-EXCEL: About Excel :** Starting Excel – Navigating Worksheets – Opening a New Work Book – Entering Data, Text, Numbers , Dates & Times, Formulas – Entering labels and data – Excel Functions – Creating text, Numbers & date Series – Undo & redo – Saving Workbooks – Editing Worksheet – clearing a cell – Copying data – Moving Data – Inserting rows, columns and cell ranges – Deleting rows, columns and cell ranges – Headers and Footers – Find and Replace – **Formatting Worksheets:** Numeric Formatting – Custom Formatting – Date & Time Formats – Alignment – Wrap Text – Merge Cells – Orientation – Font – Borders – Patterns – Changing row Height – Sheet – **Charts:** Creating a chart – Save & Print a Chart – Save & Printing Worksheets.	**6**	Lecture, PPT

IV	**Microsoft PowerPoint: About Power Point:** Starting Power Point – Creating a presentation using Auto content Wizard – Creating a Design template – Creating a Blank presentation – Opening an existing presentation – Saving and Closing presentation – Existing Power Point – View, Insert & Edit in Presentation: Using Master – Inserting and Deleting Slides – Viewing a presentation – Entering, Editing, Inserting, Deleting, Moving and Copying text – Inserting text in bulleted list text place holders – **Formatting in Presentations:** Changing the case of the text – Check Spell – Formatting text – Alignment – Line Spacing – Back ground – Colors & Lines – Header and Footer.	**6**	Lecture, PPT
V	**Microsoft PowerPoint: Inserting Pictures:** Inserting Clip art Pictures – Auto shaped feature to add object – Adding movies & sounds – Organization Chart – Word Art – Inserting Table, Chart and Object – **Slid Show in Presentations:** Presentation with group of Slide – View Show – Rehearse Timings – Record Narration – Setup Show for Self-running presentation – Preset & Custom Animation – Slide Transition – Hide Slide – Action Buttons – Custom Shows – Printing a presentation.	**6**	Lecture, GD, Assignment

Course Designer
Mrs. R.Rajasangeetha

Annexure - 13

DEPARTMENT OF INFORMATION TECHNOLOGY					Class: I B.Sc.			
Sem.	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/ Week**	**CIA**	**SE**	**Total**
II	**Core**	**22OUIT21**	**Operating System**	**4**	**4**	**25**	**75**	**100**

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✔		

Course Objectives

1. To enhance an overview of the various types of computing environments.
2. To identify CPU scheduling and basis of multi programmed operating system.
3. To gain knowledge on the description of deadlocks, sets of concurrent processes from completing their tasks.
4. To comprehend on main memory and secondary memory Management techniques.
5. To create awareness on the file system design tradeoffs including access methods, file sharing, file locking and directory structures.

Course Content:

Unit – I Introduction: What is an Operating System – Mainframe Systems – Desktop Systems – Multiprocessor Systems – Distributed Systems – Real Time Systems.

Unit – II Process Management: Process Concept – Process Scheduling – Operations on Processes – Cooperating Processes – Inter process Communication - Scheduling Algorithms - Threads: Overview – Multithreading models.

Unit – III Deadlocks: System model – Deadlock Characterization – Methods for handling Deadlocks – Deadlock Prevention – Deadlock Avoidance – Deadlock Detection – Recovery from Deadlock.

Unit – IV Memory Management: Background – Swapping – Contiguous Memory Allocation – Paging Segmentation - Segmentation with Paging. Virtual Memory: Background – Demand Paging – Process Creation – Page Replacement.

Unit – V File-System Interface: File Concept – Access Methods – Directory structure – File-System Mounting – File Sharing – Protection.

Book for Study

Silberschatz, Galvin, Gagne, *Operating System Concepts*, John Wiley & Sons, Inc., VI Edition.

Chapters:

Unit I	-	Chapter 1
Unit II	-	Chapter 4, 5
Unit III	-	Chapter 8
Unit IV	-	Chapter 9, 10
Unit V	-	Chapter 11

Books for Reference

1. Charles Crowley. (2009). Operating system. A Design Oriented Approach. McGraw Hill Education.
2. Deital, H.M. (2003). *Operating System.* Pearson Education. 11th Edition .
3. Milon MilenKovic. (1997). Operating Systems Concepts And Design. Tata Mc Graw-Hill. New Delhi. 2nd Edition.
4. Pramod Chandra, P.Bhatt.(2007). *An Introduction to Operating Systems.* PHI.
5. William Stallings.(2008). *Operating Systems Internals and Design Principles*. PHI.

Web Resources / E-Books

1. https://www.crectirypati.com/sites/default/files/lectur_notes/OpertingSystemsLectureNotes.pdf
2. http://www2.cs.uic.edu/~jbell/CourseNotes/OperatingSystems
3. http://www.smartzworld.com/notes/linux-programming-pdf-lp-pdf-notes/
4. http://www.cs.put.poznan.pl/akobusinska/downloads/Operating_Systems_Concepts.pdf
5. http://web.cse.ohio-state.edu/ ~soundarajan.1/ courses/3430/silberschatz8thedition.pdf
6. http://edclap.com/pluginfile.php/13305/mod_resource/content/1/OS%20Book%20Galvin.pdf

Pedagogy

Chalk and talk Materials, PPT, Assignment, Seminar, Problem solving, Group discussion, Interaction and Demonstration.

Rationale for Nature of the course

- Help accomplish include managing inputs from users, sending output to the output devices, management of storage spaces and control of peripheral devices.

Activities to be given

- Case Studies
- Quiz
- Seminar

Course Learning Outcomes(CLOs):

Upon successful completion of the Course, the students will be able to

No.	Course Outcomes	Knowledge Level(According to Bloom's Taxonomy)
CO 1	Identify the role of Operating System and to understand the design of control unit.	K1 to K3
CO 2	Understanding Process Scheduling and Threads	K1 to K3
CO 3	Identify Deadlock Handling and Deadlock Detection Problems.	K1 to K4
CO 4	Describe the role of paging, segmentation and virtual memory in operating systems.	K1 to K3
CO 5	Illustrate the file system interface, file sharing and protection.	K1 to K4

K1- Remembering facts with specific answers
K2- Basic understanding of facts.
K3- Application oriented
K4- Analyzing, examining and making presentations with evidences

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	2	3	1	2	3	2
CLO2	3	3	2	3	3	2
CLO3	3	3	1	2	2	1
CLO4	3	2	2	1	1	2
CLO5	3	3	1	2	3	1

1-Basic Level 2- Intermediate Level 3- Advanced Level

Annexure - 13

LESSON PLAN: (Total Hours: 60)

Unit	Course Content	Hours	Mode of Teaching
I	**Introduction:** What is an Operating System – Mainframe Systems . Desktop Systems – Multiprocessor Systems – Distributed Systems – Real Time Systems.	12	Chalk & Talk, PPT
II	**Process Management:** Process Concept – Process Scheduling – Operations on Processes – Cooperating Processes. Inter process Communication - Scheduling Algorithms - Threads: Overview – Multithreading models.	12	Chalk & Talk, Spot test, Exercise, Assignment, PPT, Video material.
III	**Deadlocks:** System model – Deadlock Characterization – Methods for handling. Deadlocks – Deadlock Prevention – Deadlock Avoidance – Deadlock Detection – Recovery from Deadlock.	12	Chalk & Talk, Exercise, PPT, video material
IV	**Memory Management:** Background – Swapping – Contiguous Memory Allocation – Paging Segmentation - Segmentation with Paging. Virtual Memory: Background – Demand Paging – Process Creation – Page Replacement.	12	Chalk & Talk, Exercise, Assignment, video material, Group Discussion
V	**File-System Interface:** File Concept – Access Methods – Directory structure. File-System Mounting – File Sharing – Protection.	12	Quiz, Chalk & Talk, Exercise , Spot test, Assignment, Seminar

Course Designer
Mrs.S.Sumathi

Annexure - 13

DEPARTMENT OF INFORMATION TECHNOLOGY					Class: I B.Sc.			
Sem.	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/ Week**	**CIA**	**SE**	**Total**
II	**Core Lab**	**22OUIT2P**	**Linux Programming Lab**	**3**	**5**	**40**	**60**	**100**

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	Entrepreneurship oriented
✔	✔	

Course Objectives

1. To learn the fundamental commands of UNIX Operating System.
2. To gain important aspects related to the Shell Programming Environment.
3. Demonstrate Unix Program using AWK and functions.
4. To know File and Directory Handling Commands.
5. To demonstrate the knowledge of Linux commands and Programs.

Course Content

PROGRAMS LIST:

1. Write a Shell Script that accepts a file name, starting and ending line numbers as arguments and displays all lines between the given line numbers.
2. Write a shell script that deletes all lines containing the specified word in one or more files supplied as arguments to it.
3. Write a shell script that displays a list of all files in the current directory to which the user has read, write and execute permissions.
4. Write a shell script to list all of the directory files in a directory
5. Write a shell script to find factorial of a given number.
6. Write an awk script to count number of lines in a file that does not contain vowels.
7. Write an awk script to count the number of lines in a file that do not contain vowels.
8. Write A Linux Program to Various File and Directory Handling Commands.
9. Write A Linux Program to Arithmetic Calculation.
10. Write A Linux Program to Multiplication Table.
11. Write a awk script to find the number of characters, words andlines in a file.

12.Write A Linux Program Swapping The Number

13.Write A Linux Program System Variables Path, Home.

14.Write A Linux Program Check And List Attributes Of Processes.

15.Write A Linux Program Display List Of Users Currently LoggedIn.

Books for Study

Michael Kerrisk. (2008). *The Linux Programming Interface: A Linux and UNIX System ProgrammingHandbook.* BS Publications. 1st Edition .

Books for Reference

1.Richard Petersen.(2008). *Linux: The Complete Reference.* McGraw-Hill. Sixth Edition.

2.William E. Shotts, Jr.(2013). *The Linux Command Line: A Complete Introduction.* No StarchPress. Second Edition.

3. Sumitabha Das.(2006). *Unix Concept and Application.* Tata McGraw-Hill.Fourth Edition.

4. Syed Mansoor Sarwar & Robert M.Koretsky . (2005). *Unix* . Taylor & Francis Group.3rd Edition.

5. Richard Stevens,W. & Stephen, A.Rago.(2013). *Advanced programming in the Unix*. Addison-Wesley Professional. 3rd Edition.

Web Resources / E-Books

1. http://aryacollegeludhiana.in/E_BOOK/computer/Unix.pdf

2.https://books.google.co.in/books?id=uhgNDgAAQBAJ&pg=PA406&lpg=PA406&dq=u 3. 3. https://doc.lagout.org/operating%20system%20/linux/Linux%20-%20The%20Complete%20Reference.pdf

4. https://wiki.lib.sun.ac.za/images/c/ca/TLCL-13.07.pdf

5. http://index-of.es /OS/ Venkateswarlu%20N.Introducing% 20Linux.Installation %20 and %20Programmin g.BSP.%5BENG,601p.,2008%5D.pdf

Pedagogy

Record Book Writing, Projector Demonstration and Practical sessions.

Nature of the course

- Developing logic and structured program, organizing data in software developmentActivities to be given
- Implement Programming

Activities on Employability Oriented

- Software Development
- Data Analysis

LESSON PLAN (Total Hours: 75)

Cycle	Course Content	Hrs	Mode of Teaching
I	1. Write a Shell Script that accepts a file name, starting and ending line numbers as arguments and displays all lines between the given line numbers. 2. Write a shell script that deletes all lines containing the specified word in one or more files supplied as arguments to it. 3. Write a shell script that displays a list of all files in the current directory to which the user has read, write and execute permissions.	15	Demo & Practical Session
II	4. Write a shell script to list all of the directory files in a directory 5. Write a shell script to find factorial of a given number. 6. Write an awk script to count number of lines in a file that does not contain vowels.	15	Demo & Practical Session
III	7.Write an awk script to count the number of lines in a file that do not contain vowels. 8.Write A Linux Program to Various File and Directory Handling Commands. 9. Write A Linux Program to Arithmetic Calculation.	15	Demo & Practical Session
IV	10.Write A Linux Program to Multiplication Table. 11.Write a awk script to find the number of characters, words andlines in a file. 12.Write A Linux Program Swapping The Number	15	Demo & Practical Session
V	13. Write A Linux Program System Variables Path, Home. 14.Write A Linux Program Check And List Attributes Of Processes. 15.Write A Linux Program Display List Of Users Currently LoggedIn.	15	Demo & Practical Session

Course Designer

Mrs. R.Boomadevi

Mrs.G.Amudha

Annexure - 13

DEPARTMENT OF INFORMATION TECHNOLOGY					Class: I B.Sc.			
Sem.	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/ Week**	**CIA**	**SE**	**Total**
II	**Generic Elective Course II**	**22OUITGEMA2**	**Resource Management Techniques**	**5**	**5**	**25**	**75**	**100**

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✔		

Course Objectives:

1. To define and formulate linear programming problems and appreciate their limitations.
2. To solve optimization problems and Graphical method for LPP.
3. To introduce the students to the use of basic methodology for the solution of simplex, two- phase and Big-M-Method.
4. To expose them to various tools, techniques and methods available for decision making.
5. To determine the optimal solution for assignment problems.

Course Content

Unit – I Operation Research: The nature and meaning of OR-Management Applications of OR-General methods for solving OR models - Main characteristics of OR-Main Phases of OR - Scope of OR-Role of Computers in OR.

Unit – II Linear Programming and its Applications: Formulation of LP Problems – Graphical Solution of properly behaved LP Problem – General Formulation of LPP-Slack and Surplus Variables.

Unit – III Simplex Method : Computational Procedure of Simplex Method - Artificial Variable Technique - Two phase method – Big-M-Method.

Unit – IV Transportation Problems: Mathematical Formulation – Initial Basic Feasible Solution to Transportation Problem - Methods for initial Basic Feasible Solution.

Unit – V Assignment Models: Mathematical Formulation of Assignment Problem – Hungarian Method for Assignment Problem- Assignment Algorithm- A rule to draw minimum number of Lines- Unbalanced assignment Problem- The Maximal assignment Problem- Restriction on Assignment Problem.

Book for Study:

1. Sharma,S.D. (2012). *Operations Research.* Kedar nath Ram nath & Co. India. Sixteenth Edition.

Chapters:

Unit I : Chapter 2.2,2.3,2.7,2.9,2.10,2.11,2.15.

Unit II : Chapter 3.1,3.20,3.31.

Unit III : Chapter 5.23,5.33,5.37.

Unit IV : Chapter 15.1,15.7,15.43.

Unit V : Chapter 16.1,16.3,16.6,16.18,16.22,16.27.

Reference Books:

1. Hamdy A.Taha.(2008). *Operations Research An Introduction.* PHI Learning Private Limited. New Delhi. Eighth Edition.
2. KandiSwapur, Gupta, P.K. & Man Mohan. (2011). *Operations Research.* Sultan Chand & Sons. New Delhi. Fifteenth Thoroughly Revised Edition.
3. Kapoor, V.K.(2003). *Operations Research.* SultanChan & Sons. New Delhi. 17th Edition.
4. Man Mohan.(2004). *Problems in Operation Research.* Sultan Publishers. New Delhi. 10th Edition.
5. Natarajan, A.M., Balasubramani,P. &Tamilarasi,A.(2008). *Operations Research.* Baba BarkhaNath Printers . India. Third Impression.
6. Nita H.Shah. Ravi,M.Goal & HardikSoni.(2009).*Operations Research.* PHI Learning Private Limited. New Delhi. Third Edition.

Web References:

1. https://www.bbau.ac.in/dept/UIET/EMER-601%20Operation%20Research%20Queuing%20theory.pdf
2. http://www.jiwaji.edu/pdf/ecourse/political_science/MBA%20FA%20204%20Queuing_Theory-converted.pdf
3. https://ebooks.lpude.in/commerce/bcom/term_5/DCOM303_DMGT504_OPERATION_RESEARCH.pdf
4. http://www2.informs.org/Resources/
5. http://www.ieor.columbia.edu/
6. http://www.universalteacherpublications.com/univ/ebooks/or/Ch1/origin.htm

Pedagogy:

Power point Presentations, Seminar, Quiz, Assignment, video material and Brain storming.

Activities on Knowledge and Skill

- Group Discussion
- Quiz
- Seminar

Course Learning Outcomes (CLOs):

Upon successful completion of the Course, the students will be able to

No.	Course Outcomes	PSO Addressed	Knowledge Level(According to Bloom's Taxonomy)
CLO 1	Find the concepts and importance of Operations Research	PSO1	K1 to K3
CLO 2	Identify the application of OR and frame a LP Problem with solution	PSO2	K1 to K3
CLO 3	Determine the workings of the simplex method for linear programming	PSO3	K1 to K4
CLO 4	Solve specialized linear programming problems like the transportation Problems	PSO2 & PSO4	K1 to K3
CLO 5	Be able to build and solve Assignment problems using appropriate method	PSO3 & PSO5	K1 to K4

K1- Remembering facts with specific answers
K2- Basic understanding of facts.
K3- Application oriented
K4- Analyzing, examining and making presentations with evidences

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	2	3	1	2	3	2
CLO2	3	3	2	3	3	2
CLO3	3	3	1	2	2	1
CLO4	3	2	2	1	1	2
CLO5	3	3	1	2	3	1

1-Basic Level 2- Intermediate Level 3- Advanced Level

Annexure - 13

LESSON PLAN (Total Hours: 75)

Unit	Course Content	Hrs	Mode of Teaching
I	**Operation Research:** The nature and meaning of OR- Management Applications of OR- General methods for solving OR models - Main characteristics of OR-Main Phases of OR - Scope of OR-Role of Computers in OR.	15	Chalk & Talk, PPT
II	**Linear Programming and its Applications:** Formulation of LP Problems – Graphical Solution of properly behaved LP Problem – General Formulation of LPP-Slack and Surplus Variables.	15	Chalk & Talk, Spot test, Exercise, Assignment, PPT, Video material.
III	**Simplex Method :** Computational Procedure of Simplex Method - Artificial Variable Technique - Two phase method – Big-M-Method.	15	Chalk & Talk, Exercise, PPT, video material
IV	**Transportation Problems:** Mathematical Formulation – Initial Basic Feasible Solution to Transportation Problem - Methods for initial Basic Feasible Solution.	15	Chalk & Talk, Exercise, Assignment, video material, Group Discussion
V	**Assignment Models:** Mathematical Formulation of Assignment Problem – Hungarian Method for Assignment Problem- Assignment Algorithm- A rule to draw minimum number of Lines- Unbalanced assignment Problem- The Maximal assignment Problem- Restriction on Assignment Problem.	15	Quiz, Chalk & Talk, Exercise , Spot test, Assignment, Seminar

Course Designer
Mrs. G.Amudha

Annexure - 13

DEPARTMENT OF INFORMATION TECHNOLOGY					Class: I B.Sc.			
Sem.	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/ Week**	**CIA**	**SE**	**Total**
II	**Skill Enhancement Course**	**22OUITSE2P**	**Desktop Publishing Lab**	**2**	**2**	**25**	**75**	**100**

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	Entrepreneurship oriented
✔	✔	

Course Objectives

1. To work with various tools, platters and various templates.
2. To learn with various graphics, positioning, logo and page design.
3. To create advertising banner and designs for print media.
4. To create a drawing, set rulers, grid, guidelines, and view document in CorelDraw.
5. To build new shapes and reshaping objects with special effects.

Course Content

Use Adobe PageMaker for

Creating and opening publications, use of toolbox, palettes, text and graphics, templates, saving publications – create a notice for an exhibition.

Use Adobe PageMaker for

Tutorial positioning ruler guides, typing text, formatting graphics, creating columns, creating styles, changing typestyle and alignment, rotating and moving text and graphics, tabs, creating leaders, positioning and resizing logos. – create a tabulated invoice for a company.

Use Adobe PageMaker for

Constructing a publication with the following features: set-up pages, edit master pages, choosing measurement system and setup ruler, alignment, layout, page-numbers, rearrange pages, apply header/footer, import text, thread text blocks, balance columns, edit story, use frames and layers, lock objects, wrap text around graphics, crop graphics.

Use CorelDraw for

a. Creating a drawing, set rulers, grid, guidelines, and view document.

b. Drawing, moving, shaping objects, lines and curves, dimension line, working with style and templates

Use CorelDraw for

a. Grouping/ungrouping, locking/unlocking objects, using layers, aligning and editing objects – pattern/texture fills, editing/applying end shapes, splitting/erasing portions, positioning, moving, stretching, and rotating objects.

b. Formatting text and paragraph, creating and adding blends, envelopes, extrusions, 3D special effects, different formats and layouts, previewing, sizing and printing a job.

Book for study

Shashank Jain & Satish Jain.(2001). *ADOBE PAGEMAKER 6.5*. First Edition. BPB Publications.

Books for Reference

1. Shamms Mortier, R., Rick Wallace, Phil Gaskill, Richard Romano, Carla Rose & Ellen Wixted. (1997). *PAGEMAKER 6.5 COMPLETE*. First Indian Edition . Techmedia.
2. Sharma, M.C. (1997). *DESKTOP PUBLISHING ON PC.* First Edition. BPB Publications.
3. Satish Jain & M. Geetha Iyer (2009). *BPB'S DTP COURSE (DESKTOP PUBLISHING)* . First Edition. BPB Publications.
4. Shashank Jain & Satish Jain.(2002). *ADOBE PAGEMAKER 7.0* . First Indian Edition. BPB Publications.
5. Ted Alspach. (2002). *PAGEMAKER 7 FOR WINDOWS*. First Indian Edition. Techmedia.

Web Resources / E-Books

1. https://helpx.adobe.com/in/indesign/using/creating-book-files.html
2. https://helpx.adobe.com/in/indesign/using/publish-online.html
3. http://dcac.du.ac.in/documents/E-Resource/2020/Metrial/409NehaJingala2.pdf
4. http://product.corel.com/help/CorelDRAW/540229932/Main/EN/User-Guide/CorelDRAW-X7.pdf
5. http://product.corel.com/help/CorelDRAW/540111130/Main/EN/User-Guide/CorelDRAW-2019.pdf
6. https://www.coreldraw.com/en/pages/tutorials/coreldraw/

Nature of the course

- Developing logic and structured program, organizing data in software development.

Activities to be given

- Implement Programming
- Mini Projects

Activities on Employability Oriented

- Software Development
- Data Analysis

Pedagogy

Record Book writing, Program development and Demonstration, Practical sessions.

LESSON PLAN (Total Hours: 30)

Cycle	Course Content	Hrs	Mode of Teaching
I	**Use Adobe PageMaker** for Creating and opening publications, use of toolbox, palettes, text and graphics, templates, saving publications – create a notice for an exhibition.	6	Demo & Practical Session
II	**Use Adobe PageMaker** for Tutorial positioning ruler guides, typing text, formatting graphics, creating columns, creating styles, changing typestyle and alignment, rotating and moving text and graphics, tabs, creating leaders, positioning and resizing logos. – create a tabulated invoice for a company	6	Demo & Practical Session
III	**Use Adobe PageMaker** for Constructing a publication with the following features: set-up pages, edit master pages, choosing measurement system and setup ruler, alignment, layout, page-numbers, rearrange pages, apply header/footer, import text, thread text blocks, balance columns, edit story, use frames and layers, lock objects, wrap text around graphics, crop graphics.	6	Demo & Practical Session
IV	**Use CorelDraw** for a. Creating a drawing, set rulers, grid, guidelines, and view document. b. Drawing, moving, shaping objects, lines and curves, dimension line, working with style and templates	6	Demo & Practical Session

V	**Use CorelDraw** for b. Grouping/ungrouping, locking/unlocking objects, using layers, aligning and editing objects – pattern/texture fills, editing/applying end shapes, splitting/erasing portions, positioning, moving, stretching, and rotating objects c. Formatting text and paragraph, creating and adding blends, envelopes, extrusions, 3D special effects, different formats and layouts, previewing, sizing and printing a job.	6	Demo & Practical Session

Course Designer
Mrs.S.Sumathi

Annexure - 13

EVALUATION (PRACTICAL)

Internal (Formative) : 40 marks
External (Summative) : 60 marks
Total : 100 marks

Question Paper Pattern for Internal Practical Examination: 40 Marks

S.No	Components	Marks
1.	I – Major question	15
2.	II - Minor question	08
3.	III-Spotter (4 x 3)	12
4.	IV –Record book	05
	Total	**40**

Question Paper Pattern for External Practical Examination (Major) : 60 Marks

S.No	Components	Marks
1.	I – Major question	20
2.	II - Minor question	15
3.	III-Spotter (4 x 5)	20
4.	IV –Record book	5
	Total	**60**

In respect of external examinations passing minimum is **35% for Under Graduate Courses** and in total, **aggregate of 40%.**

Latest amendments and revisions as per **UGC** and **TANSCHE** norm is taken into consideration to suit the changing trends in the curriculum.

Annexure - 13

DEPARTMENT OF INFORMATION TECHNOLOGY					Class: I UG			
Sem.	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/ Week**	**CIA**	**SE**	**Total**
II	**Inter Disciplinary Course**	**22OUITID2**	**Introduction to Internet**	**2**	**2**	**25**	**75**	**100**

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	Entrepreneurship oriented
✓	✓	

Course Objectives

1. To describe the important features of the Web and Web browser software.
2. To find information of internet and search Engine
3. To know the concepts of Internet Addressing
4. To learn the various types of internet protocos
5. To communicate through Email with safety tips

Course Content

Unit – I Internet: Introduction – What is Internet – How does Internet Work – Special about the Internet – History of Internet – **World Wide Web:** Introduction – Internet and Web – How the Web Works – History of WWW.

Unit – II Web Browsers and Web Browsing: Web Browsers – Types of Browsers – Web Browsing – **Searching the Web:** Information Sources – Finding Information on the Internet – Searching the Web – Web Directory – Search Engine.

Unit – III Internet Addressing: Introduction – IP Address – Domain Names – Domain Name System – Uniform Resource Locator .

Unit – IV Internet Protocols: Introduction – Transmission Control Protocol / Internet Protocol – File Transfer Protocol – Hypertext Transfer Protocol – Telnet - Gopher

Unit – V Electronic Mail: Introduction – E-Mail Works – Mailing Basics – How private is the E-mail – Spamming – E-Mail Advantages & Disadvantages – E-Mail Safety Tips – Smileys (Emoticons) – Free E-mail Providers – **Websites and Web Pages:** Introduction – Web Design – **Overview of Web Technologies:** Introduction – HTML.

Book for Study

1. Alexis Leon & Mathews Leon.(2012) . *Internet for Every One*. Vikas Publishing House Private Limited. New Delhi. 15th Anniversary Edition.

Chapters:

Unit I	:	Chapter 1, 4
Unit II	:	Chapter 5, 6
Unit III	:	Chapter 8
Unit IV	:	Chapter 9
Unit V	:	Chapter 10, 11(11.1, 11.2), 12(12.1, 12.2)

Reference Books:

1. Alexis Leon & Mathews Leon. (2004). *The Internet for Everyone*. LXL Consultancy Service PVT. Ltd. Chennai. Reprint.
2. Christian Crumlish & Manish Jain.(1999). *The Internet.* BPB Publications. New Delhi.
3. Douglas Comer, E. (2001). *The Internet.* Addison Weslay Longman Pvt. Lt. New Delhi. 3rd Edition.
4. Harley Hahn.(2000). *The Internet Complete Reference*. Tata McGraw Hill Publishing Company Ltd. New Delhi. 2nd Edition. Seventh Reprint.
5. Margaret Levine Young.(2000). *The Complete Reference for Internet.* Tata McGraw Hill Publishing Company Ltd. New Delhi. 2nd Edition.

Web Resources / E-Books

1. https://www.just.edu.jo/~mqais/cis99/PDF/Internet.pdf
2. https://krishgi.files.wordpress.com/2011/05/internet-the-complete-reference.pdf
3. https://download.e-bookshelf.de/download/0003/2235/07/L-G-0003223507-0006029624.pdf
4. https://media.oiipdf.com/pdf/19b4ba43-939e-4982-a608-0eb38e9a9135.pdf
5. https://www.dcpehvpm.org/E-Content/BCA/BCA-II/Web%20Technology/the-complete-reference-html-css-fifth-edition.pdf

Pedagogy

Chalk and talk, Materials, PPT, Assignment, Seminar, Problem solving, Group discussion, Interaction and Demonstration.

Annexure - 13

Course Learning Outcomes

Number	Course outcome	Knowledge Level
CLO1	Recall with basics of the Internet Programming	K1to K3
CLO2	Describe the concept of Web browser and browsing.	K1to K3
CLO3	Organize the concept of IP Address and Domain Names.	K1to K3
CLO4	Understand the various types of Internet Protocols.	K1to K3
CLO5	Outline the knowledge of E-mail, Web page and web sites.	K1to K3

K1- Remembering facts with specific answers
K2- Basic understanding of facts.
K3- Application oriented

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

(SCIENCE)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	2	3	1	2	3	2
CLO2	3	3	2	3	3	2
CLO3	3	3	1	2	2	1
CLO4	3	2	2	1	1	2
CLO5	3	3	1	2	3	1

1-Basic Level 2- Intermediate Level 3- Advanced Level

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

(ARTS)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	1	1	1	2	2	1
CLO2	2	1	2	2	3	2
CLO3	2	1	1	2	2	1
CLO4	2	2	2	1	1	2
CLO5	3	1	1	2	3	1

1-Basic Level 2- Intermediate Level 3- Advanced Level

Annexure - 13

LESSON PLAN (Total Hours: 30)

Unit	Course Content	Hours	Mode of Teaching
I	**Internet:** Introduction – What is Internet – How does Internet Work – Special about the Internet – History of Internet – **World Wide Web:** Introduction – Internet and Web – How the Web Works – History of WWW.	6	Lecture, GD
II	**Web Browsers and Web Browsing:** Web Browsers – Types of Browsers – Web Browsing – **Searching the Web:** Information Sources – Finding Information on the Internet – Searching the Web – Web Directory – Search Engine.	6	Lecture
III	**Internet Addressing:** Introduction – IP Address – Domain Names – Domain Name System – Uniform Resource Locator .	6	Lecture, PPT
IV	**Internet Protocols:** Introduction – Transmission Control Protocol / Internet Protocol – File Transfer Protocol – Hypertext Transfer Protocol – Telnet – Gopher	6	Lecture, PPT
V	**Electronic Mail:** Introduction – E-Mail Works – Mailing Basics – How private is the E-mail – Spamming – E-Mail Advantages & Disadvantages – E-Mail Safety Tips – Smileys (Emoticons) – Free E-mail Providers – **Websites and Web Pages:** Introduction – Web Design – **Overview of Web Technologies:** Introduction – HTML.	6	Lecture, GD, Assignment

Course Designer
Mrs. R.Lakshmi