

Vision, Mission and Quality Policy of the College

VISION :

Kovai Kalaimagal College of Arts & Science shall inspire and guide students to acquire knowledge, develop skill and a positive attitude that will enhance their personality, providing self confidence to face the competitive world.

MISSION:

1. To Strive for excellence in academics.
2. To inculcate a positive attitude and to develop skill in students, to meet the challenges of the competitive world.
3. To develop self -confidence through adequate interaction and relevant exposure.
4. To Promote ethical and social values in the students.
5. To identify and encourage talents in academics and sports by rewarding them with scholarships.

QUALITY POLICY:

“KKCAS shall provide value -based education to its students for continual improvement in their academic performance, enhancing their competency for higher education and employment”.

Vision, Mission and Objectives of the Department

VISION

To evolve as a center of excellence in the field of Computer Applications by developing technically competent professionals with ethical values and sound knowledge to cater to the requirements of the industry.

MISSION

1. To Prepare committed technocrats with adequate knowledge and skills through quality education.
2. To enrich the technical knowledge of the students in diversified areas of Computer Applications.
3. To imbibe new knowledge with technical transformation by collaborating with industry.
4. To produce Computer professionals with all round leadership as outlook for social welfare and a concern for environmental protection.
5. Imparting a quality education through a well designed curriculum in tune with the challenging software needs of the industry.
6. Providing facilities to generate knowledge and develop applications in the thrust areas of Computer Applications.

OBJECTIVES

1. To strive for continuous improvement in the quality of its services
2. To empower the students in technical, soft skills and developments of self confidence so as to enable them to complete for global jobs.
3. To help the faculty to identify their strength and weakness and facilitate for qualitative improvements in teaching.
4. To strengthen the learning resources on ongoing basis to meet the requirements of the curriculum
5. To encourage result and consultancy by innovation in respective fields.

GRADUATE ATTRIBUTES

Our Graduates to possess

1. Communication skills
2. In-depth domain knowledge
3. Technical skills
4. Knowledge Inter-disciplinary in nature
5. Positive attitude
6. Critical thinking and problem solving skills
7. Dynamism and team building skills
8. Professional ethics and social values
9. Self-awareness and emotional intelligence
10. Entrepreneurship qualities
11. Responsibility towards Society and environment
12. Thirst for knowledge through life long learning

Programme Educational Objectives and Programme Outcomes

The Graduates will

1. Possess technical expertise, excel in communication skills and leadership qualities to manage diverse business environment.
2. Employ technical skills to solve societal and environmental issues in an ethical manner.
3. Develop software solutions to problems across a broad range of application domains through analysis and design.
4. Graduates will take up higher education and/or be associated with the field so that they can keep themselves abreast of the latest trends.

Programme Outcomes

- 1. Communication Skills:** Communicate effectively and present technical information lucidly in oral and written reports.
- 2. In-Depth Domain Knowledge:** Acquire adequate knowledge in specified formatting so as to build up capabilities of working programs for solving complex problems.
- 3. Technical Skills:** Develop an ability to select modern computing tools & techniques appropriate to the context & use them with dexterity.
- 4. Knowledge Inter-Disciplinary In Nature:** Acquire adequate knowledge in inter - Disciplinary subjects such as commerce, mathematics & statistics so as to make use of them for understanding complex concepts.
- 5. Positive Attitude:** Designing programmes to develop the self confidence & hence to make the students to think & act positively.
- 6. Critical Thinking And Problem Solving Skills:** Create and design innovative methodologies to solve complex problems for the betterment of the society.
- 7. Dynamism And Team Building Skills-**Function effectively both as a team leader and team member on multi disciplinary projects to demonstrate computing and management skills.
- 8. Professional Ethics And Social Values:** Developing ability to execute a fast with professional ethics without sacrificing the concern for social welfare and environmental protection.

9. Self-Awareness And Emotional Intelligence: Make the students understand their own strengths and weakness & be emotionally balanced at times of crisis.

10. Entrepreneurship Qualities: Apply the skill acquired to become successful entrepreneurs.

11. Thirst For Knowledge Through Life Long Learning: Motivating the students to have a linking for learning so as to be upto date in the recent developments & hence to make them life long learners.

Mapping of Graduate Attributes with Programme Outcomes

S.No	Graduate Attributes	Program Outcomes
1.	Communication skills	Communicate effectively and present technical information lucidly in oral and written reports.
2.	In-depth domain knowledge	Acquire adequate knowledge in specified formatting so as to build up capabilities of working programs for solving complex problems.
3.	Technical skills	Develop an ability to select modern computing tools & techniques appropriate to the context & use them with dexterity.
4.	Knowledge Inter-disciplinary in nature	Acquire adequate knowledge in inter -Disciplinary subjects such as commerce, mathematics & statistics so as to make use of them for understanding complex concepts.
5.	Positive attitude	Designing programmes to develop the self confidence & hence to make the students to think & act positively.
6.	Critical thinking and problem solving skills	Create and design innovative methodologies to solve complex problems for the betterment of the society.
7.	Dynamism and team building skills	Function effectively both as a team leader and team member on multi disciplinary projects to demonstrate computing and management skills.
8.	Professional ethics and social values	Developing ability to execute a fast with professional ethics without scarificing the concern for

		social welfare and environmental protection.
9.	Self-awareness and emotional intelligence	Make the students understand their own strengths and weakness & be emotionally balanced at times of crisis.
10.	Entrepreneurship qualities	Apply the skill acquired to become successful entrepreneurs.
11.	Responsibility towards Society and environment	Motivating the students to have a linking for learning so as to be upto date in the recent developments & hence to
12.	Thirst for knowledge through life long learning	make them life long learners.

KOVAI KALAIMAGAL COLLEGE OF ARTS AND SCIENCE

(An Autonomous Institute Affiliated to Bharathiar University)

Re - accredited with “A” grade by NAAC

Regulations for Undergraduate Programmes

(Under Choice Based Credit System)

(Effective from 2018 – 2019)

1. REGULATIONS

This regulation is effective from the academic year 2018 -2019.

1.1. Eligibility for Admission

Course	Eligibility Condition
B C A	A pass in higher secondary course. Preference will be given to those who have studied Mathematics as one of the subjects.

1.2. Duration and Course of Study

Three Academic years with six semesters, the duration of the first, third and fifth Semesters from June to November and the second, fourth and sixth Semesters from December to April. The duration of each semester is 90 working days.

1.3. The Medium of Instruction and Examinations

The medium of instruction and examinations shall be English.

1.4. Requirements for Attendance

- a) A candidate will be permitted to take the examination for any semester, if he/she secures not less than 75% of attendance out of the 90 working days during the semester.
- b) A candidate who has secured attendance less than 75% but 65% and above shall apply with the prescribed fee for the condonation of lack of attendance. On the recommendation of the Principal, he/she will be permitted to take up the examination.
- c) A candidate who has secured attendance less than 65% but 55% and above in any semester, will be permitted to continue the course but will not be permitted to appear for the examination in the current papers. However he/she will be permitted to appear for the examination in the papers in which he/she has arrears. He/she will have to compensate the shortage of attendance in the subsequent semester and take the examination in the

papers of both the semester together .

- d) A candidate who has secured less than 55% of attendance in any semester will not be permitted to take the regular examinations and to continue the study in the subsequent semester. He/she has to re-do the course by rejoining in the semester in which the attendance is less than 55%.
- e) A candidate who has secured less than 65% of attendance in the final semester has to compensate his / her attendance shortage in a manner to be decided by the Head of the Department concerned after rejoining the course.

1.5 Restriction to take the Examinations

- a) Any candidate having arrear paper(s) shall have the option to take the examinations in any arrear paper(s) along with the subsequent regular semester papers.
- b) Candidates who fail in any of the papers shall pass the paper(s) concerned within five years from the date of admission to the said course. If they fail to do so, they shall take the examination in the revised text / syllabus, if any, prescribed for the immediate next batch of candidates. If there is no change in the text / syllabus they shall take the examination in that paper with the syllabus in vogue, until there is a change in the text or syllabus.
- c) In the event of removal of that paper consequent to the change of regulations and / or curriculum after a five year period, the candidates shall have to take up an equivalent paper in the revised syllabus as suggested by the chairman and fulfil the requirements as per regulations/curriculum for the award of the degree.

1.6 The Evaluation System

The major objective of the institution's evaluation system is to motivate all students to excel in their performance. The students' performance is continually assessed through Continuous Assessment (CIA) and End Assessment (EAE). The CIA, EAE break up for theory papers is 25:75 and practical is 40:60.

1.6.1. Break Up of Continuous Internal Assessment (CIA) Marks

Theory (Languages, English, Core, Allied and Elective)

Content	Marks Awarded
Continious Internal Assessment Test I	05
Continious Internal Assessment Test II	05
Model Examination	10
Assignment (2 Numbers)	05
Total	25

Theory (Communication Skills, Mathematics for Competitive Examinations and Aptitude & Soft Skills)#

Content	Marks Awarded
Continious Internal Assessment Test I	25*
Continious Internal Assessment Test II	
Continious Internal Assessment Test III	25
Total	50

*Test I and Test II will be evaluated for 25 marks each and the average of these two will be considered.

Internal Evaluation only

Practical

Content	Marks Awarded (Max Marks: 100)	Marks Awarded (Max Marks: 50)
Minimum ten Experiments / Practical Paper / Semester	20	05
Continious Internal Assessment Test	05	05
Model Exam	10	05
Record Note Book	05	05
Total	40	20

Project Viva Voce

Content	Marks Awarded
Review and Content Presentation (3 Reviews) (3* 20)	60
Project Report	20
Total	80

1.6.2. End Assessment Examinations (EAE)

- Semester examination will be conducted at the end of each semester after completing a minimum of 90 working days.
- End Assessment Examination for the odd semester will generally be held during November and even semester during April.
- The question papers for all the courses will be set by the external examiners.
- The examinations for Language, English, Core Allied and Elective will be conducted for a maximum of 75 marks for three hours. The passing minimum is 40% (30 out of 75 marks) and overall passing minimum putting the CIA and EAE marks together will be 40%.

e) Question Paper Pattern: (Languages, English, Core, Allied and Elective)

Part A	20 Marks	10 Questions - 2 Mark each
Part B	25 Marks	5 Questions- 5 Marks each – either or type.
Part C	30 Marks	5 Questions- Answer any three – 10 Marks each
Total	Marks	

- The exams for value Based Education & Non Major Elective will be conducted for a maximum of 50 marks for three hours. The passing minimum is 40% (20 out of 50 marks).

g) Question Paper Pattern: (Value Based Education & Non Major Elective)

Part A	Marks	Questions - either or type of question - 10 Marks each
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h) Question paper pattern : (Extra Credit Courses)

Part A	40 Marks	5 Questions- 8 Marks each – either or type.
Part B	60 Marks	5 Questions- 12 Marks each – either or type.
Total	100 Marks	

- i) The marks secured in the extra credit course will get reflected in the mark sheet only if the candidate has secured 40% marks and above.
- j) The students will be allowed to choose only two papers per semester under the extra credit courses from third semester onwards.
- k) Practical

Content	Marks Awarded (Max Marks: 100)	Marks Awarded (Max Marks: 50)
Program – 1	20	10
Program – 2	20	10
Viva voce	10	05
Record	10	05
Total	60	30

l) Project Viva Voce

The evaluation for the end semester examination should be as per the norms given below:

Content	Marks Awarded
3 Reviews	60
Record	20
Total	80

- m) The students who have opted for the languages other than Tamil in part-I should undergo basic Tamil Course during the 2nd year of the study as a non-credit course for which there would be only Internal Evaluation .
- n) For all the non-credit courses result would be indicated as "Pass" or "Re-Appearance" and not by marks or grades secured in the grade sheet.
- o) There will be one independent valuation for all theory papers under parts I, II & III by external examiner.
- p) A candidate may request for re-totalling/revaluation of his/her answer script by submitting an application addressing to the Controller of Examination through the Principal, paying the prescribed fee. This provision is available for all theory papers taken in the EAE. However there is no provision for revaluation of Practical papers.

- q) Candidates desirous of improving the marks awarded in a passed subject in their first attempt shall reappear once within a period of subsequent two semesters. The improved marks shall be considered for classification but not for ranking. When there is no improvement, there shall not be any change in the original marks already awarded.
- r) Supplementary examination will be conducted for the benefit of final year students after 15 days of the declaration of the final semester results. Candidate who has arrears in any semester subject to a maximum of three papers can appear for the supplementary exam conducted after the final semester.

1.7 Grading

The following table gives the marks, grade points, letter grades and classification to indicate the performance of the candidate.

Conversion of Marks to Grade Points and Letter Grades (Performance in a Course/Paper)

Range of Marks	Grade Points	Letter Grade	Description
90-100	9.0-10.0	O	Outstanding
80-89	8.0-8.9	D+	Excellent
75-79	7.5-7.9	D	Distinction
70-74	7.0-7.4	A+	Very Good
60-69	6.0-6.9	A	Good
50-59	5.0-5.9	B	Above Average
40-49	4.0-4.9	C	Average
00-39	0.0	U	Re - Appearance
ABSENT	0.0	AB	Absent

C_i = Credits earned for course i in any semester

G_i = Grade Point obtained for course i in any semester

n = refers to the semester in which such course were credited

For a Semester:

$$\text{GRADE POINT AVERAGE [GPA]} = \frac{\sum_i C_i G_i}{\sum_i C_i}$$

Sum of the multiplication of grade points by the credits of the courses

$$\text{GPA} = \frac{\text{-----}}{\text{-----}}$$

Sum of the credits of the courses in a semester

For the Entire Programme:

$$\text{CUMULATIVE GRADE POINT AVERAGE [CGPA]} = \frac{\sum_n \sum_i C_{ni} G_{ni}}{\sum_n \sum_i C_{ni}}$$

Sum of the multiplication of grade points by the credits of the entire programme

$$\text{CGPA} = \frac{\text{-----}}{\text{-----}}$$

Sum of the credits of the courses of the entire programme

Classification of Successful candidates

A candidate who passes all the examinations in Part I to Part IV securing following CGPA and Grades shall be declared as follows for each part:

CGPA	Grade	Classification of Final Result
9.5 and above up to 10.0	O+	First Class – Exemplary*
9.0 and above but below 9.5	O	
8.5 and above but below 9.0	D++	First Class with Distinction*
8.0 and above but below 8.5	D+	
7.5 and above but below 8.0	D	
7.0 and above but below 7.5	A++	First Class
6.5 and above but below 7.0	A+	
6.0 and above but below 6.5	A	
5.5 and above but below 6.0	B+	Second Class
5.0 and above but below 5.5	B	
4.5 and above but below 5.0	C+	Third Class
4.0 and above but below 4.5	C	
0.0 and above but below 4.0	U	Re-Appearance

* The candidates who have passed in the first appearance and within the prescribed semester of the Programme (Major, Allied and Elective Course alone) are eligible.

1.8 Course Completion

Students shall complete the programme within a period not exceeding three years for UG courses from the date of admission.

SCHEME OF EXAMINATION AND PROGRAMME STRUCTURE**Bachelor of Computer Applications (2018 – 2021)**

Part	Course Code	Study Components	Hrs / Week	CIA	Ext	Total	Credits
Semester – I							
I	18U1TALT01	Language 1 : Paper I	5	25	75	100	3
II	18U1ENLT01	Language 2 : Functional English I	5	25	75	100	3
III	18U1CACT01	Core 1: C Programming	5	25	75	100	4
	18U1CACT02	Core 2: Digital Fundamentals and Computer Architecture	5	25	75	100	4
	18U1CACP03	Core 3: C Programming - Practical	4	40	60	100	3
	18U1CAAT01	Allied 1 : Numerical Methods and Statistics	5	25	75	100	4
IV	18U1VBET01	Value Based Education 1 : Environmental Studies **	2	-	50	50	2
	18U1SBST01	Skill Based Subject 1 : Mathematics for Competitive Examinations - I	2	50	-	50	2
		Sports	2	-	-	-	-
		Library	1	-	-	-	-
TOTAL CREDITS							25
Semester – II							
I	18U2TALT02	Language 1 : Paper II	5	25	75	100	3
II	18U2ENLT02	Language 2 : Functional English II	5	25	75	100	3
III	18U2CACT04	Core 4: C++ Programming	5	25	75	100	4
	18U2CACT05	Core 5: Data Structures	5	25	75	100	4
	18U2CACP06	Core 6: Data Structures & C++ Programming - Practical	4	40	60	100	3
	18U2CAAT02	Allied 2 : Discrete Mathematics	5	25	75	100	4
IV	18U2VBET02	Value Based Education 2 : Ethics & Culture **	2	-	50	50	2
	18U2SBST02	Skill Based Subject 2 : Mathematics for Competitive Examinations - II	2	50	-	50	2
		Sports	2	-	-	-	-
		Library	1	-	-	-	-
TOTAL CREDITS							25

		Semester – III					
III	18U3CACT07	Core 7: Operating Systems	5	25	75	100	4
	18U3CACT08	Core 8: Java Programming	5	25	75	100	4
	18U3CACT09	Core 9: Data Communications and Networks	5	25	75	100	4
	18U3CACP10	Core 10: Java Programming - Practical	6	40	60	100	3
	18U3CAAT03	Allied 3 : Operations Research	5	25	75	100	4
IV	18U3NMET01	Non Major Elective 1: Food Science and Nutrition	2	-	50	50	2
	18U3SBST03	Skill Based Subject 3 : Mathematics for Competitive Examinations - III	2	50	-	50	2
	18U3SBST04	Skill Based Subject 4 : Communication Skills - I	2	50	-	50	2
	18U3BTLT01	Non Credit Course 1: Basic Tamil I #	-	-	-	-	-
		Sports	2	-	-	-	-
		Library	1	-	-	-	-
TOTAL CREDITS							25
Part	Subject Code	Study Components	Hrs / Week	CIA	Ext	Total	Credits
		Semester – IV					
III	18U4CACT11	Core 11: Web Designing	5	25	75	100	4
	18U4CACT12	Core 12: System Analysis and Design	6	25	75	100	4
	18U4CACT13	Core 13: E-Commerce	5	25	75	100	3
	18U4CACP14	Core 14: Web Designing - Practical	6	40	60	100	3
	18U4CAAT04	Allied 4: Business Accounting	5	25	75	100	4
IV	18U4NMET02	Non Major Elective 2: Floriculture	2	-	50	50	2
	18U4SBST05	Skill Based Subject 5: Mathematics for Competitive Examinations - IV	2	50	-	50	2
	18U4SBST06	Skill Based Subject 6 : Communication Skills – II	2	50	-	50	2
	18U4BTLT02	Non Credit Course 2: Basic Tamil II #	-	-	-	-	-
		Sports	2	-	-	-	-
		Library	1	-	-	-	-
TOTAL CREDITS							24

		Semester – V					
III	18U5CACT15	Core 15: ASP . Net Programming	5	25	75	100	4
	18U5CACT16	Core 16: Relational Database Management Systems	5	25	75	100	4
	18U5CACP17	Core 18: ASP . Net Programming Practical	6	40	60	100	4
	18U5CACP18	Core 18: Web Technology Practical	6	20	30	50	3
		Elective 1 :	4	25	75	100	3
		Elective 2 :	4	25	75	100	3
	18U5NCCT01	Non Credit Course 3 : Aptitude and Soft Skills	3	50*	-	50*	-
		Sports	2	-	-	-	-
		Library	1	-	-	-	-
TOTAL CREDITS						21	
		Semester – VI					
III	18U6CACT19	Core 19: Software Testing	5	25	75	100	4
	18U6CACP20	Core 20: Software Testing - Practical	5	40	60	100	3
	18U6CACP21	Core 21: PHP & MySQL - Practical	6	20	30	50	3
	18U6CACV22	Core 22: Project and Viva Voce	6	20	80	100	4
		Elective 3 :	4	25	75	100	3
		Elective 4 :	4	25	75	100	3
	18U6NCCT02	Non Credit Course 4 : Aptitude and Soft Skills	3	50*	-	50*	-
		Sports	2	-	-	-	-
		Library	1	-	-	-	-
TOTAL CREDITS						20	
Total Marks						3800	140

** Answers to the questions may also be given in Tamil.

The students who have not studied Tamil in Higher Secondary Course and not opted for Tamil under Language I in the Degree programme have necessarily to study Basic Tamil for 2 hours / week during III & IV Semesters after their regular college working hours.

Project and Viva Voce:

Project Work carries 100 marks with 4 credits will be awarded. The breakup of marks will as follows.

Internal Assessment: 80 marks (60 Marks for 3 Reviews and 20 marks for record) and External Assessment: 20 marks (Viva Voce).

List of Electives		
	Sub Code	Subjects
Elective 1	18U5CAET1A	Software Engineering
	18U5CAET1B	Data Mining and Ware Housing
	18U5CAET1C	Computer Graphics
Elective 2	18U5CAET2A	Embedded Systems
	18U5CAET2B	Client Server Technology
	18U5CAET2C	Web Technology and its Applications
Elective 3	18U6CAET3A	Artificial Intelligence and Expert Systems
	18U6CAET3B	Mobile Computing
	18U6CAET3C	Cloud Computing
Elective 4	18U6CAET4A	Compiler Design
	18U6CAET4B	Mobile Operating System
	18U6CAET4C	PHP & MySQL

EXTRA CREDIT COURSES		
Course Code	Subjects	Credits
2018ECC001	சுற்றுலா வளர்ச்சி	2
2018ECC002	இதழியல் கலை	2
2018ECC003	நாட்டுப்புறவியல்	2
2018ECC004	கணிப்பொறியில் தமிழ்	2
2018ECC005	தமிழக வரலாறும் மக்கள் பண்பாடும்	2
2018ECC006	தமிழ் இலக்கிய வரலாறு	2
2018ECC007	New Media	2
2018ECC008	Proofreading And Copyediting	2
2018ECC009	Personality Development	2
2018ECC010	Technical Writing	2

2018ECC011	An Introduction To Psychology	2
2018ECC012	Astronomy	2
2018ECC013	Fuzzy Mathematics	2
2018ECC014	Operation Research	2
2018ECC015	Mathematics For Professional Courses	2
2018ECC016	Multimedia And Its Applications	2
2018ECC017	Management Information System	2
2018ECC018	Theory Of Computation	2
2018ECC019	Oops With Java Programming	2
2018ECC020	Programming In C	2
2018ECC021	Internet Of Things	2
2018ECC022	Web Technology And Its Applications	2
2018ECC023	Network Security	2
2018ECC024	Mobile And Wireless Technology	2
2018ECC025	Cloud Computing	2
2018ECC026	Cross Culture Management	2
2018ECC027	Indian Economy And Trade Dependencies	2
2018ECC028	Export Marketing	2
2018ECC029	International Trade & Forex	2
2018ECC030	Brand Management	2
2018ECC031	Stress Management	2
2018ECC032	Risk And Insurance In International Trade	2
2018ECC033	Retail Marketing	2
2018ECC034	Export And Import Procedures	2
2018ECC035	Logistics And Supplychain Management	2
2018ECC036	Quality Management	2
2018ECC037	Management Of Small And New Enterprises	2
2018ECC038	Tourism Management	2

2018ECC039	Event Management	2
2018ECC040	Hospitality Management	2
2018ECC041	Consumer Behaviour	2
2018ECC042	Human Resource Management	2
2018ECC043	Principles And Practice Of Marketing Services	2
2018ECC044	Consumer Marketing	2
2018ECC045	Marketing Of Health Services	2
2018ECC046	International Banking	2
2018ECC047	E-Commerce	2
2018ECC048	International Accounting	2
2018ECC049	Corporate Social Responsibility And Governance	2
2018ECC050	Enterprise Resource Planning	2

Curriculum Structure

S.No	Course	No of Papers	Credits
1	Language 1 : Tamil/Hindi/Malayalam/French	2	6
2	Language 2 : English	2	6
3	Core	22	80
4	Allied	4	16
5	Elective	4	12
6	Value Based Education	2	4
7	Skill Based Subject	6	12
8	Non-Major Elective	2	4
Total			140

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U1TALT01	Title : Tamil - I	Batch	2018-2021
Hrs/week	5 Hrs		Semester	1
			Credits	3

நோக்கம்

- சமூகம் பற்றிய சிந்தனைகளைத் தமிழ்ப் படைப்பிலக்கியங்கள் மூலம் ஏற்படுத்துதல்
- புதுக்கவிதைகள் இ சிறுகதைகள் ஆகியவற்றைப் படிக்க வைத்தல். எழுத வைத்தல்
- போட்டித் தேர்வுகளுக்கு மாணவர்களைத் தயார் செய்தல்

Course Outcome (CO)

CO Number	CO Statement
CO1	தமிழ் மொழியின் வாயிலாக பண்பாடு, பகுத்தறிவு, கலை மற்றும் மரபு முதலியவற்றை அறிந்து வாழ்க்கையில் பயனடைதல்.
CO2	வாழ்வியல் நெறிமுறைகளை உணர்ந்து மனிதநேயத்துடனும் உயர்ந்த குறிக்கோளுடனும் சமுதாயத்தில் மதிக்கத்தக்கவர்களாக இருத்தல்.
CO3	இலக்கியங்களின் வாயிலாக வாழ்க்கை முறைகளைத் தெரிந்து கொள்ளுதல்.
CO4	அறத்தின் வழிநின்று பொருளீட்டி இன்பம் துய்ப்பது உன்னத வாழ்வின் அடிப்படை என்பதை திருக்குறள் மூலம் மாணவர்கள் உணர்தல்.
CO5	நாட்டுப்பற்று, சமூகம், பெண்ணியம் குறித்த விழுமியங்கள் சார்ந்த கவிதைகளும், கருத்து பரிமாற்றத்திறனுக்கு அடிப்படையாக உள்ள இலக்கணப் பகுதியும், தன் சுய சிந்தனையுடன் படைப்பாக்கத்திறனை வளர்த்தெடுக்கும் வகையில் சிறுகதைப்பகுதியும் காலவோட்டத்துடன் இணைந்து மாணவர்களுக்கு சிந்திக்கும் ஆற்றலைப் பெற வழி வகை செய்தல்.

MAPPING WITH PROGRAMME OUTCOMES

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	-	-	-	-	-	-	-	-	-	-
CO2	-	-	-	-	-	-	✓	-	-	-	-
CO3	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	✓	-	-	-
CO5	✓	-	-	-	✓	✓	-	-	✓	-	-

பாடத்திட்டம்

அலகு - 1 செய்யுள் திரட்டு : மரபுக் கவிதைகள் (15 மணிநேரம்)

1. பாரதியார் - யோகசித்தி (பாரதியார் கவிதைகள்)
2. பாரதிதாசன் - தமிழனுக்கு வீழ்ச்சியில்லை (பாரதிதாசன் கவிதைகள்)
3. கவிமணி - கவிதை (மலரும் மாலையும்)
4. கண்ணதாசன் - ஆதியிலே வார்த்தை இருந்தார் (இயேசு காவியம்)

அலகு - 2 செய்யுள் திரட்டு : புதுக் கவிதைகள் (13 மணிநேரம்)

1. புவியரசு - கதாநாயகி (ஒரு முக்கிய அறிவிப்பு)
2. அப்துல் ரகுமான் - தவறான எண் (ஆலாபனை)
3. வைரமுத்து - உன் ஆன்மீகத்தின் அர்த்தம் (கவிராஜன் கதை)
4. சிற்பி பாலசுப்பிரமணியம் - கொடும்பாவி சாகாளோ (ஒரு கிராமத்து நதி)
5. கலாப்பிரியா - உயிர்த்தெழுதல் (கலாப்பிரியா கவிதைகள்)
6. இளம்பிறை - அசதி (முதல் மனிஷி)

அலகு - 3 சிறுகதைத் தொகுப்பு (20 மணிநேரம்)

1. புதுமைப்பித்தன் - பொன்னகரம் (புதுமைப்பித்தன் சிறுகதைகள்)
2. ஆ.மாதவன் - சுசிலாவின் கதை (ஆ.மாதவன் கதைகள்)
3. ஜெயகாந்தன் - தேவன் வருவாரா? (தேவன் வருவாரா?)
4. சுஜாதா - தர்மு மாமா (விஞ்ஞானச் சிறுகதைகள்)
5. அசோகமித்திரன் - அப்பாவின் சிநேகிதர் (அப்பாவின் சிநேகிதர்)
6. வண்ணதாசன் - ஆலங்கட்டிமழை (வண்ணதாசன் கதைகள்)
7. நாஞ்சில் நாடன் - சூடிய பூ சூடற்க (சூடிய பூ சூடற்க)
8. எஸ்.இராமகிருஷ்ணன் - தெரிந்தவர்கள் (எஸ்.இராமகிருஷ்ணன் கதைகள்)
9. வண்ணநிலவன் - இரண்டாவது சொர்க்கம் (வண்ணநிலவன் கதைகள்)
10. அம்பை - பிளாஸ்டிக் டப்பாவில் பராசக்தி முதலியோர் (காட்டில் ஒரு மான்)

அலகு - 4 தமிழ் இலக்கிய வரலாறு (15 மணிநேரம்)

- தமிழ்நாடு அரசுப் பணியாளர் தேர்வாணையம் நடத்தும் போட்டித் தேர்வுக்குரிய பொதுத் தமிழ்ப் பாடத்திட்டம் - ஓர் அறிமுகம்

1. புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும்
2. சிறுகதையின் தோற்றமும் வளர்ச்சியும்
3. புகழ்பெற்ற தமிழ் நூல்கள் இ நூலாசிரியர்கள் (சிறுகதை இ புதுக்கவிதை) (பார்வை நூல்: தமிழ் இலக்கிய வரலாறு)
4. அடைமொழியால் குறிக்கப்பெறும் நூல்கள் இ நூலாசிரியர்கள் (பார்வை நூல்: தமிழ் இலக்கிய வரலாறு)
5. ஆங்கிலச் சொல்லிற்கு இணையான தமிழ்ச் சொல் (பார்வை நூல்: நற்றமிழ் இலக்கணம்)

அலகு - 5 இலக்கணம் (12 மணிநேரம்)

1. வேர்ச்சொல் அறிதல் இ அகர வரிசைப்படி சொற்களை மாற்றியமைத்தல்.
2. செய்வினைஇ செய்ப்பாட்டுவினைஇ உடன்பாடுஇ எதிர்மறைஇ கலவை வாக்கியங்களும் வாக்கிய வகைகளும்.
3. பெயர் இ வினைஇ இடைஇ உரிச்சொற்கள்.
4. லகர-ளகர-ழகரஇ ணகர-னகர – வேறுபாடுகள்.

TEXT BOOKS

S. No	Author Name	Title of the Book	Publisher	Year / Edition
1	தமிழ்த்துறை	பொதுத்தமிழ் - I (nra;As; jpul;L > rpWfijj; njhFg;G)	கோவை கலைமகள் கலை அறிவியல் கல்லூரி	2017

REFERENCE BOOKS

நா. நே	யுரவாழ்ச யேஅந	வுவைடந முக வாந டிழமும	ரீடிடனாளாநச	லுநயச .: நுனவைழைடு
1	புலவர் வெற்றியழகன்(தொ.ஆ.),	பாரதியார் கவிதைகள்	ராமையா பதிப்பகம், சென்னை.	முதற் பதிப்பு: ஏப்ரல் - 2008
2	தொ.பரமசிவன்(ப.ஆ.)	பாரதிதாசன் கவிதைகள்	நிபூ செஞ்சுரி புக ஹவுஸ், சென்னை.	மூன்றாம் பதிப்பு: டிசம்பர் - 1998
3	வித்துவான் சிவ கன்னியப்பன்	மலரும் மாலையும்	பூம்புகார் பதிப்பகம், சென்னை.	முதற் பதிப்பு: செப்டம்பர் - 2002
4	கவியரசு கண்ணதாசன்	இயேசு காவியம்	கலைக்காவிரி பதிப்பகம், திருச்சி.	ஐந்தாம் பதிப்பு: 1997
5	புவியரசு	ஒரு முக்கிய அறிவிப்பு	விஜயா பதிப்பகம், கோவை.	இரண்டாம் பதிப்பு: டிசம்பர் - 2005.
6	அப்துல் ரகுமான்	ஆலாபனை	நேசனல் பப்ளிஷர்ஸ், சென்னை.	நான்காம் பதிப்பு: ஏப்ரல் - 2003
7	வைரமுத்து	கவிராஜன் கதை	திருமகள் பதிப்பகம், சென்னை.	பனிரெண்டாம் பதிப்பு: செப்டம்பர் -2007
8	சிற்பி	ஒரு கிராமத்து நதி	கவிதா பதிப்பகம் சென்னை.	எட்டாம் பதிப்பு: ஆகஸ்ட்டு- 2011
9	கலாப்பிரியா	கலாப்பிரியா கவிதைகள்	தமிழினி பதிப்பகம், சென்னை.	முதற் பதிப்பு: டிசம்பர் - 2001
10	இளம்பிறை	முதல் மனுஷி	தமிழ் நெஞ்சம், மயிலாடுதுறை.	முதற் பதிப்பு: டிசம்பர் - 2003
11	சுஜாதா	விஞ்ஞானச் சிறுகதைகள்	உயிர்மை பதிப்பகம், சென்னை - 18.	நான்காம் பதிப்பு: ஜூலை - 2011
12	புதுமைப்பித்தன்	புதுமைப்பித்தன் கதைகள்	பூம்புகார் பதிப்பகம், சென்னை.	இரண்டாம் பதிப்பு: ஜூலை -2006.
13	முாதவன்	ஆ.மாதவன் கதைகள்	தமிழினி பதிப்பகம்,சென்னை.	முதற்பதிப்பு: டிசம்பர்- 2001.
14	ஜெயகாந்தன்	தேவன் வருவாரா	மீனாட்சி புத்தக நிலையம், மதுரை.	நான்காம் பதிப்பு: ஜூன் - 1996
15	அசோகமித்திரன்	அப்பாவின் சிநேகிதர்	நர்மதா வெளியீடு, சென்னை.	இரண்டாம் பதிப்பு: டிசம்பர் - 1996.
16	வண்ணதாசன்	கனிவு	சந்தியா பதிப்பகம், சென்னை	இரண்டாம் பதிப்பு: ஏப்ரல் - 2011

Scheme and Regulations - 2018-2021 (SR-3) - BCA

17	நாஞ்சில் நாடன்	சூடிய பூ சூடற்க	தமிழினி பதிப்பகம், சென்னை	மூன்றாம் பதிப்பு: 2010
18	எஸ்.ராமகிருஷ்ணன்	எஸ்.ராமகிருஷ்ணன் கதைகள்	கிழக்கு பதிப்பகம், சென்னை.	இரண்டாம் பதிப்பு: ஏப்ரல் - 2005.
19	வண்ணநிலவன்	வண்ணநிலவன் சிறுகதைகள்	நற்றிணை பதிப்பகம், சென்னை.	இரண்டாம் பதிப்பு: ஆகஸ்ட்டு - 2013.
20	அம்பை	காட்டில் ஒரு மான்	காலச்சுவடு பதிப்பகம், சென்னை.	மூன்றாம் பதிப்பு: டிசம்பர் - 2003.
21	வல்லிக்கண்ணன்	புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும்	அகரம் பதிப்பகம்,, சும்பகோணம்.	நான்காம் பதிப்பு: ஜூலை - 1999.
22	கா.கோ.வெங்கட்ராமன்	தமிழ் இலக்கிய வரலாறு	கலையக வெளியீடு, திண்டுக்கல்.	இரண்டாம் பதிப்பு: ஜூன் - 2002.
23	மது.ச.விமலானந்தம்	தமிழ் இலக்கிய வரலாறு	முல்லை நிலையம், சென்னை.	2014.
24	மு.பரமசிவம்	நற்றமிழ் இலக்கணம்	சைவசித்தாந்த பதிப்பகம், திருநெல்வேலி.	முதற் பதிப்பு: 1995.

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U1FRLT01	Title : Language I - French I	Batch	2018-2021
Hrs/week	5 Hrs.		Semester	1
			Credits	3

COURSE OBJECTIVES

- To enable the students to understand the basic structure of French language.

COURSE OUTCOMES (CO)

In Successful Completion of the course the students will be able to

CO Number	CO Statement
CO1	Have access to the works of great french writers.
CO2	Develop the skills of speaking and writing without flaws.
CO3	Help the learners to have a good critical thinking.

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	✓	-	-	-	-	-	-	-	-	-	-
CO2	✓	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	-	✓	-	-	-	-	-

SYLLABUS

Prescribed text	:	ALORS I
Units	:	1-5
Authors	:	Marcella Di Giura Jean-Claude Beacco
Available at	:	Goyal Publishers Pvt Ltd 86, University Block Jawahar Nagar (Kamla Nagar) New Delhi – 110007. Tel : 011 – 23852986 / 9650597000

Question Paper Pattern : Semester I

(ALL QUESTIONS TO BE SET ONLY FROM THE PRESCRIBED TEXT)

Maximum Marks: 75

Time: 3 hrs.

SECTION A (10)

13. CHOISISSEZ LA MEILLEURE RÉPONSE: (10X1=10)

SECTION B (20)

2. TRADUISEZ LES TEXTES SUIVANTS EN ANGLAIS:(4/5) (4X5=20)

(Pg Nos : 26 ex-6,44 ex-3,56 ex-4,74ex-4,80.)

SECTION C (45)

3. COMPRÉHENSION (8x1=8)

4. EXERCICES DE GRAMMAIRE:(5X5=25) (EITHER/OR)

5. FAITES DES PHRASES:(6/8) (6X1=6)

6. TRADUISEZ LES EXPRESSIONS EN ANGLAIS :(6/8) (6X1=6)

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U1HILT01	Title : Language I - Hindi I	Batch	2018-2021
Hrs/week	5 Hrs.		Semester	1
			Credits	3

COURSE OBJECTIVES

- To enable the students to understand the basic structure of Hindi language.

COURSE OUTCOMES (CO)

In Successful Completion of the course the students will be able to

CO Number	CO Statement
CO1	help the learners to communicate with others in any part of India with ease.
CO2	Develop the skills of speaking and writing without flaws.
CO3	Help the learners to have a good critical thinking.

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	✓	-	-	-	-	-	-	-	-	-	-
CO2	✓	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	-	✓	-	-	-	-	-

SYLLABUS

1. PROSE : NUTHAN GADYA SANGRAH

Editor: Jayaprakash
 (Prescribed Lessons – only 6)
 Lesson 1 – Bharthiya Sanskurthi
 Lesson 3 - Razia
 Lesson 4 – Makreal
 Lesson 5- Bahtha Pani Nirmala
 Lesson 6 – Rashtrapitha Mahathma Gandhi
 Lesson 9 – Ninda Ras.
 Publisher: Sumitra Prakashan
 Sumitras, 16/4 Hastings Road,
 Allahabad – 211 001.

2. NON DETAILED TEXT: KAHANI KUNJ.

Editor: Dr.V.P.Amithab.
(Stories 1 -6 only)
Publisher : Govind Prakashan
Sadhar Bagaar, Mathura,
Uttar Pradesh – 281 001.

3. GRAMMAR : SHABDHA VICHAR ONLY

(NOUN,PRONOUN, ADJECTIVE, VERB, TENSE,CASE ENDINGS)
Theoretical & Applied.
Book for reference : Vyakaran Pradeep by Ramdev.
Publisher : Hindi Bhavan,
36,Tagore Town
Allahabad – 211 002.

4. TRANSLATION: English- Hindi only.

ANUVADH ABHYAS – III
(1-15 lessons Only)
Publisher: DAKSHIN BHARATH HINDI PRACHAR SABHA
CHENNAI -17.

5. COMPREHENSION : 1 Passage from ANUVADH ABHYAS – III (16- 30)
DAKSHIN BHARATH HINDI PRACHAR SABHA
CHENNAI- 17.

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U1MLLT01	Title : Language I - Malayalam I	Batch	2018-2021
Hrs/week	5 Hrs.		Semester	1
			Credits	3

COURSE OBJECTIVES

- To enable the students to understand the basic structure of Malayalam language.

COURSE OUTCOMES (CO)

In Successful Completion of the course the students will be able to

CO Number	CO Statement
CO1	Help the learners to learn other Indian languages like Sanskrit, Tamil etc., through Malayalam without much effort.
CO2	Develop the skills of speaking and writing without flaws.
CO3	Help the learners to have a good critical thinking.

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	✓	-	-	-	-	-	-	-	-	-	-
CO2	✓	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	-	✓	-	-	-	-	-

SYLLABUS

This paper will have the following five units:

- Unit I & II - Novel
- Unit III & IV - Short story
- Unit V - Composition & Translation

Text books prescribed:

- Unit I & II - Naalukettu – M.T. Vasudevan Nair
(D. C. Books, Kottayam, Kerala)

Unit III & IV - Nalinakanthi – T.Padmanabhan
(D. C. Books, Kottayam, Kerala)

Unit V - Expansion of ideas, General Essay and Translation of a simple passage
from English about 100 words) to Malayalam

Reference books:

1. Kavitha Sahithya Charitram –Dr. M. Leelavathi (Kerala Sahithya Academy, Trichur)
2. Malayala Novel Sahithya Charitram – K. M.Tharakan (N.B.S. Kottayam)
3. Malayala Nataka Sahithya Charitram – G. Sankarapillai (D.C. Books, Kottayam)
4. Cherukatha Innale Innu – M. Achuyuthan (D.C. Books, Kottayam)
5. Sahithya Charitram Prasthanangalilude - Dr. K .M. George, (Chief Editor) (D.C. Books, Kottayam)

SEMESTER I

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	18U1ENLT01	Language II-Functional English – I	Batch	2018-2021
			Semester	1
Hrs/ Week	5 Hrs		Credits	3

COURSE OBJECTIVES:

- To enable the students to understand the basic English grammar.

COURSE OUTCOMES (CO):

- In Successful Completion of the course the students will be able to

CO Number	CO Statement
CO1	develop an interest in the minds of the students to enjoy and appreciate the literary works in English.
CO2	develop the skills of speaking and writing without flaws.
CO3	help the learners to have a good critical thinking.

MAPPING WITH PROGRAMME OUTCOMES

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	✓	-	-	-	-	-	-	-	-	-	-
CO2	✓	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	-	✓	-	-	-	-	-

SYLLABUS**UNIT –I-POETRY****(Hours-12)**

- On His Blindness- John Milton
- Menelaus and Helen- Rupert Brooke
- The Solitary Reaper- William Wordsworth

UNIT- II- PROSE**(Hours-12)**

- Sweets for Angels- R.K.Narayan
- The Post Master- Rabindranath Tagore

3. The Golden Touch- Nathaniel Hawthorne

UNIT- III- GRAMMAR AND VOCABULARY

(Hours-18)

1. Subject Verb agreement
2. Articles, Preposition
3. Words Often Confused
4. Synonyms and Antonyms
5. Homophones

UNIT-IV- VERBAL APTITUDE

(Hours-18)

1. Cloze Test
2. Phrasal Verbs
3. One Word Substitutes
4. Eponyms

UNIT- V- DIALOGUE WRITING (CONVERSATION EXERCISES)

(Hours-15)

✓ Greeting , Introducing , Requesting, Inviting & Congratulating

TEXT BOOKS:

S. No	Author Name	Title of the Book	Publisher
1	A.G.Xavier	An Anthology of Popular Essays and Poems	Macmillan Indian Limited
2	Prof. A.E.Subramanian	Gifts to Posterity- An Anthology of Modern Short Stories	Chitra Publications, Chennai

REFERENCE BOOKS:

S. No	Author Name	Title of the Book	Publisher
1	N.Krishnaswamy	Modern English- A Book of Grammar Usage and Composition	Macmillan Indian Limited
2	Prof.K.Ramappa, Retd.	Essential English Grammar Usage & Composition	M. I. Publications

Means of Curriculum Delivery: Lecture, Group Discussion, Seminar, Assignment, Case Studies, Google Classroom.

SEMESTER I

Programme Code :	BCA	Programme Title Title: Core1: C Programming	Bachelor of Computer Applications	
Course Code :	18U1CACT01		Batch	2018-2021
Hrs/week	5 Hrs		Semester	1
			Credits	4

COURSE OBJECTIVES

To enable the Students

- To know about problem solving techniques and algorithm fundamentals and basics of C Programming.
- To clearly understand decision making and branching concepts with various statements.
- To know about the concept of arrays, strings and functions with its various operations.
- To learn about the concept of structure, pointers and file management.

COURSE OUTCOMES (CO)

- On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the basic concepts of Problem solving and algorithms
CO2	Explain the loops and decision making statements to solve the problem
CO3	Apply different operations on arrays
CO4	Use functions to solve the given problem
CO5	Discuss about file system and operations on files

MAPPING WITH PROGRAMME OUTCOMES

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	✓	✓	✓	-	-	-	-	-
CO2	-	✓	✓	✓	✓	✓	-	-	-	-	-
CO3	-	✓	✓	✓	✓	✓	-	-	-	-	-
CO4	-	✓	✓	✓	✓	✓	-	-	-	-	-
CO5	-	✓	✓	✓	✓	✓	-	-	-	-	-

Syllabus

Unit-I (Hours-12)
Overview of C - Introduction – Structure of C - Character set - C tokens - Keyword & Identifiers - Constants - Variables - Data types - Declaration of variables - Assigning values to variables - Defining Symbolic Constants - Arithmetic, Relational, Logical, Assignment, Conditional, Bitwise, Special, Increment and Decrement operators – Arithmetic Expressions: - Evaluation of expression - Procedure of arithmetic operators – Type conversion in expression - operator precedence & associative - Mathematical functions - Reading & Writing a character- Formatted input and output.

Unit-II (Hours-11)
Decision making and Branching - Decision making with IF statement - simple IF statement - The IF ELSE Statement - Nesting of IF ...ELSE statements - The ELSE IF ladder - The switch statement - The?: operator - The GOTO statement -- Decision Making and Looping - The WHILE statement - The DO statement - The FOR statement – Jumps in Loop:, - Arrays - One Dimensional - Two Dimensional - Multidimensional arrays - Character string Handling - Declaring and initializing string variables - Reading strings from technical -- writing strings to Screen - Arithmetic operation on character – Putting strings together - comparison of two strings - String handling Functions - Table of Strings.

Unit-III (Hours-13)
Functions: User - defined Functions - Need for user Defined functions - A multi function program - The form of C functions - Return values and their types - Calling a function - Category of functions –Arguments: No Arguments and no return values - Arguments but no return values - Arguments with return values - Handling of non-integer functions. Nesting of functions - Recursion - Functions with arrays.

Unit-IV (Hours-12)
Structure : Structure definition - Giving values to members – Structure initialization - comparison of structure variables - Arrays of structures - Arrays within structures - Structures within structures- Structures and functions - unions - size of structures - Bit fields. Pointers - Understanding pointers - Accessing the Address of a variable - Declaring and initializing pointers - Accessing a variable through its pointers - pointer expressions pointer increments and scale factor – pointers and arrays - pointers and character strings – pointers and functions – pointers and structures.

Unit-V (Hours-12)
File management in C - Defining and opening a file - closing file - I/O operations on files - Error handling during I/O operations - Random access to files - Command line arguments - The Pre-processor.

TextBooks

Recent editions of the following books only are recommended

S.No	Authors	Title	Publishers
1	E. Balagurusamy	Programming in ANSI C	Tata McGraw Hill
2	Yeswanth Kanethkar	Let us C	Tata McGraw Hill

Reference Books

S.No	Authors	Title	Publishers
1	Byron Gottfried	Programming with C	Tata McGraw
2	Ashok. N. Kamathane	Programming with ANSI and Turbo C	Pearson Education Asia

Web References

1. <https://www.geeksforgeeks.org/c-language-set-1-introduction/>
2. <https://www.programiz.com/c-programming>
3. https://en.wikipedia.org/wiki/C_%28programming_language%29
4. <https://fresh2refresh.com/c-programming/>

Means of Curriculum Delivery : Lecture, Group Learning, Seminar, Assignment, Google classroom.

SEMESTER I

Programme Code :	BCA	Programme Title Title: Core 2: Digital Fundamentals And Computer Architecture	Bachelor of Computer Applications	
Course Code :	18U1CACT02		Batch	2018-2021
Hrs/week	5 Hrs		Semester	1
			Credits	4

COURSE OBJECTIVE

- On Completion Of This Course,
- The Student Can Understand The Design Of Combinational And Sequential Digital Logic
- Circuits Students Also Have Knowledge On Programmable Logic Device and CPU.

COURSE OUTCOMES (CO)

- ✓ On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Review various Numbering System & Conversion problems
CO2	Design basic circuit for Gates
CO3	Apply Boolean laws & rules to specify simple Expressions
CO4	Identify & Illustrate basic input-output organization of computer
CO5	Illustrate the Memory Concepts, I/O Device & Pheripherals

MAPPING WITH PROGRAMME OUTCOMES

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	-	-	-	-	-	✓
CO2	-	✓	✓	-	-	-	-	-	-	-	✓
CO3	-	✓	✓	-	-	-	-	-	-	-	✓
CO4	-	✓	✓	-	-	-	-	-	-	-	✓
CO5	-	✓	✓	-	-	-	-	-	-	-	✓

SYLLABUS**UNIT - I****(Hours-12)**

Number System and Binary Codes: Decimal, Binary, Octal, Hexadecimal – Binary addition, Multiplication, Division – Floating point representation, Complements, BCD, Excess3, Gray Code. **Arithmetic Circuits:** Half adder, Full adder, Parallel binary adder, BCD adder, Halfsubtractor, Full subtractor, Parallel binary subtractor - **Digital Logic:** The Basic Gates – NOR, NAND, XOR Gates.

UNIT - II**(Hours-12)**

Combinational Logic Circuits: Boolean algebra – Karnaugh map – Canonical form 1 – Construction and properties – Implicate – Don't care combinations - Product of sum, Sum of products, simplifications.

UNIT – III**(Hours-12)**

Sequential Circuits: Flip-Flops: RS, D, JK, and T - Multiplexers – Demultiplexers – Decoder Encoder – Counters.

UNIT - IV**(Hours-12)**

Input – Output Organization: Input – output interface – I/O Bus and Interface – I/O Bus Versus Memory Bus – Isolated Versus Memory – Mapped I/O – Example of I/O Interface.

Asynchronous data transfer: Strobe Control and Handshaking – Priority Interrupt: Daisy-Chaining Priority, Parallel Priority Interrupt.

Direct Memory Access: DMA Controller, DMA Transfer. Input – Output Processor: CPU-IOP Communication.

UNIT – V**(Hours-12)**

Memory Organization: Memory Hierarchy – Main Memory- Associative memory: Hardware Organization, Match Logic, Read Operation, Write Operation.

Cache Memory: Associative, Direct, Set-associative Mapping – Writing into Cache Initialization, Basics of Virtual Memory.

TEXT BOOKS

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1.	V.K. Puri	Digital Electronics Circuits and Systems	TMH, Third Edition
2.	Morris Mano	Computer System Architecture	PHI, Third Edition
3	Albert Paul Malvino, Donald P Leach,	Digital Principles and Applications	Tata McGraw Hill, Sixth Edition
4	Carter, Schaum's outline series	Computer Architecture	Tata McGraw Hill

WEBSITE REFERENCE

- [1. https://www.ee.usyd.edu.au/tutorials/digital_tutorial/chapter2/2_0.html](https://www.ee.usyd.edu.au/tutorials/digital_tutorial/chapter2/2_0.html).
- [2. https://weblab.deusto.es/olarex/cd/UD/.../number_systems_and_binary_codes.html](https://weblab.deusto.es/olarex/cd/UD/.../number_systems_and_binary_codes.html).
- [3. https://www.tutorialspoint.com](https://www.tutorialspoint.com), CO - Sequential Circuits.
- [4. https://www.cs.helsinki.fi/u/kerola/kj2/stal-01_slides_figs/T7-Vertical.pdf](https://www.cs.helsinki.fi/u/kerola/kj2/stal-01_slides_figs/T7-Vertical.pdf)

Means of Curriculum Delivery : Lecture, Group Learning, Seminar, Assignment, Google classroom.

SEMESTER I

Programme Code :	BCA	Programme Title Title : Core 3 : C Programming - Practical	Bachelor of Computer Applications	
Course Code :	18U1CACP03		Batch	2018-2021
Hrs/week	4 Hrs		Semester	1
			Credits	3

COURSE OBJECTIVES

- To enhance the students to learn field of C programming language with various techniques for enhance their analysis and problem solving techniques.
- To learn basic principles of objects, arrays and pointers for efficient implemenataion in real world problems.

COURSE OUTCOMES (CO)

- Upon successful completion of this lab Course, student will be able to

CO Number	Statement
CO1	Understand the basic structure of C programming for declaring and usage of variables.
CO2	Design an solution for given problem using time and memory complexity.
CO3	Choose the loop and decision making statements to solve given problem
CO4	Implementation of various file operations for a given application

MAPPING WITH PROGRAMME OUTCOMES

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	-	-	-	✓	✓	-	✓	-	-
CO2	-	✓	-	-	-	✓	✓	-	✓	-	-
CO3	-	✓	-	-	-	✓	✓	-	✓	-	-
CO4	-	✓	-	-	-	✓	✓	-	✓	-	-

Program List

S.No	Program
1	Write a C program to find the Quadratic equation.
2	Write a C program to find the Quadratic equation.
3	Write a C program to find the sum, Average & Standard Deviation.
4	Write a C program to find the Simpsons and Trapezoidal rule.
5	Write a C program to perform Matrix Multiplication Table using Arrays
6	Write a C program to perform string manipulation operations.
7	Write a C program to perform Matrix Manipulation using Arrays.
8	Write a C Program to check whether the given string is a palindrome or not using Pointers.
9	Write a C program to print Fibonacci Series using Recursive Function
10	Write a C program to print the student's mark sheet assuming roll number, name, marks in 5 subjects in a structure. Create an array of structures and print the mark sheet in the university pattern.
11	Write a C program to print the inventory management using file manipulation.
12	Write a C program to prepare the Electricity Bill using Files

Web References

- ✓ <http://computer.howstuffworks.com/c.html>
- ✓ <http://www.le.ac.uk/cc/tutorials/c/>
- ✓ <http://www.cprogramming.com/tutorial.html>
- ✓ www.programiz.com/c-programming
- ✓ <https://www.coursera.org/course/cprogramming>

Means of Curriculum Delivery : Power point presentation, Lab Assignments, Observation

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Application	
Course Code :	18U1CAAT01	Title : Allied 1:Numerical Methods and Statistics	Batch	2018-2021
Hrs/week	5		Semester	1
			Credits	4

COURSE OBJECTIVES

To enable the Students

- To understand the different Methods of solving numerical, algebraic and Transcendental Equations .
- To find derivatives of various formulae and Integration using numerical differentiation and integrate various functions using numerical integration.
- To have a knowledge of finding numerical solutions of ordinary differential Equations.
- To learn how to calculate various statistical constants.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Find Numerical Solution of Algebraic and Transcendental Equations.
CO2	Solve Simultaneous Linear Algebraic Equations by using different methods.
CO3	Explain the methods of Numerical Differentiation, Integration of various functions and finding Numerical Solution of Ordinary Differential Equation using different methods.
CO4	Calculate the Statistical Constants.
CO5	Explain the concepts of Correlation and Regression and their applications in practical situations

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	-	-	✓	-	✓	-	-	-	-	-
CO2	-	-	-	✓	-	✓	-	-	-	-	-
CO3	-	-	-	✓	-	✓	-	-	-	-	-
CO4	-	-	✓	✓	-	✓	-	-	✓	✓	✓
CO5	-	-	✓	✓	-	✓	-	-	-	✓	✓

SYLLABUS**UNIT I****(12 Hrs)**

The Numerical Solution of Algebraic and Transcendental Equations –The Bisection method, the method of false position , Newton – Raphson method.

UNIT II**(18Hrs)**

Solution of Simultaneous Linear Algebraic Equations – Gauss Elimination method, Gauss Jordan method, Gauss – Jacobi method, Gauss – Seidel method. Interpolation (For Equal Intervals) Newton’s Forward interpolation, Newton’s Backward interpolation.

UNIT III**(18Hrs)**

Numerical Differentiation – Newton’s Forward formula, Newton’s Backward Formula, Numerical Integration – Trapezoidal Rule, Simpson’s one third rule, Simpson’s three-eight’s rule. Numerical solution of Ordinary differential equations – Taylor Method (first order)– Runge-Kutta method (fourth order)

UNIT IV**(15Hrs)**

Measure of Central Tendency – Mean, Median, Mode - Measure of Dispersion – Range, Quartile Deviation, Standard Deviation and Mean Deviation -problems.

UNIT V**(12Hrs)**

Correlation and Regression. No derivation required.

TEXT BOOKS

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1	P.Kandasamy, K.Thilagavathy, K.Gunavathi	Numerical methods	S.Chand & Company
2	P.A. Navanitham	Business Mathematics and Statistics	Jai publishers

REFERENCE BOOKS

S. No	Author Name	Title of the Book	Publisher
1	Dr.M.K. Venkataraman	Engineering Mathematics Volume II	National publishing company
2	R.S.N. Pillai and V. Bhagavathi	Saltatistic Methods	Sultan chand and Sons company
3	P.R. Vittal	Business Mathematics	Margham Publications
4	A.Singaravelu	Numerical Methods	Meenakshi Publications

WEBSITE REFERENCE

- <https://arxiv.org/pdf/0809.0465>
- www.cfm.brown.edu/people/sg/AM35odes.pdf
- www.maths.manchester.ac.uk/cds/internal/tables/numerical.pdf
- <https://www3.nd.edu/~z xu2/acms40390F12/Lec-7.3.pdf>

Means of Curriculum Delivery: Lecture, Group Discussion, Seminar, Assignment, Google classroom.

SEMESTER I

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	18U1VBET01	Title: Value Based Education I: Environment Studies	Batch	2018-2021
			Semester	1
Hrs/ Week	2 Hrs		Credits	2

COURSE OBJECTIVES:

- To make the students understand the various types of natural resources and their responsibility in the conservation of the same.
- To impart on various eco systems, biodiversity at various levels and their conservation
- To make the students know on various types of environmental pollution, their causes , effects, their prevention and the students role in the same.

COURSE OUTCOMES (CO):

In Successful Completion of the course the students will be able to

CO Number	CO Statement
CO1	understand the interdisciplinary nature of environmental issues.
CO2	understand the core concepts and methods from ecological and physical sciences and their application in environmental problem solving.
CO3	develop a sense of community responsibility by becoming aware of scientific issues in the larger social context.
CO4	develop the sense on ethical, cross cultural and historical context of environmental issues and the links between human and natural systems.

MAPPING WITH PROGRAMME OUTCOMES

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	-	-	-	-	-	-	-	-	-	✓
CO2	-	-	-	-	-	-	-	-	-	✓	✓
CO3	-	-	-	-	-	-	-	✓	-	-	✓
CO4	-	-	-	-	-	-	-	✓	-	-	✓

SYLLABUS

UNIT I

(6 hrs)

The Multidisciplinary Nature of Environmental Studies - Definition, Scope and Importance; Need for public awareness, Natural resources - Forest resources, Mineral resources, Food resources, Energy resources and Land resources. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable life style.

UNIT II

(6 hrs)

Ecosystems - Concept of ecosystem, Structure and Functions of an ecosystem. Producer, Consumer, Decomposers, Energy flow in ecosystem, Ecological succession, food chain, food webs and ecological pyramids. Introduction, types, characteristics, features, structure and functions of forest ecosystem, grass land, desert and Aquatic Ecosystems (ponds, streams, lakes, rivers, oceans and estuaries).

UNIT III

(6 hrs)

Biodiversity and its Conservation – Introduction - Definitions: Genetic, Species and ecosystem diversity. Biogeographical classification of India. Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values, Biodiversity at Global, National and local levels. India as a mega-biodiversity nation. Hot spots of biodiversity. Threats of biodiversity: habitat loss, poaching of wild life. Man wild life conflicts. Endangered and endemic species of India. Conservation of biodiversity-insitu and Exsitu conservation of biodiversity.

UNIT IV

(6 hrs)

Environmental Pollution - Definitions, causes, effects and control measures of Air pollution, Water pollution, Soil pollution, Noise pollution and Thermal pollution. Solid waste management: causes, effects and control measures of Urban and Industrial wastes. Role of an individual in prevention of pollution. Pollutions case studies. Disaster management: Floods, Earthquake, Cyclone and Landslides.

UNIT V

(6 hrs)

Social issues and the Environment - Sustainable development, urban problems related to energy, water conservation, rain water harvesting, water shed management. Resettlement and rehabilitation of people. Environmental ethics: issues and possible solution. Climate change, global warming, ocean layer depletion, acid rain, nuclear accident and holocaust, case studies. Consumerism and waste product. Environmental protection Act. Air (prevention and control of pollution) Act. Wild life protection act. Forest conservation Act. Issues involved in enforcement of environmental legislation. Public awareness. Human population and the environment.

TEXT BOOKS:

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1	Prof R. Ranganathan	Environmental Studies.	Bharathiar University Publications

REFERENCE BOOKS:

S. No	Author Name	Title of the Book	Publisher
1	Ritu Bir	Environmental Studies	Vayu Education of India
2	Erach Bharucha	Textbook for Environmental Studies	University Press India Pvt. Ltd
3	Anubha Kaushik & C.P.Kaushik	Perspectives in Environmental Studies	New Age International Publishers

Means of Curriculum Delivery: Lecture, Group Learning, Seminar, Assignment, Google Classroom.

SEMESTER I

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U1SBST01	Title : Skill Based Subject 1:Mathematics for Competitive Examinations – I	Batch	2018-2021
Hrs/week	2 Hrs		Semester	1
			Credits	2

COURSE OBJECTIVES

To enable the Students

- To understand the fundamental arithmetic skills and problem solving.
- To learn about the average and Problems on numbers.
- To solve problem related to Ages and Calander and Clocks.

COURSE OUTCOMES (CO)

- On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Recall the basic concepts of numerical computation.
CO2	Solve problems on ages, races and games of skills, stocks and shares.
CO3	Find solution to the problems on calender and clocks.

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	-	✓	✓	✓	-	✓	✓	-	-	✓	-	✓
CO2	-	✓	✓	✓	-	✓	✓	-	-	✓	-	✓
CO3	-	✓	✓	✓	-	✓	✓	-	-	✓	-	✓

SYLLABUS**UNIT I (6 Hrs)**

Numbers – H.C.F and L.C.M of Numbers – Decimal Fractions – Simplification

UNIT II (6 Hrs)

Square Roots and Cube Roots – Average - Problems on Numbers

UNIT III (6 Hrs)

Problems on Ages - Surds and Indices-Percentage

UNIT IV (6 Hrs)

Races and games of skill – Calendar

UNIT V (6 Hrs)

Clocks – Stocks and shares (Simple Problems only)

TEXT BOOK

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1	R. S. Agarwal	Quantitative Aptitude (for Competitive Examinations)	S. Chand and Company Limited

REFERENCE BOOKS

S. No	Author Name	Title of the Book	Publisher
1	R.V.Praveen	Quantitative Aptitude and Reasoning,	PHI Learning pvt. Ltd
2	Abhijit Guha	Quantitative Aptitude for Competitive Examinations	Tata Mc-Graw Hill Publishing Company

WEBSITE REFERENCE1. <https://www.careerbless.com/aptitude/qa/home.php>2. <https://www.indiabix.com/>

Means of Curriculum Delivery : Lecture, Group Discussion, Seminar, Assignment, Google classroom.

SEMESTER II

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U2TALT02	Title : Tamil – II	Batch	2018-2021
Hrs/week	5Hrs		Semester	2
			Credits	3

Nehf;fk;

- rq;f ,yf;fpaj;jpd; khz;G, ,yf;fpa eak;, ePjp newpfs;, gf;jpabd; jd;ik, rq;ffhy ,yf;fz newpfs; Mfpatw;iw mwpe;J nfhs;Sjy;
- tho;f;ifia thOk; newpKiwfs;> ntw;wpf;fhd cj;jpfs;> jkpo; tsu;r;rpf;fhd ekJ flikfs; Mfpad Fwpj;J njspT ngWjy;

Course Outcome (CO)

CO Number	CO Statement
CO1	தமிழ் மொழியின் வாயிலாக பண்பாடு, பகுத்தறிவு, கலை மற்றும் மரபு முதலியவற்றை அறிந்து வாழ்க்கையில் பயனடைதல்.
CO2	வாழ்வியல் நெறிமுறைகளை உணர்ந்து மனிதநேயத்துடனும் உயர்ந்த குறிக்கோளுடனும் சமுதாயத்தில் மதிக்கத்தக்கவர்களாக இருத்தல்.
CO3	இலக்கியங்களின் வாயிலாக வாழ்க்கை முறைகளைத் தெரிந்து கொள்ளுதல்.
CO4	அறத்தின் வழிநின்று பொருளீட்டி இன்பம் துய்ப்பது உன்னத வாழ்வின் அடிப்படை என்பதை திருக்குறள் மூலம் மாணவர்கள் உணர்தல்.
CO5	நாட்டுப்பற்று, சமூகம், பெண்ணியம் குறித்த விழுமியங்கள் சார்ந்த கவிதைகளும், கருத்து பரிமாற்றத்திறனுக்கு அடிப்படையாக உள்ள இலக்கணப் பகுதியும், தன் சுய சிந்தனையுடன் படைப்பாக்கத்திறனை வளர்த்தெடுக்கும் வகையில் சிறுகதைப்பகுதியும் காலவோட்டத்துடன் இணைந்து மாணவர்களுக்கு சிந்திக்கும் ஆற்றலைப் பெற வழி வகை செய்தல்.

MAPPING WITH PROGRAMME OUTCOMES

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	-	-	-	-	-	-	-	-	-	-
CO2	-	-	-	-	-	-	✓	-	-	-	-
CO3	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	✓	-	-	-
CO5	✓	-	-	-	✓	✓	-	-	✓	-	-

பாடத்திட்டம்

அலகு - 1 செய்யுள் திரட்டு : சங்க இலக்கியங்கள் (20 மணிநேரம்)

1. குறுந்தொகை - முதல் 5 பாடல்கள் (கடவுள் வாழ்த்து உட்பட)
2. நற்றிணை - பிரசங்கலந்த வெண்கவைத்தீம்பால் (பா.எண்-110) இ விளையாடு ஆயமோடு (பா.எண்-68)
3. கலித்தொகை - சுடர்த் தொடிஇ கேளாய் (பா.எண்-51)
4. புறநானூறு - ஆவுமானிய பார்ப்பன மாக்களும் (பா.எண்-9)இ காய்நெல் லறுத்துக் கவளம்கொளினே (பா.எண்-184)
5. பத்துப்பாட்டு - குறிஞ்சிப்பாட்டு முழுவதும்

அலகு - 2 செய்யுள் திரட்டு : நீதிஇ பக்தி இலக்கியம் (15 மணிநேரம்)

1. திருக்குறள் - அடக்கமுடைமை (அதிகாரம்-13)இ புறங்கூறாமை (அதிகாரம்-19)
2. நாலடியார் - கல்வி (அதிகாரம்-14)இ நல்லினம் சேருதல்(அதிகாரம்-18)
3. திருவெம்பாவை - முதல் 10 பாடல்கள்
4. நாச்சியார் திருமொழி - ஆறாம் திருமொழி

அலகு - 3 உரைநடை: கட்டுரைத் தொகுப்பு (15 மணிநேரம்)

1. இறையன்பு - கல்வியும் கடவுள் தன்மையும் (வாழ்க்கையே ஒரு வழிபாடு)
2. அகிலன் - பதினாறு பேறுகள் (வெற்றியின் ரகசியங்கள்)
3. முனைவர் பாஞ்.இராமலிங்கம் - மானிட உளவியல் (மானிட உளவியல்)
4. வ.செ.குழந்தைசாமி - தமிழ் வழிக்கல்வி-தயக்கங்கள்இ தடைகள் (தமிழ் வளர்ச்சி)
5. மணவை முஸ்தபா - தமிழுக்கு அறிவியல் அன்னியமா? (அறிவியல் நோக்கில் கம்பர்)
6. சுகி.சிவம் - வாழப்பழகுவோம் வாருங்கள் (வாழப்பழகுவோம் வாருங்கள்)
7. இரா. பிரேமா - பெண்ணியக் கோட்பாடுகளும் தமிழிலக்கிய ஆய்வில் அதன் தேவையும் பயனும் (பெண்ணியம் அணுகுமுறைகள்)

அலகு - 4 இலக்கிய வரலாறு (15 மணிநேரம்)

1. எட்டுத்தொகைஇ பத்துப்பாட்டு நூல்கள்
2. நீதி நூல்கள் - அறிமுகம்
3. நாயன்மார்கள் ஆழ்வார்கள் - அறிமுகம்
4. உரைநடையின் தோற்றமும் வளர்ச்சியும்

அலகு - 5 இலக்கணமும் பயன்பாட்டுத் தமிழும் (10 மணிநேரம்)

1. அகம்இ புறம் - திணைஇ துறை விளக்கங்கள்
2. முதல் இ கருஇ உரிப்பொருள்
3. மடல்கள்இ விண்ணப்பங்கள்
4. மொழிபெயர்ப்பு (அலுவலகப் பகுதிஇ பொதுப்பகுதி)

TEXT BOOKS

S. No	Author Name	Title of the Book	Publisher	Year / Edition
1	தமிழ்த்துறை	பொதுத்தமிழ் - II (செய்யுள் திரட்டு , கட்டுரைத் தொகுப்பு)	கோவை கலைமகள் கலை அறிவியல் கல்லூரி	2017

REFERENCE BOOKS

எ. ந. நே. நே.	யுவாழச யேஅந	வுவைடந முக வாந டிழமும	ரீடிடனாநச	லுநயச .: நுனவைழை
1	-	குறுந்தொகை	கழக வெளியீடு	முதற் பதிப்பு: ஜூன் 2000
2	புலவர் நா.இராமையாபிள்ளை (உ.ஆ)	நற்றிணை	வர்த்தமானன் பதிப்பகம், சென்னை.	முதற் பதிப்பு: 1999.
3	-	கலித்தொகை,	கழக வெளியீடு	முதற் பதிப்பு: டிசம்பர் - 1996.
4	-	புறநானூறு,	கழக வெளியீடு	முதற் பதிப்பு: டிசம்பர் - 1996.
5	புலவர் அ.மாணிக்கனார் (உ.ஆ)	பத்துப்பாட்டு – ஐஐ ஆம் தொகுதி	வர்த்தமானன் பதிப்பகம், சென்னை.	1999.
6	பேரா.அ.மாணிக்கம்(ப.ஆ)	நாலடியார்	மணிவாசகர் பதிப்பகம், சென்னை.	முதற் பதிப்பு: செப்டம்பர்-1995.
7	பேரா.அ.மாணிக்கம்(உ.ஆ)	பன்னிரு திருமுறைகள் (தொகுதி 11)	வர்த்தமானன் பதிப்பகம், சென்னை.	பிப்ரவரி - 2009.
8	டாக்டர் கதிர்முருகு	நாச்சியார் திருமொழி	சாரதா பதிப்பகம், சென்னை.	முதற் பதிப்பு: ஜூன் - 2010.
9	வெ.இறையன்பு	வாழ்க்கையே ஒரு வழிபாடு	விஜயா பதிப்பகம், கோவை.	எட்டாம் பதிப்பு: டிசம்பர் - 2013.
10	அகிலன்	வெற்றியின் ரகசியங்கள்	தாகம் பதிப்பகம், சென்னை.	பதினொன்றாம் பதிப்பு: ஜனவரி – 2001.
11	முனைவர் பாஞ்.இராமலிங்கம்	மானிட உளவியல்	சாரதா பதிப்பகம், சென்னை.	திருத்திய பதிப்பு: ஜூன்- 2007.
12	வ.செ.குழந்தைசாமி	தமிழ் வளர்ச்சி	பாரதி பதிப்பகம், சென்னை.	இரண்டாம் பதிப்பு: ஜூலை – 2007.
13	முணவை முஸ்தபா	அறிவியல் நோக்கில் கம்பர்	வானதி பதிப்பகம், சென்னை.	இரண்டாம் பதிப்பு: 2003.
14	சுகி.சிவம்	வாழப்பழகுவோம் வாருங்கள்	வானதி பதிப்பகம், சென்னை.	ஆறாம் பதிப்பு: நவம்பர் - 2003.
15	இரா.பிரேமா	பெண்ணியம் அணுகுமுறைகள்	தமிழ்ப் புத்தகாலயம், சென்னை- 17.	முதல் பதிப்பு: 1998
16	கா.கோ.வெங்கட்ராமன்	தமிழ் இலக்கிய வரலாறு	கலையக வெளியீடு, திண்டுக்கல்.	இரண்டாம் பதிப்பு: ஜூன் - 2002.
17	மது.ச.விமலானந்தம்	தமிழ் இலக்கிய வரலாறு	முல்லை நிலையம், சென்னை	2014.
18	மு.பரமசிவம்	நற்றமிழ் இலக்கணம்	சைவசித்தாந்த	முதற்பதிப்பு:1995.

SEMESTER II

Programme Code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U2FRLT02	Title : Language I- French II	Batch	2018-2021
			Semester	II
Hrs/week	5 Hrs.		Credits	3

COURSE OBJECTIVES

To enable the students to understand the basic structure of French language.

COURSE OUTCOMES (CO)

In Successful Completion of the course the students will be able to

CO Number	CO Statement
CO1	have access to the works of great french writers.
CO2	Develop the skills of speaking and writing without flaws.
CO3	Help the learners to have a good critical thinking.

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	✓	-	-	-	-	-	-	-	-	-	-
CO2	✓	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	-	✓	-	-	-	-	-

SYLLABUS

Prescribed text : ALORS I

Units : 6 – 10

Authors : Marcella Di Giura
Jean-Claude Beacco

Available at : Goyal Publishers Pvt Ltd
86, University Block
Jawahar Nagar (Kamla Nagar)
New Delhi – 110007.
Tel : 011 – 23852986 / 9650597000

Question Paper Pattern : Semester II

(ALL QUESTIONS TO BE SET ONLY FROM THE PRESCRIBED TEXT)

Maximum Marks: 75

Time: 3 hrs.

SECTION A (10)

1. CHOISISSEZ LA MEILLEURE RÉPONSE: (10X1=10)

SECTION B (20)

2. TRADUISEZ LES TEXTES SUIVANTS EN ANGLAIS:(4/5) (4X5=20)

(Pg Nos :86 ex-4,104 ex-3,116 ex-3a,b,134 ex-4,146 ex-2,162,163,164,165,166,167)

SECTION C (45)

3. COMPRÉHENSION (8x1=8)

4. EXERCICES DE GRAMMAIRE:(5X5=25) (EITHER/OR)

5. FAITES DES PHRASES:(6/8) (6X1=6)

6. TRADUISEZ LES EXPRESSIONS EN ANGLAIS :(6/8) (6X1=6)

SEMESTER II

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U2HILT02	Title : Language I-Hindi II	Batch	2018-2021
			Semester	II
Hrs/week	5 Hrs.		Credits	3

COURSE OBJECTIVES

To enable the students to understand the basic structure of Hindi language.

COURSE OUTCOMES (CO)

In Successful Completion of the course the students will be able to

CO Number	CO Statement
CO1	help the learners to communicate with others in any part of India with ease.
CO2	Develop the skills of speaking and writing without flaws.
CO3	Help the learners to have a good critical thinking.

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	✓	-	-	-	-	-	-	-	-	-	-
CO2	✓	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	-	✓	-	-	-	-	-

SYLLABUS

1. MODERN POETRY ; Draupadi by Narendra Sharma

PUBLISHER : Rajkamal Prakashan,
1B Nethaji Subash Marg,
New Delhi.

2. ONE ACT PLAY: EKANKĪ SANKALAN – Lesson ‘Strike’ omitted

By Veerendra kumar mishra

PUBLISHER : VANI PRAKASHAM
NEW DELHI – 110 002.

3. TRANSLATION : HINDI – ENGLISH ONLY,
(ANUVADH ABYAS – III)
Lessons.1 – 15 only
- PUBLISHER : DAKSHIN BHARATH HINDI PRACHAR SABHA
CHENNAI – 600 017.
4. LETTER WRITING : (Leave letter, Job Application, Ordering books,
Letter to Publisher, Personal letter)
5. CONVERSATION : (Doctor & Patient, Teacher & Student, Storekeeper &
Buyer, Two Friends, Booking clerk & Passenger at
Railway station, Autorickshaw driver and Passenger)

Reference: Bolchal Ki Hindi Aur Sanchar by Dr. Madhu Dhavan, Vani Prakashan, New Delhi.

SEMESTER II

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U2MLLT02	Title : Language I-Malayalam II	Batch	2018-2021
Hrs/week	5 Hrs.		Semester	II
			Credits	3

COURSE OBJECTIVES

To enable the students to understand the basic structure of Malayalam language.

COURSE OUTCOMES (CO)

In Successful Completion of the course the students will be able to

CO Number	CO Statement
CO1	Help the learners to learn other Indian languages like Sanskrit,Tamil etc., through Malayalam without much effort.
CO2	Develop the skills of speaking and writing without flaws.
CO3	Help the learners to have a good critical thinking.

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	✓	-	-	-	-	-	-	-	-	-	-
CO2	✓	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	-	✓	-	-	-	-	-

SYLLABUS

Unit I & II - Biography

Unit III, IV & V - Smaranakal

Text books prescribed:

Recent editions of the following books only are recommended

Unit I & II - Kanneerum Kinavum- V.T.Bhatahirippad
(D.C. Books, Kottayam)

Unit III, IV & V - Balyakalasmarnakal – Madhavikkutty

(D.C. Books, Kottayam)

Reference books:

1. Jeevacharitrasahithyam – Dr. K.M. George (N.B.S. Kottayam)
2. Jeevacharitrasahithyam Malayalathil – Dr. Naduvattom Gopalakrishnan (Kerala Bhasha Institute, Trivandrum)
3. Athmakathasahithyam Malayalathil – Dr. Vijayalam Jayakumar (N.B.S. Kottayam)
4. Sancharasahithyam Malayalathil – Prof. Ramesh chandran. V, (Kerala Bhasha Institute, Trivandrum)

SEMESTER II

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	18U2ENLT02	Title:Functional English – II	Batch	2018-2021
Hrs/ Week	5 Hrs		Semester	2
			Credits	3

COURSE OBJECTIVES:

- To enable the students to understand the basic English grammar.

COURSE OUTCOMES (CO):

In Successful Completion of the course the students will be able to

CO Number	CO Statement
CO1	develop an interest in the minds of the students to enjoy and appreciate the literary works in English.
CO2	develop the skills of speaking and writing without flaws.
CO3	help the learners to have a good critical thinking.

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	✓	-	-	-	-	-	-	-	-	-	-
CO2	✓	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	-	✓	-	-	-	-	-

SYLLABUS**UNIT –I-POETRY****(Hours-12)**

Stopping By Woods On a Snowy Evening – Robert Frost

The Ballad of Father Gilligan – William Butler Yeats

The Daffodils - William Wordsworth

UNIT- II- PROSE**(Hours-12)**

1. The Selfish Giant- Oscar Wilde

2. My lost Dollar- Stephen Butler Leacock

3. On The Rule of The Road- A.G. Gardiner

UNIT- III- GRAMMAR AND VOCABULARY**(Hours-18)**

1. Tenses
2. Transformation of Sentences
3. Describing a Simple Process, Paraphrasing
4. Homonyms
5. Word Blends

UNIT-IV- VERBAL APTITUDE AND COMPOSITION**(Hours-18)**

1. Common Errors
2. Reading Comprehension
3. Essay Writing
4. Letter Writing (Formal and In- Formal)

UNIT- V- DIALOGUE WRITING (CONVERSATION EXERCISES)**(Hours-15)**

1. Suggestions , Sympathy, Complaining, Agreement & Apologising

TEXT BOOKS:

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1	A.G.Xavier	An Anthology of Popular Essays and Poems	Macmillan Indian Limited.
2	Prof. A.E.Subramanian	Gifts to Posterity- An Anthology of Modern Short Stories	Chitra Publications, Chennai.

REFERENCE BOOKS:

S. No	Author Name	Title of the Book	Publisher
1	N.Krishnaswamy	Modern English- A Book of Grammar Usage and Composition	Macmillan Indian Limited
2	Prof.K.Ramappa, Retd.	Essential English Grammar Usage & Composition	M. I. Publications

Means of Curriculum Delivery: Lecture, Group Discussion, Seminar, Assignment, Case Studies, Google Classroom.

SEMESTER II

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U2CACT04	Title: Core 4: C++ Programming	Batch:	2018-2021
Hrs/week:	5 Hrs		Semester:	2
			Credits:	4

COURSE OBJECTIVES

On Completion Of This Course

- To provide knowledge on Object-Oriented Programming Concepts using C++.
- To learn about the concepts like Abstraction, Encapsulation, Inheritance, and Polymorphism.
- To enhance the students knowledge in writing C++ Programs and the concepts of File Handling

COURSE OUTCOMES (CO)

CO Number	CO Statement
CO1	Explain the fundamental concepts of OOPS languages and control structures.
CO2	Elucidate on classes, functions and constructor.
CO3	Give in detail about types of inheritance and solving problems using the same.
CO4	Explain about Arrays and Pointers and their Functions.
CO5	Demonstrate on File Handling Mechanism.

MAPPING WITH PROGRAM OUTCOMES:

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	✓	-	✓	-	-	-
CO2	-	✓	✓	-	-	✓	-	✓	-	-	-
CO3	-	✓	✓	-	-	✓	-	✓	-	-	-
CO4	-	✓	✓	-	-	✓	-	✓	-	-	-
CO5	-	✓	✓	-	-	✓	-	✓	-	-	-

SYLLABUS**UNIT I****(Hours - 12)**

Introduction of C++ - Key Concepts – OOP advantage – OOP language – I/O in C++- C++ declarations. Control Structures: Decision Making statements: if, else, jump, go to, break, continue, Switch case statements. Loops in C++: for, While, do, while loops. Functions in C++ - inline function.

UNIT II**(Hours - 12)**

Classes and objects: Declaring Objects – defining member functions – static member Variables and functions – arrays of objects – friend functions – overloading member functions – Bit fields and classes - Constructors And Destructors with static members.

UNIT III**(Hours - 11)**

Operator overloading: overloading unary, binary operators – overloading friend function – type conversion. Inheritance: Types of Inheritances – single, multilevel, multiple, hierarchical, hybrid, and Multipath inheritance – virtual base classes – abstract classes.

UNIT IV**(Hours - 13)**

Pointers – Declarations – Pointer to class , object – this pointer – pointer to derived classes and base classes – Arrays – characteristics – arrays Of classes – Memory modals – new and delete operators – dynamic objects – Binding , Polymorphism and virtual Functions.

UNIT V**(Hours - 12)**

Files – File Stream classes – File modes – Sequential Read / Write operations – Binary and ASCII files – Random access operation – Templates – Exception handling – Strings – declaring and initializing string objects – string attributes – miscellaneous functions.

Text Books

S.No	Author Name	Title of the Book	Publishers
1.	Ashok Kamthane	Object oriented Programming with ANSI and Turbo C++	Pearson Education Publications
2	Merbert Schildt	“Teach your self C++”	Tata McGraw Hil

Reference Books

S.No	Author Name	Title of the Book	Publishers
1	E.Balagurusamy	Object Oriented Programming with C++	Tata McGraw Hill Publishing Ltd., New Delhi
2	Robert Lafore	Object Oriented Programming in C++	Galgotia
3	Yeswant Kanetkar	“Let us C++”	BPB Publications,
4	John R.Hubbard	Programming with C++	Schaum’s Outline Series,

WEBSITE REFERENCES:

1. www.cplusplus.com/doc/tutorial/
2. <https://en.wikipedia.org/wiki/C%2B%2B>
3. <https://www.cprogramming.com/>
4. https://en.wikibooks.org/wiki/C%2B%2B_Programming

Means of Curriculum Delivery: Lecture, Group Learning, Seminar, Assignment, Google classroom.

SEMESTER II

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U2CACT05	Title: Core 5: Data Structures	Batch	2018-2021
Hrs/week:	5 Hrs		Semester	2
			Credits	4

COURSE OBJECTIVES:

On Completion Of This Course

- To enhance the students to understand the basic concepts of Data Structures and Algorithm, concepts of Stack, Queue and Linked List, Searching, Sorting, Trees, Graphs and File Operations.
- To demonstrate about writing algorithms and reframe step by step approach in solving problems with the help of fundamental data structures.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Recall information for writing Algorithms in solving problems.
CO2	Choose appropriate data structure as applied to specify problem definition.
CO3	Apply problem solving skills & provide a foundation for advanced programming courses using an object-oriented programming methodology.
CO4	Use linear & Non linear Data structures like stacks, Queues, Linked list etc., and show operations like searching, insertion, deletion, traversing mechanism etc.on various data structures.
CO5	Illustrate how to store and retrieve data stored in both main memory and in secondary memory.

MAPPING WITH PROGRAM OUTCOMES:

Cos/ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	✓	✓	✓	-	-	-	-	-	-	-	✓
CO2	✓	✓	✓	-	-	-	-	-	-	-	✓
CO3	✓	✓	✓	-	-	-	-	-	-	-	✓
CO4	✓	✓	✓	-	-	-	-	-	-	-	✓
CO5	✓	✓	✓	-	-	-	-	-	-	-	✓

SYLLABUS**Unit I: (Hours-10)**

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

Unit II: (Hours-12)

Stacks and Queues - Fundamentals – Structure - Operations - Multiple Stacks And Queues. Applications Evaluation of Expressions.

Unit III: (Hours-13)

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.

Unit IV: (Hours-13)

Trees:Binary Tree-Binary Tree representation-Binary Tree Traversal.Graphics:Introduction-Definition and terminology-Graph representation-Traversals,Connected Component and Spanning Tree Searching and Sorting: Binary, Sequential, And Fibonacci - Internal Sorting Insertion, Quick, Merge, Heap, Radix Sorts - External Sorting - Sorting With Disks – K-way Merging.

Unit V: (Hours-10)

Files - Queries and Sequential Organizations - Index Techniques. File Organizations Sequential, Random, Linked Organizations - Inverted Files – Cellular Partitions.

TEXT BOOKS

Recent editions of the following books only are recommended

S.No	Author Name	Title of the Book	Publishers
1.	Ellis Horowitz & Sartaj Sahani	“Fundamentals of data structure”	Galgothia book source, 1999, Latest Edition
2	Ashok N Kamthane	“Programming and Data Structures”	PearsonEducation, Latest Edition
3	Malik,D,S.,	Data structures using C++ [1 st Edition]	Cengage Learning
4	Vaughan H.Patil,	Data Structures Using C++[1 st Edition]	Oxford Higher Education

WEBSITE REFERENCES

1. https://en.wikipedia.org/wiki/Data_structure
2. https://www.tutorialspoint.com/data_structures_algorithms/data_structures_basics.htm
3. <https://www.geeksforgeeks.org/data-structures/>
4. <https://www.cs.cmu.edu/.../Stacks%20and%20Queues/Stacks%20and%20Queues.html>
5. https://www.tutorialspoint.com/data_structures_algorithms/tree_data_structure.htm

Means of Curriculum Delivery : Lecture, Group Discussion, Seminar, Assignment, Google classroom.

SEMESTER II

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U2CACP06	Title: Core 6: Data Structures and C++ Programming - Practical	Batch	2018-2021
Hrs/week:	4 Hrs		Semester	2
			Credits	3

COURSE OBJECTIVES

- To enhance the students to learn field of Data Structure and C++ programming language with various techniques for enhance their analysis and problem solving techniques.
- To learn basic principles of Object Oriented Programming and implementation in real world problems.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student will be able to

CO Number	Statement
CO1	Illustrate looping & Decision Making Statements to solve the problems in C++
CO2	Explain about compilation and debug programs in C++ Language using functions and files.

MAPPING WITH PROGRAMME OUTCOMES

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	✓	-	✓	-	-	-
CO2	-	✓	✓	-	-	✓	-	✓	-	-	-

Program List

S.No	Program
1	Write a simple C++ Program using Classes and Objects.
2	Write a C++ Program to create a class to implement the Data Structure STACK. Write a constructor to initialize the TOP of the STACK. Write a member function PUSH () to insert an element and member function POP () to delete an element check for overflow and underflow conditions.
3	Write a C++ Program to implement a data structure Queue Operation.
4	Write a C++ Program to read an integer number and find the sum of all the digits until it reduces to a single digit using constructors, destructors and inline member functions.
5	Write a C++ Program to create a class FLOAT that contains one float data member. Overload all the four Arithmetic operators so that they operate on the object FLOAT.
6	Write a C++ Program to create a class STRING. Write a Member Function to initialize, get and display strings. Overload the Operator “+” to concatenate two Strings, “==” to Compare two strings.
7	Write a C++ Program to create class, which consists of EMPLOYEE Detail like E_Number, E_Name, Department, Basic, Salary, and Grade. Write a member function to get and display them. Derive a class PAY from the above class and write a member function to calculate DA, HRA and PF depending on the grade.
8	Write a C++ Program using Function Overloading to read two Matrices of different Data Types such as integers and floating point numbers. Find out the sum of the above two matrices separately and display the sum of these arrays individually.
9	Write a C++ Program to create a File and to display the contents of that file with line numbers.
10	Write a C++ Program to merge two files into a single file.
11	Write a C++ Program to count the total nodes of the <i>LINKED LIST</i> .
12	Write a user defined function USERFUN () which has the formatting commands like setw (), showpoint, showpos, precision (). Write a program which prints multiplication table and uses USERFUN () for formatting.

Web References

1. www.cittumkur.org/manuals/cse/CSE_cpl_manual-2016.pdf
2. www.betbkec.com/assets/images/faculty/cplab.pdf
3. www.baburd.com.np/books/LabManual-ComputrProgramming.pdf
4. www.becbapatla.ac.in/it/C%20lab%20manual.pdf

Means of Curriculum Delivery : Power point presentation, Lab Assignments, Observation

SEMESTER II

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U2CAAT02	Title : Allied 2:Discrete Mathematics	Batch	2018-2021
Hrs/week	5 Hrs		Semester	2
			Credits	4

COURSE OBJECTIVES

- To enable the Students
- To understand the concept of set theory, Logic and Relations
- To learn the concept of languages and Grammars
- To know the concept of Graph theory and its applications

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of set theory, partition of sets, inclusion and exclusion principles.
CO2	Write an argument using logical notation and determine if the argument is valid or invalid.
CO3	Describe the binary relations between two sets and determine if the relation is partial order relation or equivalence relation using set operations.
CO4	Explain the concepts of formal languages and construct the finite state automata.
CO5	State the concept of graphs, enumerate the types of graphs and their applications practical situations.

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	✓	-	✓	-	-	-	-	✓
CO2	-	✓	✓	✓	-	✓	-	-	-	✓	✓
CO3	-	✓	✓	✓	-	✓	-	-	-	-	✓
CO4	-	-	✓	✓	-	✓	-	-	-	-	✓
CO5	-	-	✓	✓	-	✓	-	-	-	-	✓

SYLLABUS**UNIT I****(12Hrs)**

Set Theory - Types of sets - Venn - Euler Diagrams - Set operations & Laws of set theory - Fundamental Products - Partitions of Sets – Minsets - Algebra of sets and Duality - Inclusion and Exclusion Principle.

UNIT II**(15Hrs)**

Mathematical Logic – Introduction - Propositional Calculus – Basic logical Operations -Tautologies – Contradiction – Argument - Predicate Calculus.

UNIT III**(18Hrs)**

Relations – Binary Relations – Set operation on relations - Types of Relations – Partial order relation – Equivalence relation – Functions – Types of functions – Invertible functions.

UNIT IV**(18Hrs)**

Languages – Operations on Languages – Grammar – Types of Grammars – Finite State Machine – Finite State Automata.

UNIT V**(12Hrs)**

Graph Theory – Basic terminology – Paths, Cycle & Connectivity – Sub graphs – Types of Graphs – Representation of Graphs in Computer Memory - Trees – Properties of Trees – Binary trees- Traversing Binary Tree.

TEXT BOOK

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1	J.K. Sharma	Discrete Mathematics	Macmillan India Ltd

REFERENCE BOOKS

S. No	Author Name	Title of the Book	Publisher
1	J. P Tremblay R Manohar	Discrete Mathematics Structures with Applications to Computer Science	Mc Graw Hill International Publications
2	Dr.M.K.Venketaramen,Dr.N.S ridharan, N.Chandarasekaran	DiscreteMathematics	The National publishing Company
3	V.Sundaresan	Discrete Mathematics	A.R.Publications
4	M.K.Chandborthy	Introduction to Discrete Mathematics	Books and Allied Pvt.Ltd.

WEBSITE REFERENCE

1. www.coursera.com
2. www.tutorialpoint.com

Means of Curriculum Delivery : Lecture, Group Discussion, Seminar, Assignment, Google classroom.

SEMESTER II

Programme Code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U2VBET02	Title : Value Based Education 2 (அறவியலும் பண்பாடும்)	Batch	2018-2021
Hrs/week	2 Hrs		Semester	2
		ETHICS & CULTURE	Credits	2

நுவாஉஉள யனெ ஊரடவரசந (மனிதவள மாண்பு - தனிமனித விழுமியங்கள்)இசமுதாய விழுமியங்கள்)

நோக்கம்

ஒவ்வொருவரும் தன்னை உயர்த்திக் கொண்டுஇ சமுதாய மக்களுடன் இணக்கமாக வாழ்ந்து சமுதாயத்தையும் உயர்த்த வேண்டும். உன்னத இலட்சியத்திற்காக வாழ்ந்து நமது வாழ்க்கையை அர்த்தமுள்ளதாக ஆக்கிக் கொள்ள வேண்டும்.

கவலைக்கு ஆதாரமான ஆசை மற்றும் சினம் ஆகியவற்றைத் தவிர்ப்பதன் மூலம் கவலையை ஒழிப்பதற்கான பயிற்சி பெறுதல்

கல்வி, அரசியல், பொருளாதாரம் மற்றும் விஞ்ஞானம் ஆகியவற்றுக்கும் சமுதாயத்திற்கும் உள்ள தொடர்பினை அறிந்து கொள்ளுதல்

Course Outcome (CO)

CO Number	CO Statement
CO1	தன்னை உள்நோக்க அறிவால் ஆராய்ந்து தன்னிடமுள்ள உணர்ச்சி வயப்பட்ட குணங்களை எல்லாம் மாற்றியமைத்துக் கொள்ளச் செய்தல்.
CO2	தனி மனித ஒழுக்கங்களை அறிந்து, முறைப்படி வாழ்ந்து சமுதாயத்தில் தங்களை உயர்த்திக் கொள்ளச் செய்தல்.
CO3	வாழ்க்கையின் இலக்கை அடையத் தேவையான தகுதியை வளர்த்துக் கொள்ளச் செய்தல்.
CO4	சமுதாயத்தோடு இணக்கமாக வாழவும், சுயசிந்தனை, ஆற்றலை வளர்த்து பிரச்சினைகளுக்குத் தீர்வுகாணவும் வழி வகுத்தல்.
CO5	போட்டிகள் நிறைந்த இவ்வுலகில் சமுதாயம், அரசியல், பொருளாதாரம் ஆகிய சூழல்களைத் துணிச்சலாக எதிர்கொள்ள தன்னம்பிக்கையை வழங்குதல்.

MAPPING WITH PROGRAMME OUTCOMES

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	✓	✓	-	-	-	✓	-	✓
CO2	-	✓	-	-	✓	-	-	✓	✓	-	✓
CO3	-	-	-	-	✓	-	-	-	✓	-	-
CO4	-	-	✓	-	✓	✓	✓	✓	✓	✓	✓
CO5	-	-	-	-	✓	✓	-	✓	✓	-	-

பாடத்திட்டம்**அலகு – 1****(5 மணிநேரம்)**

மனிதவள மாண்பின் அவசியம் - குறிக்கோள் இ மதிப்புகள் - வாழ்வின் நோக்கமும் தத்துவமும் - வாழ்க்கைத் தேவைகள் இ காப்புகள் - அறநெறிகள் இ அறிவின் நிலைப்பாடுகள்.

அலகு – 2**(5 மணிநேரம்)**

எண்ணம் ஆராய்தல் - எண்ணம் எழக்காரணங்கள் - எண்ணம் ஆராய்தல் பயிற்சி - ஆசை சீரமைத்தல் - ஆசை சீரமைத்தல் பயிற்சி.

அலகு – 3**(5 மணிநேரம்)**

சினம் தவிர்த்தல் - சினத்தின் விளைவுகள் - சினம் தவிர்த்தல் பயிற்சி - கவலை ஒழித்தல் - கவலையின் வகைகளும் விளைவுகளும் - கவலை ஒழித்தலுக்கான பயிற்சி.

அலகு – 4**(8 மணிநேரம்)**

மனிதனின் பரிணாமம் - பிரபஞ்ச தன்மாற்றம் - உயிரினத் தன்மாற்றம் - ஆறாம் அறிவின் மேம்பாடு - மனித வேறுபாட்டிற்கான காரணங்கள் - ஏழு சம்பத்துகள் - பதினாறு காரணங்கள் - மனத் தூய்மை தரும் சமுதாய நலன்.

அலகு – 5**(7 மணிநேரம்)**

கல்வியும் சமுதாயமும் - கல்வியின் சமுதாய நோக்கங்கள் - கல்வியின் சமுதாயப் பணிகள் - அரசியலும் சமுதாயமும் - பொருளாதாரமும் சமுதாயமும் - விஞ்ஞானமும் சமுதாயமும்.

வநலவு டீமுமுமுளு

S. No.	Author Name	Title of the Book	Publisher	Year / Edition
1	-	தனிமனித விழுமியங்கள்	என்.ஜி.எம். கல்லூரிஇ பொள்ளாச்சி.	2015.
2	-	சமுதாய விழுமியங்கள்	என்.ஜி.எம். கல்லூரிஇ பொள்ளாச்சி.	2014.

சுநுகுநுகுநுகுநுகு டீமுமுமுளு

S. No.	Author Name	Title of the Book	Publisher	Year / Edition
1	-	வாழ்வியல் விழுமியங்கள்,	வேதாத்திரி பதிப்பகம் இ ஈரோடு.	பதினொன்றாம் பதிப்பு: 2013
2	-	மனவளக்கலை யோகா	வேதாத்திரி பதிப்பகம் இ ஈரோடு.	பதினொன்றாம் பதிப்பு: ஜூலை – 2015.

SEMESTER II

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U2SBST02	Title : Skill Based Subject 2: Mathematics for Competitive Examinations -II	Batch	2018-2021
Hrs/week	2 Hrs		Semester	2
			Credits	2

COURSE OBJECTIVES

- To enable the Students
- To know about concept of Interest and Profit and loss.
- To develop the ability in solving Permutation , Combinations and Bankers Discount.
- To Solve Problems of Permutations and combinations.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to achieve the following outcomes.

CO Number	CO Statement
CO1	Explain the basic concepts of mathematics of finance.
CO2	Solve the problems on time and distance, time and work.
CO3	Apply the concept of permutation and combinations to solve problem.

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	✓	-	✓	✓	-	-	✓	✓
CO2	-	✓	✓	✓	-	✓	✓	-	-	✓	✓
CO3	-	✓	✓	✓	-	✓	✓	-	-	✓	✓

SYLLABUS**UNIT I (6Hrs)**

Profit and Loss – Ratio and Proportion

UNIT II (6Hrs)

Partnership – Chain Rule

UNIT III (6Hrs)

Time and Distance – Time and work

UNIT IV (6Hrs)

Permutation & Combinations

UNIT V (6Hrs)

True Discount- Bankers Discount

(Simple Problems only)**TEXT BOOKS**

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1	R. S. Agarwal	Quantitative Aptitude (for Competitive Examinations)	S. Chand and Company Limited

REFERENCE BOOKS

S. No	Author Name	Title of the Book	Publisher
1	R.V.Praveen	Quantitative Aptitude and Reasoning	PHI Learning pvt. Ltd
2	Abhijit Guha	Quantitative Aptitude for Competitive Examinations	ata Mc-Graw Hill Publishing Company

WEBSITE REFERENCE

- <https://www.careerbless.com/aptitude/qa/home.php>
- <https://www.indiabix.com/>

Means of Curriculum Delivery : Lecture, Group Discussion, Seminar, Assignment, Google classroom.

SEMESTER – III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U3CACT07	CORE 7: OPERATING SYSTEMS	Batch	2018-2021
			Semester	III
Hrs/week	5 Hrs		Credits	4

Course Objectives:

- To gain knowledge on OS concepts and functioning of modern OS.
- To understand the structure of OS
- To acquire the knowledge of process and Inter process Communications
- To understand the deadlock
- To enhance the knowledge of Memory management and files.

COURSE OUTCOMES (CO)

On successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Define the concepts of operating systems and security
CO2	Explain operating system structure, process and threads
CO3	Illustrate Inter process Communication and scheduling
CO4	Describe deadlock and deadlock prevention
CO5	Explain memory management, file systems and directories

MAPPING WITH PROGRAMME OUTCOMES

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	✓	-	✓	-	-	-	-	✓
CO2	-	✓	✓	✓	-	-	-	-	-	-	✓
CO3	-	✓	✓	✓	-	-	-	-	-	-	✓
CO4	-	✓	✓	✓	-	✓	-	-	-	-	✓
CO5	-	✓	✓	✓	-	-	-	-	-	-	✓

Syllabus

UNIT I **(Hours - 11)**

Introduction: What is OS -History of OS -Computer Hardware Review- OS Concepts: Processes-Deadlocks-Memory Management-I/O-Files-Security-The Shell-Recycling Concepts.

UNIT II **(Hours - 13)**

OS Structure: Monolithic Systems- Layered Systems- Virtual Machines- Exo Kernels-Client Server Models. Processes: The Process Model-Process Creation-Process Termination-Process States. Threads: The Thread Model-Thread Usage-Implementing Threads In User Space & Kernel Space-Hybrid Implementations-Scheduler Activations-Pop-Up Threads-Making Single-Threaded Code Multithreaded.

UNIT III **(Hours - 12)**

Inter process Communication: Race Condition-Critical Regions-Mutual Exclusion With Busy Waiting-Sleep & Wakeup-Semaphores-Message Passing- Mutexes-Monitors-Barriers. Classical IPC Problems: The Dining Philosophers Problem-The Readers and riters Problems-The Sleeping Barber Problem. Scheduling: Introduction to Scheduling-Scheduling Batch Systems-Scheduling in Interactive Systems—Scheduling in Real-Time Systems-Policy versus Mechanism-Thread Scheduling.

UNIT IV **(Hours - 12)**

Deadlocks: Introduction, Deadlock Detection And Recovery: Deadlock Detection With One Resource of Each Type- Deadlock Detection With Multiple Resources of Each Type-Recovery From Deadlock. Deadlock Avoidance: Bankers Algorithm for Single Resource, Bankers Algorithm for Multiple Resources. Dead Prevention:Attacking the Mutual Exclusion Condition- Attacking the Hold and ait Condition- Attacking the No Preemption Condition-Attacking the Circular Wait Condition.

UNIT V: **(Hours - 12)**

Memory Management: Virtual Memory-Paging-Page Tables-Page Replacement Algorithm: The Optimal Page Replacement Algorithm-The Not Recently Used Page Replacement Algorithm-The First In First Out-The Second Chance Page Replacement Algorithm-The Clock Page Replacement Algorithm-The Least Recently Used. File Systems: Files: File Naming- File Structure-File Types—File Attributes-File Operation. Directories: Single Level Directory Systems-Two Level Directory Systems-Hierarchical Directory Systems.

TEXT BOOK

Recent editions of the following books only are recommended

S.No	Author	Title of the Book	Publisher
1	Andrew S. Tanenbaum	Modern Operating Systems	Prentice Hall of India Pvt. Ltd
2	Harvey M. Deitel	Operating Systems	Pearson Education Pvt. Ltd
3	Abraham Silberschatz, Peter Baer Galvin and Greg Gagne	Operating System Concepts	John Wiley & Sons (ASIA) Pvt. Ltd

WEBSITE REFERENCES

1. <https://en.wikipedia.org/wiki/OperatingSystem>
2. https://www.tutorialspoint.com/computer_fundamentals/computer_operating_system.htm
3. <https://www.geeksforgeeks.org/operating-systems-need-and-functions/>
4. <https://www.techopedia.com/definition/3515/operating-system-os>

Means of Curriculum Delivery : Lecture, Group Learning, Seminar, Assignment, Google classroom.

SEMESTER – III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U3CACT08	Title: Core 8: Java Programming	Batch	2018-2021
Hrs/week	5 Hrs		Semester	III
			Credits	4

COURSE OBJECTIVES

- ✓ To understand fundamentals of object – oriented programming in Java, including defining classes, invoking methods, using class libraries, etc.
- ✓ To be able to use the Java SDK environment to create, debug and run simple Java programs.
- ✓ To understand the Java Programming concepts so as to enable the students of Applications and Applets using Java

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the basic concepts of Object oriented programming
CO2	Explain the loops and decision making statements to solve the problem
CO3	Describe the concepts of threads and string
CO4	Discuss about the Applet programming
CO5	Apply about the different operations on files

MAPPING WITH PROGRAMME OUTCOMES

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	✓	✓	-	-	-	✓
CO2	-	✓	✓	-	-	✓	✓	-	-	-	✓
CO3	-	✓	✓	-	-	✓	✓	-	-	-	✓
CO4	-	✓	✓	-	-	✓	✓	-	-	-	✓
CO5	-	✓	✓	-	-	✓	✓	-	-	-	✓

Syllabus

UNIT I

(Hours - 12)

Introduction to Object-Oriented Programming : Fundamentals – Object oriented Paradigm – Basic concepts of OOP – Benefits of OOP – Applications of OOP – **Java Evolution** : History – Features – Difference between Java, C,C++ - Java and Internet – Java and WWW – Web Browsers . **Overview** : Simple Java Program - Structure – Java Tokens- Statements - JVM

UNIT II

(Hours - 12)

Constants – Variables – Data types – Operators and Expressions – Decision Making and Branching :if, if...else, nested if, switch – Decision making and looping : while, do, for – Jumps in Loops – Labelled loops – Classes, Objects and Methods

UNIT III

(Hours - 12)

Arrays, Strings and vectors - Interfaces :Multiple Inheritance – Packages : Putting classes together – Multithreaded programming – Thread exceptions – Life cycle of Thread - Thread priority – Synchronization

UNIT IV

(Hours - 12)

Managing Errors and Exceptions – Types of Errors – Exceptions – Applet Programming – Applet life cycle – Graphics Programming

UNIT V

(Hours - 12)

Managing Input / Output Files in Java: Concepts of Streams – Stream classes – Byte stream classes – Character stream classes - Using streams – I/O classes – File classes - I/O Exceptions – Creation of files – Reading / Writing characters, Byte - Handling Primitive data types – Random Access Files.

TextBooks

Recent editions of the following books only are recommended

S.No	Authors	Title	Publishers
1	Grady Booch	Object Oriented Analysis & Design with Applications	Pearson Education
2	E.Bala Gurusamy	Programming with Java	Tata McGraw Hill

Reference Books

S.No	Authors	Title	Publishers
1	Patrick Naughton Hebert Schildt	The Complete Reference Java 2	Tata McGraw
2	John R.Hubbard	Programming with Java	Tata McGraw

Web References

1. <https://www.geeksforgeeks.org/c-language-set-1-introduction/>
2. <https://www.programiz.com/java-programming>
3. [https://en.wikipedia.org/wiki/java_%28programming_language%29\](https://en.wikipedia.org/wiki/java_%28programming_language%29)
4. <https://fresh2refresh.com/java-programming/>

Means of Curriculum Delivery : Lecture, Group Learning, Seminar, Assignment, Google classroom.

SEMESTER – III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U3CACT09	Core 9: Data Communications and Networks	Batch	2018-2021
Hrs/week			6 Hrs	Semester
			Credits	4

COURSE OBJECTIVES:

- To comprehend the use of different types of transmission media and network devices.
- To understand the concepts of flow control, error control and LAN protocols.
- To understand the functions performed by Network Management System.

COURSE OUTCOMES (CO)

On successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Define the various concepts of Network models
CO2	Explain the basics of physical layer and data transmission
CO3	Explain the data link layer controls
CO4	Use communication primitives in the network layer
CO5	Examine the transport layer and application layer

MAPPING WITH PROGRAMME OUTCOMES

CO/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	-	-	-	-	-	-
CO2	-	✓	✓	-	-	✓	-	-	-	-	✓
CO3	-	✓	✓	-	-	✓	-	-	-	-	✓
CO4	-	✓	✓	-	-	✓	-	-	-	-	✓
CO5	-	✓	✓	-	-	✓	-	-	-	-	✓

Syllabus

UNIT I (Hours : 14)

INTRODUCTION -Data communications – Networks – Network Types – Internet History – Standards and Administration – Network Models : Protocol layering – TCP/IP Protocol Suite – OSI model.

UNIT II (Hours:15)

PHYSICAL LAYER -Data and Signals – Periodic analog signals – Digital signals – Transmission Impairment – Data rate limits – Performance – Digital transmission : Digital to Digital Conversion – Analog to Digital conversion - Transmission modes - Analog transmission : Digital to analog conversion – Analog to Analog conversion .

UNIT III (Hours:15)

DATA LINK LAYER-Error detection and correction : Block coding – Cyclic coding – Checksum – Forward error correction - Data Link Control (DLC) : DLC services – data link layer protocols – HDLC – Point to point Protocol(PPP) – Media Access Control(MAC) : Random Access – Controlled Access – Channelization.

UNIT IV (Hours:14)

NETWORK LAYER-Network Layer services - Packet switching – Network layer performance – IPV Address – Forwarding of IP packets – Network layer protocols : Internet protocol (IP) – ICMPv4 – Mobile IP – Next generation IP :IPv6 Addressing – The IPv6 Protocol – The ICMPv6 Protocol – Transition from IPv4 to Ipv6.

UNIT V (Hours:14)

TRANSPORT LAYER and APPLICATION LAYER-Transport layer protocols - User Datagram Protocol – Transmission Control Protocol – SCTP – Application Layer : Standard client server protocols : WWW and HTTP – FTP _ Electronic mail – Telnet – Secure Shell – Domain Name System – SNMP – ASN.1.

TEXT BOOK

Recent editions of the following books only are recommended

S.No	Author	Title of the Book	Publisher
1	Behrouz A. Forouzan	Data Communications and Networking	McGraw Hill Education pvt ltd
2	Achyut S Godbole	Data Communications and Networks	Tata McGraw Hill Education pvt Ltd
3	Uyless d. Black	Data Communications and Networks	Tata McGraw Hill Education Pvt Ltd

Means of Curriculam Delivery: Lecture,Group Learning,Seminar,Assignment,Google Classroom.

SEMESTER – III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U3CACP10	Title: Core 10: Java Programming-Practical	Batch	2018-2021
Hrs/week	6 Hrs		Semester	3
			Credits	3

COURSE OBJECTIVES:

- ✓ To enhance the students to learn field of java programming language with various techniques for enhance their analysis and problem solving techniques
- ✓ To learn basic principles of threads, applets and files for efficient implementation in real world problems.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student will be able to

CO Number	Statement
CO1	Understand the basic structure of java programming for declaring and usage of variables.
CO2	Choose the loop and decision making statements to solve given problem
CO3	Design the program using applets
CO4	Implementation of various file operations for a given application

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	✓	✓	-	-	-	✓
CO2	-	✓	✓	-	-	✓	✓	-	-	-	✓
CO3		✓	✓	-	-	✓	✓	-	-	-	✓
CO4	-	✓	✓	-	-	✓	✓	-	-	-	✓

Program List

S.No	Program
1	Write a Java Program to define a class, describe its constructor, overload the constructors and instantiate its object.
2	Write a Java Program to define a class, define instance methods for setting and retrieving values of instance variables and instantiate its object
3	Write a Java Program to define a class, define instance methods and overload them and use them for dynamic method invocation
4	Write a java program that illustrates the simple inheritance.
5	Write a java program that illustrates the multilevel inheritance.
6	Write a java program that describes the user defined exception.
7	Write a java program that illustrates the creation of threads by using runnable class
8	Write a java program that gives an example for this operator and the use of this keyword.
9	Write a java program that gives an example for super keyword.
10	Write a java program that gives demonstration of static variables and methods.
11	Write a java Program using applets to draw several shapes in the created windows.
12	Write a java program to create a banner using applet.
13	Write a java program to display an image using applet.
14	Write a java program to fill colors in shapes using applet.
15	Write a java program to create an event listener in applet

Web References

1. <https://www.coursera.org/course/javaprogramming>
2. <http://www.javaprogramming.com/tutorial.html>
3. <http://computer.howstuffworks.com/java.html>
4. <http://www.le.ac.uk/java/tutorials/>
5. www.programiz.com/java-programming

Means of Curriculum Delivery : Power point presentation, Lab Assignments, Observation

SEMESTER III

Programme Code :	B.C.A.	Programme Title	Bachelor of Computer Application	
Course Code :	18U3CAAT03	Title : Allied 3: Operations Research	Batch	2018-2021
Hrs/week	5		Semester	III
			Credits	4

COURSE OBJECTIVES

To enable the Students

- To Know Operation Research and LPP, solving LPP
- To solve transportation and assignment problems
- To acquire knowledge of queueing theory, PERT and CPM

CO Number	CO Statement
CO1	Define Operations Research, Linear Programming Problem and explain the methods of solving Solution of LPP using Graphical Method simplex method and Big M method
CO2	Solve Transportation and Assignment problems
CO3	Explain the concepts of Game Theory
CO4	Study the concepts of Queueing theory and solving simple problems
CO5	Know distinction between PERT & CPM

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	-	-	✓	-	✓	-	-	-	-	-
CO2	-	-	-	✓	-	✓	-	-	-	-	-
CO3	-	-	-	✓	-	✓	-	-	-	-	-
CO4	-	-	✓	✓	-	✓	-	-	✓	✓	✓
CO5	-	-	✓	✓	-	✓	-	-	-	✓	✓

UNIT I**(Hours:15)**

Linear Programming-Mathematical Model assumption of Linear programming-Graphical Method-Simplex method- Big-M Method-Problems

UNIT II**(Hours:15)**

The Transportation Problems- Initial Basic Feasible Solution by North West Corner rule-Least Cost Method-Vogel's Approximation Method-The Assignment Problems-Assignment Algorithm-Optimum Solution-Unbalanced Assignment problem-Travelling Salesman Problem.

UNIT III**(Hours:15)**

Game Theory-Concept of pure and Mixed Strategies-Solving 2x2 matrix with and without saddle point- nx2-2xm games-Dominance Property.

UNIT IV**(Hours:15)**

(Derivations Not included) Queueing Theory- definition of waiting line model- Queue discipline-Traffic Intensity- Poison Arrival- Birth Death process- Problems from single server: finite population model- Problems from multi server: finite population model.

UNIT V**(Hours:15)**

PERT and CPM- Network representation- Backward pass- forward pass- Computation- PERT network.

***Questions in theory and problems carry 20% and 80% marks respectively**

Text Book:

Recent editions of the following books only are recommended

S. No.	Author Name	Title of the Book	Publisher
1	Prof. V. Sundaresan, K.S. Ganapathy Subramanian, K. Ganesan	Resource Management Techniques	A.R. Publications, Chennai.

REFERENCE BOOK

S. No.	Author Name	Title of the Book	Publisher
1	Kanti Swarup, P.K. Gupta and Man Mohan	Operation Research	Sultan Chand & sons, New Delhi
2	Prof. V. Sundaresan , K.S. Ganapathy Subramanian, K. Ganesan	Resource Management Techniques	A.R. Publications, Chennai
3	Prem Kumar Gupta D.S, Hira S	Operation Research	Chand & Company Ltd, Ram Nagar, New Delhi

WEBSITE REFERENCE

- <https://www.nptel.ac.in/courses-Webcourse-contents-OPTIMIZATION-METHODS-pdf-Module>
- <https://www.mech.iitm.ac.in/nspch.pdf>
- <https://www.shodhganga.inflibnet.ac.in/bitstream/10603/11449/.pdf>

Means of Curriculum Delivery : Lecture, Group Learning, Seminar, Assignment, Google classroom.

SEMESTER : III

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U3NMET01	Non Major Elective 1 : Food Science and Nutrition	Batch	2018-2021
			Semester	III
Hrs/week	2 Hrs		Credits	2

COURSE OBJECTIVE

- . To understand the importance of Nutrition and the role of food in the maintenance of good health.
- . To know about the functions, deficiency and toxicity of nutrients.
- . To understand Malnutrition and its prevention
- . To know about various adulterants in food and the methods of detecting them.
- . To have an awareness on the prevailing laws, hygiene and sanitation relating to food safety.

COURSE OUTCOME (CO)

On successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Identify the properties of various food components.
CO2	Explain the role of nutrition in the maintenance of good health.
CO3	Explain about classification, sources, functions, requirements, health hazards due to deficiency and excess of these vitamins.
CO4	Explain the problem of malnutrition and measures to overcome the same.
CO5	Explain the various laws, available for food safety and find out whether the food is adulterated.

MAPPING WITH PROGRAMME OUTCOMES

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	-	-	-	-	✓	-	-	-	✓	-
CO2	-	-	-	-	-	✓	-	-	-	✓	-
CO3	-	-	-	-	-	✓	-	-	-	✓	-
CO4	-	-	-	-	-	✓	-	-	-	✓	-
CO5	-	-	-	-	-	✓	-	-	-	✓	-

SYLLABUS

Unit	Content
Unit-I	(6 Hours) Introduction to Nutrition: Terms used in Nutrition and Health. Definitions - Health, Nutrition, Nutrients, Foods, Diet, R.D.A., Balanced diet, Malnutrition, Under nutrition, Over nutrition, Optimum nutrition. Five Food Groups and Food guide, relationship between food and nutrition, functions of food, classification of nutrients, factors affecting food consumption and food acceptance. Elementary idea of probiotics, prebiotics and organic food.
Unit-II	(6 Hours) Basic Nutrition: WATER- Functions, sources, requirements, water balance, dehydration (ORS) and toxicity. CARBOHYDRATE - Composition and classification, source, functions, requirements. LIPIDS- composition, sources, functions, requirements, deficiency and excess; fatty acids- essential and non-essential, SFA, USFA, MUFA, PUFA, significance of fatty acids, Rancidity. PROTEINS- composition, classification sources, functions, requirements, deficiency. ENERGY- unit of energy, food as a source of energy, definition of calorie and joules, energy requirement and factors affecting it- BMR, RMR, SDA.
Unit-III	(6 Hours) VITAMINS- classification, sources, functions, requirements, deficiency and excess of the following: Vitamin A, D, E, K, C, Thiamin, Riboflavin, Niacin and B Complex. MINERALS - distribution in body, functions and sources, requirement, deficiency and excess of the following. Calcium, Phosphorus, Iron and Iodine. FIBRE- definition, types, sources, functions, importance in disease prevention
Unit-IV	(6 Hours) Ecology of malnutrition- Definition, causes and consequences of malnutrition Ecological factors leading to malnutrition such as income, family size, dietary pattern, occupation, customs, food fads, fallacies and other factors. Measures to overcome malnutrition (only introduction)- Increased agricultural production through food technology, food fortification and enrichment, Nutrition education, Nutrition intervention programme genesis, objectives and operation of school lunch programme and ICDS, Organizations that combat malnutrition- International organization – FAO, WHO, UNICEF National Organizations – ICMR, NIN, CFTRI, DFRL, ICAR
Unit-V	(6 Hours) Food Adulteration and Food Laws- Definition, Types, Common adulterants and home scale methods of detecting adulterants; Food Laws (only introduction) – PFA, BIS, AGMARK, FPO, HACCP. Food toxicants- Naturally occurring toxicants in canned foods, Alcoholic and non alcoholic beverages Sugars, preservatives, mushrooms Carcinogens in heated foods.

TEXT BOOKS:

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1	Dr.A.Indhuleka	Healthy Vittles and Bits	

REFERENCE BOOKS:

S. No	Author Name	Title of the Book	Publisher
1	Guthrie Helen.	Introductory Nutrition	Mirror/ Mosby College Publishing Times
2	Mudambi, S.R., Rajgopal, M.V.	Fundamentals of Foods and Nutrition	NewAge International Pvt. Ltd

Means of Curriculum Delivery: Lecture, Group Discussion, Seminar, Assignment, Google Classroom

அடிப்படைத் தமிழ்

பகுதி – IV : தமிழ்த்தாள் - 1 - மூன்றாம் பருவம்
(12-ம் வகுப்பு வரை தமிழ் மொழிப்பாடம் பயிலாதவர்களுக்கு)

Total Hrs: 20

அகமதிப்பீட்டுத் தேர்வு மட்டும்

நோக்கம் :

- . தமிழ் எழுத்துக்களை எழுத, படிக்க தெரிந்து கொள்ளுதல்.
- . சொற்களின் வகைகளைத் தெரிந்து கொள்ளுதல்.
- . தொடர் அமைப்புகளைத் தெரிந்து கொள்ளுதல்.
- . வாக்கியங்களைப் பிழையின்றி எழுதக் கற்றுக் கொள்ளுதல்.

பாடப்பகுதி கற்றலின் வெளிப்பாடு □ Course Outcome (CO)

CO Number	CO Statement
CO1	தமிழ் எழுத்துக்களைத் தெளிவாக எழுதுதல்.
CO2	சொற்கள் கொடுக்கப்பட்டால் அவைகள் எச்சொற்கள் என வகைகளைக் கூறுதல்.
CO3	ஒரு சொற்றொடரில் எழுவாய், செயப்படுபொருள், பயனிலை எனவை என கண்டறிந்து கூறுதல்.
CO4	வாக்கியங்களைப் பிழையின்றி எழுதுதல்.

- . தமிழ் மொழியின் அடிப்படைக் கூறுகள்.

எழுத்துக்கள் : முதலெழுத்துக்கள் (உயிர் எழுத்து, மெய் எழுத்து, உயிர்மெய் எழுத்து)

சொற்கள் : வகைகள் (பெயர்ச்சொல், வினைச்சொல், இடைச்சொல், உரிச்சொல்)

தொடர் : தொடரமைப்பு (எழுவாய், செயப்படுபொருள், பயனிலை)

- . குறிப்பு எழுதுதல் : பத்துப் பதினைந்து தொடர்களில் குறிப்பு வரைதல்

பிழைநீக்கி எழுதுதல் : (ஒற்றுப்பிழை, எழுத்துப்பிழை)

	அக மதிப்பீட்டுத் தேர்வு மதிப்பெண் வழங்கும் முறை	மதிப்பெண்கள்
1	வகுப்புத்தேர்வு □ 1	10
2	வகுப்புத்தேர்வு □ 2	10
3	மாதிரித்தேர்வு	10
4	பயிற்சிக் கட்டுரை	10
5	வாய்மொழித் தேர்வு	10
	மொத்த மதிப்பெண்கள்	50

குறிப்பு : வாய்மொழித் தேர்வில் தமிழ்ச் செம்மொழி வரலாறு

தொடர்பான வினாக்கள் மட்டுமே கேட்கப்பட வேண்டும்.

SEMESTER III

Programme Code :	BCA	Programme Title:	Bachelor of Computer Applications	
Course Code :	18U3SBST03	Skill based subject 3: Mathematics for competitive Examinations III	Batch	2018-2021
Hrs/week	2 Hours		Semester	III
			Credits	2

COURSE OBJECTIVES

To enable the Students

- ✓ To make the students to know the concept of Pipes, Cistern and Probability.
- ✓ To solve problem related to Problems on Boats and Streams .
- ✓ To make the students to know the concept of Alligation or mixture, Problem of Heights and distance, odd man out series.

COURSE OUTCOME (CO)

CO NO	CO Statements
C01	Several tricks and formulas for pipes and cisterns are available which reduces the effort to solve the problem.
C02	Solve the problems on time and distance train, boats and stream.
C03	Apply the concept of Alligation and height & distance to solve problem.

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	-	-	✓	-	✓	-	-	-	-	-
CO2	-	-	-	✓	-	✓	-	-	-	-	-
CO3	-	-	-	✓	-	✓	-	-	-	-	-

UNIT I

Pipes and cistern – Probability

(6Hrs)**UNIT II**

Problems on trains

(6Hrs)**UNIT III**

Problems on Boats and Streams

(6Hrs)**UNIT IV**

Alligation or mixture

(6Hrs)

UNIT V**(6Hrs)**Heights & Distance- Odd Man Out & Series **(Simple Problems only)****TEXT BOOK**

Recent editions of the following books only are recommended

S. No.	Author Name	Title of the Book	Publisher
1	R. S. Agarwal	Quantitative Aptitude (for Competitive Examinations)	S. Chand and Company Limited

REFERENCE BOOKS

S. No.	Author Name	Title of the Book	Publisher
1	R.V.Praveen	Quantitative Aptitude and Reasoning,	PHI Learning pvt. Ltd
2	Abhijit Guha	Quantitative Aptitude for Competitive Examinations	Tata Mc-Graw Hill Publishing Company

WEBSITE REFERENCE1. <https://www.careerbless.com/aptitude/qa/home.php>2. <https://www.indiabix.com/>**Means of Curriculum Delivery** : Lecture, Group Learning, Seminar, Assignment, Google classroom.

SEMESTER-III

Programme Code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	18U3SBST04	Skill based subject 4: Communication Skills- I	Batch	2018-2021
			Semester	III
Hrs/ Week	2 Hrs		Credits	2

COURSE OBJECTIVES:

1. To make the students to understand the barriers in their communication and the ways to overcome the same
2. To make the students to know various types of listening and the effect of enhancing the listening skills
3. To encourage Group discussion and introduce to speak in different situations and the etiquette to be maintained

COURSE OUTCOMES (CO):

On Successful Completion of the course the students should be able to achieve the following outcomes.

CO Number	CO Statement
CO1	To communicate meaningfully and effectively with others
CO2	To explain various types of listening and be a careful listener
CO3	To deal with different kinds of situations by conversing effectively and maintaining the etiquette required for such situations

MAPPING WITH PROGRAMME OUTCOMES

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	✓	-	-	-	-	-	-	-	-	-	✓
CO2	✓	-	-	-	✓	-	-	-	-	-	✓
CO3	✓	-	-	-	-	-	-	-	-	-	-

SYLLABUS**UNIT –I- COMMUNICATION**

1. Verbal and Non-Verbal Communication
2. Barriers to Communication

UNIT- II- LISTENING SKILLS

- . 1. Types of Listening
- . 2. Tips for Effective Listening
- . 3. Traits of Good Listening

UNIT- III- SPEAKING

- . Group Discussion
- . Speaking at Different Types of Interviews
- . Making Effective Telephone Calls
- . Telephone Etiquette

TEXT BOOKS:

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1	Meenakshi Raman	Communication Skills	Oxford University Press
2	Shalini Aggarwal	Essential Communication Skills	Ane Books Pvt.Ltd. New Delhi

REFERENCE BOOKS:

S. No	Author Name	Title of the Book	Publisher
1	Course team, Bharathiyar University	Communication Skills a multi- skill course	Macmillan Publishers India LTD.
2	Krishna Mohan	Developing Communication Skills	Macmillan Publishers India LTD.
3	Joyce Pereire	Technical English – II	Vijay Nicole Imprints Pvt.Ltd.

Means of Curriculam Delivery: Lecture, Group Discussion, Seminar, Assignment, Google Class Room.

SEMESTER IV

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U4CACT11	Title: Core11: WEB DESIGNING	Batch	2018-2021
Hrs/week	5 Hrs		Semester	IV
			Credits	4

COURSE OBJECTIVES

To enable the Students

- ✓ To get practiced with creating the schemas and XML Document.
- ✓ To acquire knowledge on creating web page to deploy the web applications.
- ✓ To understand scripting language in java & VB.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the basic concepts of Internet technologies
CO2	Explain the style sheets and its common tasks
CO3	Define the features of XML and compatibility
CO4	Define XML structures, tags and their elements
CO5	Define the concepts of java script and operators, objects, events

MAPPING WITH PROGRAMME OUTCOMES

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	✓	-	-	-	-	✓
CO2	-	✓	✓	-	-	✓	-	-	-	-	✓
CO3	-	✓	✓	-	-	✓	-	-	-	-	✓
CO4	-	✓	✓	-	-	✓	-	-	-	-	✓
CO5	-	✓	✓	-	-	✓	-	-	-	-	✓

Syllabus**UNIT I****(Hours - 15)**

Internet : Introduction to the Internet – Internet Technologies-Browser-**HTML:** HTML command tags- Head and Body section – Tags with Automatic Line Breaks – Values – Designing web pages – Formatting Text in html – Text color – Ordered and Unordered Lists Creating Links – Table Handling – DHTML and Style sheets – frames.

UNIT II**(Hours - 15)**

Cascading Style sheets : Introduction to CSS – Creating Style Sheets- Common Tasks with CSS - Colours – The Font Family – Assigning Classes – The Layer Tag – CSS Tags

UNIT III**(Hours - 15)**

Extensive Markup Language (XML) : Introduction – Features of XML – Support and usage – Compatibility of XML with others:-CSS and XSL-Xlinks and Xpointers-URLs Verurs URIs-XML and SGML .

UNIT IV**(Hours - 15)**

Structure of a XML Documnets - Common Errors - Structure in XML:- well formed Xml Documents-Logical Structures-Physical structures-Mark-Up and Character data-White spaces-Xml Declaration-Tags and Elements-Tag Name-Creating Document Type Declaration.

UNIT V**(Hours - 15)**

Java Script: Introduction – operators – starting with Java Scripts – Statements in Javavscripts – Working with objects – properties – Browser objects – data objects – math objects – string objects – defining objects – Handling Events in JavaScripts – Event handling Attributes Window Events – Form Elements – User Actions – Frame Objects – Document Object - Document Objects – Navigation Objects – Screen objects – Images and Animation

TextBooks

Recent editions of the following books only are recommended

S.No	Authors	Title	Publishers
1	C Xavier	World Wide Web Design with HTML	Tata McGraw Hill
2	Ramesh Bangia	Web Technology (Including HTML, CSS,XML,ASP,JavaScript,VB Script),	Firewall Media

Reference Books

S.No	Authors	Title	Publishers
1	L.Mathu Venkatesh	Krithigha Web Technology	Margham

Web References

1. <https://www.w3schools.com/html/default.asp>
2. https://www.tutorialspoint.com/internet_technologies/website_designing.htm
3. <https://fresh2refresh.com/xml-tutorial/>

Means of Curriculum Delivery : Lecture, Group Learning, Seminar, Assignment, Google classroom.

SEMESTER IV

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U4CACT12	Title : Core 12. Systems Analysis and Design	Batch	2018-2021
			Semester	IV
Hrs/week	6		Credits	4

COURSE OBJECTIVES

To enable the students

- To gather data to analyse and specify the requirements of a system.
- To design system components and environments..
- To build general and detailed models that assist programmers in implementing a system. .
- To design a database for storing data and a user interface for data input and output, as well as controls to protect the system and its data.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Understand the principles and tools of systems analysis and design
CO2	Solve a wide range of problems related to the analysis, design and construction of information systems
CO3	Apply Project Management and Requirement analysis,Principles to S/W project development.
CO4	Analyze the cost estimate and problem complexity using various Analyze estimation techniques
CO5	Plan and undertake a major individual project, prepare and deliver coherent and structured verbal and written technical reports

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	-	-	-	-	-	-
CO2	-	✓	✓	-	-	-	-	-	-	-	-
CO3	-	✓	✓	-	-	-	-	-	-	-	-
CO4	-	✓	✓	-	-	-	-	-	-	-	-
CO5	-	✓	✓	-	-	-	-	-	-	-	-

SYLLABUS

UNIT - I

(Hours : 12)

INTRODUCTION :The Systems Concept – Elements of a system – Types of system – Physical or Abstract systems – Open or closed systems – Man made Information systems-A Dynamic Personnel Information System model. The System development life cycle - Prototyping – Multifaceted role of the analyst

UNIT -II

(Hours : 12)

SYSTEM ANALYSIS : Initial Investigation – Information gathering – Kind of information – Information gathering tools – types of interviews and Questionnaires. Structured Analysis – Tools- DFD-Data Dictionary-Decision tree and tables – Feasibility Study – Steps in feasibility Analysis-Feasibility report – Cost and benefit Analysis

UNIT -III

(Hours : 13)

SYSTEM DESIGN : Process of Design – Design methodologies – Input/output and forms design – Input Design – Output Design – Forms – Types of forms – Layout considerations File Structure – File organization – Database Design – The Role of the Database Administrator

UNIT -IV

(Hours : 13)

SYSTEM IMPLEMENTATION: System Testing and Quality Assurance- The Test plan – Types of system tests – Quality Assurance : QA goals in the systems life cycle – Levels of QA – Trends in Testing. Implementation : Conversion -Activity network for conversion -Review Plan -Software Maintenance

UNIT -V

(Hours : 12)

HARDWARE SOFTWARE SELECTION AND PROJECT SCHEDULING:The Computer Industry – The Software Industry – Procedure for selection- Project Management – Crisis elimination through planning – Project Organization. System Security – Threats to security – Control Measures - Disaster/Recovery planning.

TEXT BOOKS

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1.	Elias M.Awad	Systems Analysis and Design	Galgotia.

REFERENCE BOOKS

S. No	Author Name	Title of the Book	Publisher
1.	Jeffrey A. Hoffer	Modern System Analysis and Design	Pearson Education
2.	Charles S.Wasson Leiserson,R.L. Rivest and C. Stein	System Analysis, Design, and Development: Concepts, Principles, and Practices	-

WEBSITE REFERENCES

- ✓ https://en.wikipedia.org/wiki/Systems_analysis_and_design
- ✓ https://www.tutorialspoint.com/system_analysis_and_design
- ✓ www.bcanotes.com/Sad.html
- ✓ [https://www.wisdomjobs.com > ... > System Analysis and Design](https://www.wisdomjobs.com/>...>System_Analysis_and_Design)
- ✓ https://en.wikibooks.org/wiki/Systems_Analysis_and_Design/Introduction

Means of Curriculum Delivery : Lecture, Group Learning, Seminar, Assignment, Google Classroom

SEMESTER IV

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	18U4CACT13	CORE 13: E-COMMERCE	Batch	2018-2021
			Semester	IV
Hrs/Week:	5 Hrs		Credits	3

COURSE OBJECTIVES

To enable students

- To have knowledge on concepts of e-Commerce.
- To enhance the knowledge in business strategy and inter organisational transactions.
- To understand the concepts of E-Markets, Electronic Data Interchange and E-Business.

COURSE OUTCOMES

On the successful completion of the course, students should be able to achieve the following Outcomes

CO Number	CO Statement
CO1	Understand the basic concepts and technologies used in the field of E-Commerce
CO2	Understand the knowledge of Business Strategy
CO3	Understand the processes of developing and implementing information systems
CO4	Be aware of the ethical, social, and security issues of information systems

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	-	-	-	-	-	✓	-	-	✓
CO2	-	✓	-	-	-	-	-	✓	-	-	✓
CO3	-	✓	-	-	-	-	-	✓	-	-	✓
CO4	-	✓	-	-	-	-	-	✓	-	-	✓

SYLLABUS**UNIT – I****(Hours - 13)**

Introduction to E-Commerce : Electronic Commerce – The Scope of Electronic Commerce – Definition of Electronic Commerce - Electronic Commerce and the Trade Cycle - Electronic Markets - Electronic Data Interchange – Internet Commerce – e-Commerce in perspective. **Business Strategy in an Electronic Age**: The Value chain – Supply Chains Porter’s Value Chain Model – Inter Organisational Value Chains.

UNIT – II**(Hours - 13)**

Business Strategy: Introduction to Business Strategy – Strategic Implications of IT – Technology – Business Environment – Business Capability – Existing Business Strategy – Strategy Formulation & Implementation Planning – e-Commerce Implementation – e-Commerce Evaluation. **Inter-organisational Transactions**: Inter-organisational Transactions – The Credit Transaction Trade Cycle – A Variety of Transactions.

UNIT – III**(Hours - 10)**

Electronic Markets: Markets - Electronic Markets – Usage of Electronic Markets – Advantages and Disadvantages of Electronic Markets. **Electronic Data Interchange:** Introduction to EDI – EDI Definition – The Benefits of EDI – EDI Example – EDI Implementation – EDI Agreement – EDI Security.

UNIT – IV**(Hours - 12)**

The Internet: The Internet – The Development of the Internet – TCP/IP – Internet Components – Uses of Internet. **A Page on the Web:** HTML Basics – Introduction to HTML – Further HTML – Client Side Scripting – Server Side Scripting – HTML Editors and Editing. **The Elements of E-Commerce :** Elements – e-Visibility – The e-Shop – Online Payments – Delivering Goods – Internet e-Commerce Security.

UNIT – V**(Hours - 12)**

Introduction to E-Wallet operation: What is an e-wallet-benefits of Wallet-risks-types of ewallet: paytm, MobiKwik, oxigenWallet, CitrusWallet, ItsCash, FreeCharge, AirtelMoney, Jiomoney, mRuppee, SBIBuddy, Vodaphone M-Pesa. Advantages and disadvantages of digital Wallet.

TextBooks

Recent editions of the following books only are recommended

S.No	Authors	Title	Publishers
1.	David Whitely	e-Commerce Strategy, Technologies, and Applications	McGraw Hill Education (India) Edition 2001 32 nd reprint 2013

Reference books:

S.No	Authors	Title	Publishers
1.	Dr C.S. Rayudu	E-Commerce E- Business	SHimalaya Publishing House, First Edition 2004, Reprint 2012
2.	Nidhi Dhawan	E-Commerce Concepts and Applications	International Book House Pvt Ltd First Edition 2011
3.	Efrain Turban, David King	Electronic Commerce	Pearson Education, 2009

WEBSITE REFERENCE

<https://en.wikipedia.org/wiki/E-commerce>

<https://ecommerceguide.com/guides/what-is-ecommerce/>

<https://www.youtube.com/watch?v=AhgtoQIfuQ4>

Means of Curriculum Delivery : Lecture, Group Learning, Seminar, Assignment, Google Classroom

SEMESTER IV

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U4CACP14	Title: CORE 14 : WEB DESIGNING PRACTICAL	Batch	2018-2021
Hrs/week:	6 Hrs		Semester	4
			Credits	3

COURSE OBJECTIVES:

- ✓ To enhance the students to learn field of web designing programming language with various techniques for enhance their web page developing techniques.
- ✓ To learn basic concepts of html, css and xml.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student should be able to

CO Number	Statement
CO1	Illustrate web page development and designing with use of html
CO2	Use Event Handling Functions
CO3	Apply the basic concept of xml
CO4	Use the css concepts in html
CO5	Implement the dtd in html

MAPPING WITH PROGRAMME OUTCOMES

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	✓	-	✓	-	-	✓
CO2	-	✓	✓	-	-	✓	-	✓	-	-	✓
CO3	-	✓	✓	-	-	✓	-	✓	-	-	✓
CO4	-	✓	✓	-	-	✓	-	✓	-	-	✓
CO5	-	✓	✓	-	-	✓	-	✓	-	-	✓

Program List

S.No	Program
1	Create Tables using colspan and rowspan
2	Linking using Image map
3	Embedding flash file in Html
4	Create web page in Html using frames
5	Apply effects to text and image using CSS
6	Change the font text color and background picture.
7	Changing the background color using on mouseover, on click, on change events.
8	Displaying the radio button and combo box elements in the text box
9	Moving text or image with mouse
10	Checking the shift key, Right mouse button, Left mouse button is pressed or not and finding X, Y coordinates.
11	Changing the background of the button in the tables using mouse over.
12	Displaying the text in the status bar
13	Movement of text of different boxes into single text box
14	Program For Personal Details using XML and DTD
15	Program For State Details using XML and CSS
16	Program For College Details using XLINK

Web References

- 1.<http://dte.kar.nic.in/STDNTS/CS%20IS/WEBDESING%20LAB%20PART%28HTML%29.pdf>
- 2.<http://srisukhmani.edu.in/wp-content/uploads/2014/04/wt.pdf>
- 3.http://www.hiteshpatel.co.in/practicals/Practicals_IT.pdf
- 4.<https://www.w3schools.com/html/default.asp>

Means of Curriculum Delivery : Power point presentation, Lab Assignments, Observation

SEMESTER – IV

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U4CAAT04	Allied 4:Business Accounting	Batch	2018-2021
Hrs/week	5		Semester	V
			Credits	3

COURSE OBJECTIVES:

- ✓ To make the students understand the basic accounting concept and conventions.
- ✓ To enlighten the students on the importance of cost ascertainment reduction and control.
- ✓ To enable the students to understand the preparation of budgets in the business organizations.

COURSE OUTCOMES (CO)

On the successful completion of the course, students will be able to achieve the following Outcomes

CO Number	Statement
CO1	Explain the basic accounting principles and the procedure to prepare journal and ledger
CO2	Prepare a Final accounts of Sole Trading concern.
CO3	Prepare a cost sheet with adjustments
CO4	Explain the concept of financial accounting and cost accounting.
CO5	Prepare a cash budget and sales budget

MAPPING WITH PROGRAMME OUTCOMES

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	-	-	-	-	-	-	-	-	✓
CO2	-	✓	-	-	-	-	-	-	-	-	✓
CO3	-	✓	-	-	-	-	-	-	-	-	✓
CO4	-	✓	-	-	-	-	-	-	-	-	✓
CO5	-	✓	-	-	-	-	-	-	-	-	✓

Syllabus**UNIT – I****(12 Hours)**

Introduction – Accounting Principles – Braches of accouting – accounting rules - Journalising – Ledger – Subsidiary book including cash books – Trial balance

UNIT – II**(12 Hours)**

Preparation of Final accounts: Trading, Profit and Loss Account and Balance sheet with simpe adjustmets – Outstanding Expenses and Income, Prepaid expenses, Pre received Income, Depreciation – Provision for bad debts

UNIT – III**(12 Hours)**

Cost Accounting: Meaning and elements of cost – Preparation of cost sheet with simple adjustments

UNIT – IV**(12 Hours)**

Cost Accounting: Meaing and Importance - Stores Ledger: FIFO – LIFO – Weighted average and Simple average method. Managemet Accounting: Its meaning and objectives – Difference between management accounting, financial accounting and cost accounting.

UNIT – V**(12 Hours)**

Budget and Budgetary control – Preparation of various budgets: Fexible budget – Production budget – Cash budget – Sales budget.

TextBooks

Recent editions of the following books only are recommended

S.No	Authors	Title	Publishers
1	T. S. Reddy & A. Murthy	Financial Accounting	Margham Publication, Chennai , 2016.
2	K.L. Nagarajan, N. Vinayakam, P.L. Nagarajan	Principles of Accountancy	S. Chand & Sons Company Limited, Reprint 2010.
3	N.P.Srinivasan & Sakthivel Murugan	Accounting for management	S. Chand & Company Limited, Reprint 2010.
4	T.S.Reddy & Y Hari Prasad Reddy	Cost Accounting	Margham publications, Reprint 2012
5	S.Reddy & Y Hari Prasad Reddy	Management Accounting	Margham publications, Reprint 2012

(Questions on problems and theory carry 80% and 20% of marks respectively)

SEMESTER IV

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U4NMET02	Non Major Elective 2 :	Batch	2018-2021
		Floriculture	Semester	IV
Hrs/week	2 Hrs		Credits	2

COURSE OBJECTIVE

- . To make the students know what is floriculture, its status, scope and development.
- . To make the students to know how to cultivate various types of cut flowers, arranging bouquets and scope of loose flowers to trade.
- . To make the students understand how to make various designs such as vase design, basket/mug design etc.,
- . To make the students clear about how to propagate various varieties of flowers which are Annuals & Perennials and their growing techniques.
- . The students will be made to understand whether floriculture can be taken, as their career and the opportunities available.

COURSE OUTCOME (CO)

On successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Explain the scope, status and development of floriculture in India.
CO2	To make use of cut flowers in arranging bouquets and explain the significance of loose flowers to trade.
CO3	Demonstrate how to make vase design, basket / mug design creatively by using flowers.
CO4	Explain the varieties of flowers which are annuals and perennials and their growing techniques.
CO5	Make floriculture to be taken as their career by knowing the government incentives, subsidies and other supporting agencies.

MAPPING WITH PROGRAMME OUTCOMES

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	-	-	-	-	-	-	-	-	✓	-
CO2	-	-	-	-	-	-	-	-	-	✓	-
CO3	-	-	-	-	-	-	-	-	-	✓	-
CO4	-	-	-	-	-	-	-	-	-	✓	-
CO5	-	-	-	-	-	-	-	-	-	✓	-

SYLLABUS

Unit	Content
Unit-I	(6 Hours) Floriculture – Definition, Introduction and Scope of Floriculture. Status of floriculture in India. Development of Floriculture
Unit-II	(6 Hours) Cut Flowers- Types of cut flowers, Arranging bouquets, Using floral design tools. Loose Flowers- Scope of loose flower trade, Significance in the domestic market/export,
Unit-III	(6 Hours) Design- Types of design Flower choice for design, Corsages/Boutonnieres, Vase design, Basket/mug design.
Unit-IV	(6 Hours) Propagation-Types of propagation, Annuals & Perennials, Varieties, Growing seasons, Potting techniques.
Unit-V	(6 Hours) Careers in Floriculture. Export/Import and marketing in floriculture. Government Incentives and Schemes. The role of supporting agencies.

TEXT BOOKS:

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1	Dr.S.N.Suresh	Introduction to Floriculture	

REFERENCE BOOKS:

S. No	Author Name	Title of the Book	Publisher
1	Jacob Varghese Kunthara	Know your Garden Plants	
2	Dr. B. Hemlanaik	_Production Technology of Ornamental Crops and Landscape Gardening	

Means of Curriculam Delivery: Lecture, Group Discussion, Seminar, Assignment, Case Studies, Google Classroom

சிறப்புத் தமிழ்

பகுதி □ IV : தமிழ்த்தாள் - 1 □ மூன்றாம் பருவம்
(12-ம் வகுப்பு வரை தமிழ் மொழிப்பாடம் பயின்றவர்களுக்கு)

Total Hrs: 20

அகமதிப்பீட்டுத் தேர்வு மட்டும்

நோக்கம்:

- . மேல்நிலைக் கல்வியில் தமிழ் மொழி பயின்ற மாணவர்களுக்கு இளங்கலை பட்ட வகுப்பில் தமிழ் இலக்கியத்தின் சிறப்பினை எடுத்துக் கூறுதல்.
- . மரபுக் கவிதைகள், புதுக்கவிதைகள் வேறுபாடு பற்றி மாணவர்கள் அறியச் செய்தல்.
- . சொற்களை உச்சரிக்கும் போது ஒலி வேறுபாடு அறிந்து வாக்கியங்களில் பிழை நீக்கி எழுதச் செய்தல்.
- . பயன்பாட்டுத் தமிழில் கடிதங்கள் மற்றும் மடல்கள் எழுதுவதற்குப் பயிற்சியளித்தல்.
- . பாடப்பகுதியோடு இணைந்த இலக்கிய வரலாற்றுச் செய்திகளை அறியச் செய்தல்.

பாடப்பகுதி கற்றலின் வெளிப்பாடு - Course Outcome (CO)

CO Number	CO Statement
CO1	மரபுக்கவிதை, புதுக்கவிதைகளுக்கு இடையில் உள்ள வேறுபாடுகள் அறிதல்.
CO2	மொழித்திறன் பயிற்சியின் மூலம், மாணவர்கள் பிழைநீக்கி எழுதுதல்.
CO3	இன்றைய சூழலுக்கு ஏற்ப, விண்ணப்பங்கள், மடல்கள் மற்றும் கடிதங்கள் எழுதச்செய்தல்
CO4	இலக்கியங்களின் வாயிலாக படைப்புகளின் வரலாறுகள், நோக்கம் உணர்தல்.
CO5	சொற்களைக் கொண்டு வாக்கியங்கள் அமைப்பதற்குப் பயிற்சி எடுத்தல்.

- கூறு 1 : பாரதியார் கவிதைகள்
கண்ணன் என் சேவகன்
பாரதிதாசன் - அழகின் சிரிப்பு (முழுவதும்)
மீரா (கவிஞர்) - குக்கூ (புதுக்கவிதை)
- கூறு 2 மொழித்திறன்
பிழைநீக்கி எழுதுதல் - றன, ரண வேறுபாடு அறிதல்
ளன, ழன, லன வேறுபாடு அறிதல்
ன, ண, ந வேறுபாடு அறிதல்
குறில் நெடில் வேறுபாடு அறிதல்
- கூறு 3 : கடிதங்கள் எழுதுதல் - பாராட்டுக் கடிதம், நன்றிக்கடிதம், அழைப்புக்கடிதம்,
அலுவலக விண்ணப்பம்.
- கூறு 4 சொற்களைத் தந்து தொடர்களை அமைக்கும் பயிற்சி அளித்தல், வல்லினம்
மிகும் இடங்கள்.
- கூறு 5 பாடந்தழுவிய வரலாறு.

	அக மதிப்பீட்டுத் தேர்வு மதிப்பெண் வழங்கும் முறை	மதிப்பெண்கள்
1	வகுப்புத்தேர்வு <input type="checkbox"/> 1	10
2	வகுப்புத்தேர்வு <input type="checkbox"/> 2	10
3	மாதிரித்தேர்வு	10
4	பயிற்சிக் கட்டுரை	10
5	வாய்மொழித் தேர்வு	10
	மொத்த மதிப்பெண்கள்	50

குறிப்பு : வாய்மொழித் தேர்வில் தமிழ்ச் செம்மொழி வரலாறு
தொடர்பான வினாக்கள் மட்டுமே கேட்கப்பட வேண்டும்.

SEMESTER IV

Programme Code :	All UG II Years	Programme Title:	Bachelor of Computer Applications	
Course Code :	18U4SBST05	Skill Based Subject 5: Mathematics for Competitive Exmainations IV	Batch	2018-2021
Hrs/week	2 Hours		Semester	IV
			Credits	2

COURSE OBJECTIVES

To enable the Students

- . To make the students to know the concept of Problems of Interest and Venn Diagrams
- . To solve problem related to Problems on Sequence and series.
- . To develop the skills in solving problems in Mental Ability and Logical reasoning.

COURSE OUTCOME (CO)

CO NO	CO Statements
C01	Explicate the concept of finance and discover the inference using Venn- diagram.
C02	Solve the problems on logarithms, area, Volume, Sequence and series.
C03	Find solution to the problems on Tabulation, graphs and puzzles.

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1											
CO2											
CO3											

(6Hrs)**UNIT I**

Simple Interest-Compound Interest -Logical Venn Diagram

UNIT II**(6Hrs)**

Logarithms – Sequence and series

UNIT III**(6Hrs)**

Area-Volume and Surface areas

UNIT IV**(6Hrs)**

Tabulation-Bar Graphs-Puzzles

UNIT V**(6Hrs)**

Pie Charts-line Graphs- Mental Ability and Logical reasoning

(Simple Problems only)

TEXT BOOK

S. No.	Author Name	Title of the Book	Publisher	Year / Edition
1	R. S. Agarwal	Quantitative Aptitude (for Competitive Examinations)	S. Chand and Company Limited	7 th Revised Edition -2007

REFERENCE BOOK

S. No.	Author Name	Title of the Book	Publisher	Year / Edition
1	R. V. Praveen	Quantitative Aptitude and Reasoning	PHI Learning pvt. Ltd	2012
2	Abhijit Guha	Quantitative Aptitude for Competitive Examinations	Mc-Graw Hill Publishing Company	7 th reprint-2003

WEBSITE REFERENCE1. <https://www.careerbless.com/aptitude/qa/home.php>2. <https://www.indiabix.com/>

Means of Curriculum Delivery : Lecture, Group Discussion, Seminar, Assignment, Google classroom.

SEMESTER-IV

Programme Code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	18U4SBST06	Skill Based Subject 6: Communication Skills- IV	Batch	2018-2021
			Semester	IV
Hrs/ Week	2 Hrs		Credits	2

COURSE OBJECTIVES:

- 1.To know clearly the use of various symbols for pronouncing the words with proper sounds.
2. to make aware of various techniques of reading and writing different reports.

COURSE OUTCOMES (CO):

On Successful Completion of the course the students will be able to achieve the following outcomes.

CO Number	CO Statement
CO1	To be able to pronounce the words clearly with proper pronunciation.
CO2	Read the given materials properly and to write meaningful reports

MAPPING WITH PROGRAMME OUTCOMES

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	✓	-	-	-	-	-	-	-	-	-	✓
CO2	✓	-	-	-	✓	-	-	-	-	-	✓
CO3	✓	-	-	-	-	-	-	-	-	-	-

SYLLABUS**UNIT-I : READING & WRITING**

- . Resume Preparation
- . Report Writing
- . Minutes of a Meeting
- . Data Representation and Interpretation
- . Memos

UNIT- II : SOUNDS & SYMBOLS

1. Vowels
2. Consonants
3. Diphthongs
4. Stress and Intonation

TEXT BOOKS:

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1	Meenakshi Raman	Communication Skills	Oxford University Press
2	Shalini Aggarwal	Essential Communication Skills	Ane Books Pvt.Ltd. New Delhi

REFERENCE BOOKS:

S. No	Author Name	Title of the Book	Publisher
1	Course team, Bharathiyar University	Communication Skills a multi- skill course	Macmillan Publishers India LTD.
2	Krishna Mohan	Developing Communication Skills	Macmillan Publishers India LTD.
3	Joyce Pereire	Technical English – II	Vijay Nicole Imprints Pvt.Ltd.

Means of Curriculam Delivery: Lecture, Group Discussion, Seminar, Assignment, Google Classroom

SEMESTER – V

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U5CACT15	Core 15.: ASP.Net and C#	Batch	2018-2021
Hrs/week	5		Semester	V
			Credits	4

COURSE OBJECTIVES

To enable the students

- To learn about the basic concepts of ASP .NET.
- To learn about the ASP .NET object model and its architecture.
- To learn about the C# and its functions.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand about ASP.Net environment and its applications.
CO2	Know about the various forms in Visual Basic and Session controls.
CO3	Write various applications using C# Language in the .NET Framework.
CO4	Develop distributed applications using .NET Framework.
CO5	Create various applications using C#.Net framework

MAPPING WITH PROGRAMME OUTCOMES

COs /POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	-	-	-	-	-	-
CO2	-	✓	✓	-	-	-	-	-	-	-	-
CO3	-	✓	✓	-	-	-	-	-	-	-	-
CO4	-	✓	✓	-	-	-	-	-	-	-	-
CO5	-	✓	✓	-	-	-	-	-	-	-	-

SYLLABUS**UNIT -I****(Hours: 12)**

Getting set up: ASP .NET? Setting up, environment, overview. Programming basics: basics, program flow, coding techniques, designing applications, dynamic website application, processing ASP .NET applications, visual basic .NET.

UNIT -II**(Hours: 11)**

Programming ASP .NET with Visual Basic .NET Web Forms and ASP .NET: web forms. ASP.NET configuration, Scope and State: Configuration, state, Application object, ASP Sessions, Session object and sample project.

UNIT -III**(Hours: 13)**

ASP .NET objects and components: scripting object model, components and controls, project example, more active components. Web services and ASP .NET: web service development, WSDL and SOAP, web services background. ASP .NET and SQL Server: using SQL server, using databases in ASP .NET, ActiveX data objects, ADO .NET object model, Coding SQL and Project.

UNIT -IV**(Hours: 12)**

Understanding .NET: C# framework - .Net strategy, origins, framework, CLR, base classes, Visual Studio .Net, languages, benefits. Overview of C#: simple program, namespaces, main returning value, passing string objects, command line arguments, mathematical functions, compile time errors, structure. Literals, Variables and Data types.

UNIT -V**(Hours:12)**

Operators and Expressions, Decision making and branching, Decision making and looping, Handling Arrays.

TextBooks

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1.	Dave Marcer	ASP .NET – A Beginner's Guide	McGraw Hill Education India Private Limited.
2.	E. Balagurusamy	Programming in C# - A Primer	Tata McGraw Hill Pvt Ltd.

Reference Books:

S. No	Author Name	Title of the Book	Publisher
1.	Stephen C. Perry	Core C# and .NET	Pearson Education.
2.	Karli Watson, Christian Nagel, Jacob Hammer Pedersen, Jon Reid, and Morgan Skinner	BEGINNING VISUAL C#	Wiley Publishing, Inc.

WEBSITE REFERENCES

1. <https://www.quora.com/What-is-the-difference-between-C-and-ASP-net>
2. <https://docs.microsoft.com/en-us/visualstudio/get-started/csharp/tutorial-aspnet-core>
3. <https://softwareengineering.stackexchange.com/.../relationship-between-c-net-asp-asp->
4. <https://stackoverflow.com/questions/.../whats-the-difference-between-asp-net-and-c>

Means of Curriculum Delivery : Lecture, Group Learning, Seminar, Assignment, Google Classroom

SEMESTER-V

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U5CACT16	Title: Core 16: Relational Database Management System	Batch	2018-2021
Hrs/week:	5 Hrs		Semester	V
			Credits	4

COURSE OBJECTIVES:

On Completion of this Course

- To understand the concepts of RDBMS.
- To have knowledge on DBMS & RDBMS.
- To enhance their on SQL, DDL, DML, DCL Statements, Select, group by and having clause String and set operations, Aggregate Functions, Nested Sub Queries.
- To develop the skills of Embedded and Dynamic SQL.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concept of Database and Database Design
CO2	Use the Commands and understand table
CO3	Use SQL query structure and modify the table
CO4	Describe about function, grouping and PL/SQL
CO5	Define the concept of Embedded SQL and PL/SQL

MAPPING WITH PROGRAM OUTCOMES:

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	-	-	-	-	-	✓
CO2	-	✓	✓	-	-	-	-	-	-	-	✓
CO3	-	✓	✓	-	-	-	-	-	-	-	✓
CO4	-	✓	✓	-	-	-	-	-	-	-	✓
CO5	-	✓	✓	-	-	-	-	-	-	-	✓

SYLLABUS**UNIT I****(Hours-12)**

Database Concepts: A Relational approach: Database –Relationships –DBMS –Relational Data Model –Integrity Rules–Theoretical Relational Languages. Database Design: Data Modelling and Normalization: Data Modelling –Dependency –Database Design –Normal forms –Dependency Diagrams–De -normalization –Another Example of Normalization.

UNIT II**(Hours-12)**

Oracle9i: Overview: Personal Databases –Client/Server Databases –Oracle9i an introduction –SQL *Plus Environment –SQL –Logging into SQL *Plus –SQL *Plus Commands –SQL *Plus Worksheet. Oracle Tables: DDL: Naming Rules and conventions –Data Types –Constraints –Creating Oracle Table –Displaying Table Information –Altering an Existing Table –Dropping, Renaming, Truncating Table –Table Types.

UNIT III**(Hours-12)**

Working with Table: Data Management and Retrieval: DML –adding a new Row/Record –Customized Prompts Updating and Deleting an Existing Rows/Records –retrieving Data from Table –Arithmetic Operations –restricting Data with WHERE clause –Sorting –Revisiting Substitution Variables –DEFINE command –CASE structure.

UNIT IV:**(Hours-12)**

Functions and Grouping: Built-in functions –Grouping Data. Multiple Tables: Joins and Set operations: Join –Set operations.

PL/SQL: A Programming Language: History –Fundamentals –Block Structure –Comments –Data Types –Other Data Types –Declaration –Assignment operation –Substitution Variables –Arithmetic operators.

UNIT V**(Hours-12)**

Control Structures and Embedded SQL: Control Structures –Nested Blocks –SQL in PL/SQL–Data Manipulation. PL/SQL Cursors and Exceptions: Cursors –Implicit & Explicit Cursors and Attributes–Cursor FOR loops –SELECT...FOR UPDATE –WHERE CURRENT OF clause–Cursor with Parameters –Cursor Variables.

TEXT BOOKS

Recent editions of the following books only are recommended

S.No	Author Name	Title of the Book	Publishers
1.	Nilesh Shah	Database Systems using Oracle	Prentice Hall
2	Majumdar & Bhattacharya	Database Management Systems	TMH
3	Bill Pribyl, Steven Feuerstein	Oracle pl/sql programming	O'Reilly Media, Inc.
4	Smita vaze, subhalaxmi joshi	Computer Fundamentals and RDBMS	Himalaya Pub

WEBSITE REFERENCES

1. <https://en.wikipedia.org/wiki/RDBMS>
2. <https://www.tutorialspoint.com/DBMS>
3. <https://www.geeksforgeeks.org/>
4. [https://www.cs.cmu.edu/..](https://www.cs.cmu.edu/)
5. <https://www.tutorialspoint.com/>

Means of Curriculum Delivery: Lecture, Group Learning, Seminar, Assignment, Google classroom.

SEMESTER V

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U5CACP17	Core 17 : ASP .NET AND C# - PRACTICAL	Batch	2019-2022
Hrs/week	6		Semester	V
			Credits	4

COURSE OBJECTIVES

To enable the students to gain knowledge about the teaching methodologies useful for the implementation and console based application and web based application.

COURSE OUTCOMES (CO)

At the end of the practical session, students would be well-versed in

CO Number	CO Statement
CO1	Design, create, build, and debug arithmetic operations for displaying numeric output using .NET applications.
CO2	Developing a console application in ASP .NET.
CO3	Compute different operations using looping statements.
CO4	Developing applications using C#

MAPPING WITH PROGRAMME OUTCOMES

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	-	-	-	-	-	✓
CO2	-	✓	✓	-	-	-	-	-	-	-	✓
CO3	-	✓	✓	-	-	-	-	-	-	-	✓
CO4	-	✓	✓	-	-	-	-	-	-	-	✓
CO5	-	✓	✓	-	-	-	-	-	-	-	✓

S.No	Program List
1	Write a ASP .NET program to perform arithmetic operation.
2	Write a ASP .NET program for conversion of numbers
3	Write a ASP .NET program to develop a simple calculator.
4	Write a ASP .NET program to demonstrate the text control
5	Write a ASP .NET program to demonstrate the checkbox control.
6	Write a C# program using arrays.
7	Write a C# program for converting numbers into words.
8	Write a C# program for arithmetic operations
9	Write a C# program to check whether given string is a palindrome or no
10	Write a C# program to read number and check ODD or EVEN.
11	Write a C# program that prints out Fibonacci Series.
12	Write a C# program to convert from Fahrenheit to Celsius and Celsius to Fahrenheit

WEBSITE REFERENCES

1. www.codingfusion.com/Asp--Net-Practice-Questions
2. www.corporatebpl.com/cistuploads/DotNetMEAssignment.pdf
3. tusharkant.com/2013/04/asp-net-lab-manual-programs.html
4. <https://www.sanfoundry.com/csharp-programming-examples/>
5. <https://www.w3resource.com/csharp-exercises/>

Means of Curriculum Delivery : Power point presentation, Lab Assignments, Observation

SEMESTER : V

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U5CACP18	Title : CORE 18 : WEB TECHNOLOGY PRACTICAL	Batch	2018 – 2021
Hrs/week	6 Hours		Semester	5
			Credits	3

COURSE OBJECTIVES:

- To enhance the students to learn field of web technology programming with various techniques for enhance their software development techniques.
- To learn basic concepts of VB.Net, XML and Java Scripting language.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student will be able to

CO Number	Statement
CO1	Illustrate the basic operations in software with use of VB.Net
CO2	Use the basic concept of VB.Net, XML and Java Scripting language
CO3	Apply the concept of java script in html
CO4	Apply the concept of xml

MAPPING WITH PROGRAMME OUTCOMES

COs/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	✓	-	✓	-	-	-
CO2	-	✓	✓	-	-	✓	-	✓	-	-	-
CO3	-	✓	✓	-	-	✓	-	✓	-	-	-
CO4	-	✓	✓	-	-	✓	-	✓	-	-	-

Program List

S.No	Program
1	Create a VB .Net program to add a string to Combo box with value of Textbox when user clicks button control.
2	Create a VB .Net program to display hierarchical representations of items with tree view control using Runtime coding.
3	Create a VB .Net program to handle user defined Exceptions.
4	Create a VB .Net program for Employee details to read and display the data using constructors and member functions.
5	Create an application in VB .Net to demonstrate the following events: i. Click ii. Mouse Down iii. Key Down iv. Form Load
6	Create an application in VB.Net for File Menu with Menu items New, Open, Save, Print and Exit & Edit Menu with Menu items Cut, Copy, Paste, Find and Undo.
7	Create an application in VB .Net for student information database and perform the following operations: i. Addition ii. Deletion iii. Updation
8	Design a website using web form to show the current date and time when a user clicks the button.
9	Using Java Script's Window and document objects and their properties and various methods like alert(), eval(), ParseInt() etc. methods to give the dynamic functionality to HTML web pages.
10	Writing Java Script snippet which make use of Java Script's inbuilt as well as user defined objects like navigator, Date Array, Event, Number etc.
11	Write code which does the form validation in various INPUT elements like Text Filed, Text Area, Password, Selection list etc.
12	Writing XML web Documents which make use of XML Declaration, Element Declaration, Attribute Declaration.

Web References

1. <http://www.slideshare.net/mobile/KHUSJI/practical-file-on-web-technologyhtml>
2. <http://www.scribd.com/doc/46781919/Web-Technology-Lab-Program>
3. <http://www.lecturenotes.in/practicals/21872-lab-manuals-for-web-technologies-wt-by-kiran-babu>
4. <https://www.gtubeit6.blogspot.com/p/web-technologies.html?m=1>

Means of Curriculum Delivery : Power point presentation, Lab Assignments, Observation.

SEMESTER-V

Programme Code:	All III- Year UG	Programme Title	All III- Year UG	
Course Code:	18U5NCCT01	Aptitude & Soft Skills- I	Batch	2018-2021
			Semester	V
Hrs/ Week	2 Hrs		Credits	-

COURSE OBJECTIVES:

- To acquire inter personal skills, problem solving skills and be an effective goal oriented team player.
- To equip the students with the required soft skills that would instill confidence and courage in them, to take up new opportunities for their career.
- To know about improving various soft skills required while working in a team.
- To understand the various methods of solving problems involving numerical and logical reasoning.
- To understand the methods of solving certain problems not using calculations but using only mental ability.
- To know how to face the personal interview effectively.

COURSE OUTCOMES (CO):

On Successful Completion of the course the students should be able to achieve the following outcomes.

CO Number	CO Statement
CO1	Apply the inter personal and problem solving skills in the placement drive.
CO2	To apply the behavioral skills required for promoting individual competence by implementing the principles of interpersonal communication and value – based living to meet the market expectations.
CO3	grasp the approaches and strategies to solve problems with speed and accuracy.
CO4	. Ability to reason critically by analyzing , elevating and extending arguments.
CO5	. Explain the concepts deal with graphs,tables,number sequence and texts.

SYLLABUS**UNIT I: SOFT SKILLS**

1. Empathy
2. Intrapersonal Skills
3. Interpersonal Intelligence
4. Problem Solving Skills

5. Critical Thinking
6. Aptitude and Assessment Test

UNIT II: APTITUDE

- . Numerical Reasoning
- . Mental Ability
- . Logical Reasoning

TEXT BOOKS:

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1	Prof .N. Lakshmana Perumal	Technical English – I	Sri Krishna Hitech Publishing Company Pvt. Ltd.
2	R. S. Aggarwal	Quantitative Aptitude for Competitive Examinations.	English, Paperback

REFERENCE BOOKS:

S. No	Author Name	Title of the Book	Publisher
1	Joyce Pereire	Technical English – II	Vijay Nicole Imprints Pvt.Ltd.

Means of Curriculam Delivery: Lecture, Group Discussion, Seminar, Assignment, Google Classroom

SEMESTER VI

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U6CACT19	Core 19:SOFTWARE TESTING	Batch	2019-2022
			Semester	VI
Hrs/week	5		Credits	4

COURSE OBJECTIVES

- To make the students to understand Software Testing principles.
- To discuss the distinctions between types of testing.
- To understand the essential characteristics of tool used for test automation.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	List a range of different software testing techniques and strategies and be able to apply specific (automated) unit testing method to the projects.
CO2	Distinguish characteristics of structural testing methods
CO3	Demonstrate the integration testing which aims to uncover interaction and compatibility problems as early as possible
CO4	Discuss about the functional and system testing methods.
CO5	Demonstrate various issues for object oriented testing with planning, Management, Execution and Reporting.

MAPPING WITH PROGRAMME OUTCOMES

CO/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	-	-	-	-	-	✓
CO2	-	✓	✓	-	-	-	-	-	-	-	✓
CO3	-	✓	✓	-	-	-	-	-	-	-	✓
CO4	-	✓	✓	-	-	-	-	-	-	-	✓
CO5	-	✓	✓	-	-	-	-	-	-	-	✓

SYLLABUS**UNIT I****(Hours: 11)**

Principles of Testing: Context of Testing in Producing Software, A Test in Time, Automation Syndrome, Putting it All Together -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.

UNIT II**(Hours: 12)**

White Box Testing: What is White box testing, Static testing, Structural testing; Challenges –Black Box Testing: What is? Why? When? and How to do? Black Box Testing – Integration Testing: What is Integration Testing?, Types, Phases, Scenario Testing, Defect Bash.

UNIT III**(Hours: 12)**

System and Acceptance Testing: Overview-Why is system testing done?, Functional vs. Non-Functional Testing, Functional system testing, Non-Functional testing, Acceptance testing – Performance Testing: Factors Governing, Methodology, Tools and Process for Performance Testing.

UNIT IV**(Hours: 12)**

Regression Testing: What is Regression testing? , Types of Regression testing, when to do Regression testing? and how to do Regression testing?–Testing –Ad hoc Testing: Overview, Buddy, Pair Testing, Exploratory Testing, Iterative Testing, Agile and Extreme Testing, Defect Seeding.

UNIT V**(Hours: 13)**

Test Planning, Management, Execution and Reporting: Test Planning, Test Management, Test Process, and Test Reporting –Software Test Automation: What to? and Scope of Automation, Design and Architecture of Automation, Requirements for Test Tool/Framework, Process Model, and Steps for Tool Selection and Deployment, Challenges in Automation –Test Metrics and Measurement: Types of Metrics

TEXT BOOKS

Recent editions of the following books only are recommended

S.NO	Author Name	Title of the Book	Publisher
1.	Srinivasan Desikan, Gopalsamy Ramesh	Software Testing Principles and Practices	Pearson Education

WEBSITE REFERENCES

- [1.https://www.softwaretestingmaterial.com/software-testing/](https://www.softwaretestingmaterial.com/software-testing/)
- [2.https://www.guru99.com/software-testing-introduction-importance.html](https://www.guru99.com/software-testing-introduction-importance.html)
- [3.https://en.wikipedia.org/wiki/Software_testing](https://en.wikipedia.org/wiki/Software_testing)
- [4.https://www.tutorialspoint.com/software_testing](https://www.tutorialspoint.com/software_testing)
- [5.https://www.softwaretestinghelp.com/types-of-software-testing](https://www.softwaretestinghelp.com/types-of-software-testing)

Means of Curriculum Delivery : Lecture, Group Learning, Seminar, Assignment, Google Classroom

SEMESTER – VI

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code :	18U6CACP20	Core 20: Software Testing- Practical	Batch	2019-2022
			Semester	VI
Hrs/week			5	Credits

COURSE OBJECTIVES:

- To understand software test automation problems and solutions.
- To learn how to planning a test project, design test cases and data, conduct testing operations, manage software problems and defects, generate a testing report.
- To gain the techniques and skills on how to use modern software testing tools to support software testing projects.

COURSE OUTCOMES (CO)

Upon successful completion of this lab Course, student should be able to

CO Number	CO Statement
CO1	Find practical solutions to the problems.
CO2	Solve specific problems alone or in teams manage a project from beginning to end
CO3	Define, formulate and analyze a problem
CO4	Developing applications and Test them
CO5	Find practical solutions to the problems.

MAPPING WITH PROGRAMME OUTCOMES

CO/ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	-	-	-	-	-	✓
CO2	-	✓	✓	-	-	-	-	-	-	-	✓
CO3	-	✓	✓	-	-	-	-	-	-	-	✓
CO4	-	✓	✓	-	-	-	-	-	-	-	✓
CO5	-	✓	✓	-	-	-	-	-	-	-	✓

Program list:

S.No	Programs
1	Performing a test in the Apache JMeter Testing Tool to implement the factorial concepts.
2	Performing a test in the Apache JMeter Testing Tool to analyze the suitable problem and displaying the results.
3	Performing a test in the Apache JMeter Testing Tool to find the fibonaaci series.
4	Creating test cases and testing the functionality of calculator.
5	Creating test cases and testing the java Program which generates sum of a individual digit of a 5-digit number until a single digit is produced.
6	Testing the java program: Sort and store the elements two arrays of integers into the third list.
7	Testing the java program: multiple inheritance.
8	Testing the java Program: Palindrome string checking program.
9	Testing the java Program: String Manipulation.
10	Testing the java Program: Employee details using constructors.

Means of Curriculum Delivery : Power point presentation, Lab Assignments, Observation

SEMESTER -V

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	18U6CACP21	CORE 21 : PHP AND MY SQL - PRACTICAL	Batch	2018-2021
			Semester	VI
Hrs/week	6		Credits	3

Course Objective: To enable the students to gain knowledge in developing PHP and MySQL Programs for certain specified problems.

Course Outcomes (CO)

At the end of the practical session, students would be well-versed in

CO Number	CO Statement
CO1	Write PHP code to produce outcomes and solve problems.
CO2	Display and insert data using PHP and MySQL.
CO3	Test, debug, and deploy web pages containing PHP and MySQL.

1. Write a program to create different variables.
2. Develop a PHP program using controls and functions
3. Develop a PHP program to design a college application form using MYSQL table.
4. Write a program to send an HTML formatted Email in PHP.
5. Develop a PHP program to display student information using MYSQL table.
6. Write a program to do different types of Sorting in PHP.
7. Write a program to do String Manipulation in PHP.
8. Write a PHP program to get color code from the user which displays the color name.
9. Write a PHP program to do calculator functions
10. Write a program to upload a file in PHP.
11. Write a program for login authentication using PHP and MySQL
12. Create a Pay slip for an employee using PHP and MySQL
13. Write a program to demonstrate how a web page can communicate with a web server while a

user type characters in an input field

14. Develop a PHP program using session

15. Develop a PHP program using cookie and session

TEXT BOOK

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1.	Matt Doyle	“Beginning PHP 5.3”	Wunley India Edition

Reference books:

S.No	Authors	Title	Publishers
1.	Vikram Vaswani	PHP: A Beginners guide	TataMcgraw Hill,2009.
2.	Lawpoint	Guide to PHPLP Computer series	2007.
3.	Larry Ullman	PHP 6 and MySQL 5	Pearson Education,2000

WEBSITE REFERENCES

- ✓ <https://www.phpexercises.com>
- ✓ <https://www.w3resource.com/php-exercises/>
- ✓ <https://www.geeksforgeeks.org/php/>

Means of Curriculum Delivery : Power point presentation, Lab Assignments, Observation

SEMESTER- VI
CORE 22: PROJECT VIVA-VOCE

Subject Code: 18U6CACV22

Total Hours: 90

No. of Credits: 4

Objective: To enable the students to apply practically in a specific area using any specific domain knowledge he/she possesses and get the results.

GUIDELINES FOR PROJECT WORK

1. The aim of the project work is to acquire practical knowledge on the implementation of the programming concepts studied.
2. Each student should carry out individually one project work and it may be a work using the software packages that they have learned or the implementation of concepts from the papers studied or implementation of any innovative idea focusing on application oriented concepts.
3. The project work should be compulsorily done in the college only under the supervision of the department staff concerned.

FINAL VIVA-VOCE

Project work carries 100 marks with 4 credits.

Internal Assessment: 80 marks (60 marks for 3 reviews and 20 marks for record)

External Assessment : 20 marks (Viva-Voce).

For awarding a pass, a candidate should have obtained 40% of the total 100 Marks.

The evaluation would be done jointly by both the examiners(Internal and External). Students who fail in the project work and viva-voce examination or who are absent for the project viva-voce who fail to submit the project report before the due date will have to re-submit the project work and appear for the viva-voce examination during the subsequent year.

PROJECT WORK

TITLE OF THE DISSERTATION

Bonafide Work Done by

STUDENT NAME

REG. NO.

Dissertation submitted in partial fulfillment of the requirements
for the award of Bachelor of Information Technology Of
Bharathiar university, Coimbatore-46

College emblem

GUIDE

HOD

Submitted for the Viva-Vice Examination held on _____

Internal Examiner

External Examiner

MONTH – YEAR

CONTENTS

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1. INTRODUCTION

1.1 ORGANIZATION PROFILE

1.2 SYSTEM SPECIFICATION

1.2.1 HARDWARE CONFIGURATION

1.2.2 SOFTWARE SPECIFICATION

2. SYSTEM STUDY

2.1 EXISTING SYSTEM

2.1.1 DRAWBACKS

2.2 PROPOSED SYSTEM

2.2.1 FEATURES

3. SYSTEM DESIGN AND DEVELOPMENT

3.1 FILE DESIGN

3.2 INPUT DESIGN

3.3 OUTPUT DESIGN

3.4 DATABASE DESIGN

3.5 SYSTEM DEVELOPMENT

3.5.1 DESCRIPTION OF MODULES

(Detailed explanation about the project work)

4. TESTING AND IMPLEMENTATION

5. CONCLUSION

BIBLIOGRAPHY

APPENDICES

A. DATA FLOW DIAGRAM

B. TABLE STRUCTURE

C. SAMPLE CODING

D. SAMPLE INPUT

E. SAMPLE OUTPUT

F. REPORTS

SEMESTER – V

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	18U5CAET1A	Elective 1: Software Engineering	Batch	2018-2021
			Semester	V
Hrs/week	4		Credits	3

Course Objectives:

To enable the students

- To provide knowledge on Software engineering concepts
- To understand various techniques of cost estimation of software, software design and software Requirements.
- To understand various issues in implementation of software, verification, validation and maintenance of software to give a roadmap to design a new software project.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the various models of software development life cycle
CO2	Explain the software requirement analysis and cost Estimation
CO3	Understand the software design techniques
CO4	Apply verification and validation tools
CO5	Use software testing methods

MAPPING WITH PROGRAMME OUTCOMES

CO/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	✓	-	-	-	-	-	-	-
CO2	-	✓	-	-	-	-	✓	-	-	-	-
CO3	-	-	✓	-	-	-	-	-	-	-	-
CO4	-	✓	✓	✓	-	-	-	-	-	-	-
CO5	-	✓	✓	✓	-	-	-	-	-	-	-

Syllabus**UNIT –I (Hours – 10)**

Introduction to Software Engineering : Introduction-Basic definitions- Distribution of effort- Project Size Categories – Managerial Issues -Quality and Productivity Factors – Software Cost Factors. **Planning a Software Project:** Introduction – Software life Cycle Models – Waterfall Model – Work Products and Reviews – Prototype Model – Spiral Model – Concurrent Development Model – Component Assembly Model – Rapid Application Development Model – The incremental Model – Planning an Organizational Structure.

UNIT –II (Hours – 9)

Software Cost Estimation: Introduction- Software Cost Estimation Techniques – Staffing Level Estimation – Software Maintenance Cost Estimation. **Software Requirements Analysis:** Software Requirements Analysis – Facilitated Application Specification Technique – Quality Function Deployment – Elements of Requirements Analysis- Classical Analysis Methods.

UNIT –III (Hours – 9)

Software requirements Definition: Software Requirements Specification- Formal Specification Techniques – Languages and Processors for SRS. **Software Design:** Introduction – Types of Design – Design Strategies – Fundamental Design Concepts – Modules and Modularization Criteria – Design Notations – Design Techniques – Distributed and Real Time System Design.

UNIT –IV (Hours – 10)

Source Code Development: Introduction – Structured Programming Techniques – Coding Style – Documentation Guidelines. **Verification and Validation :** Introduction – Software Quality – Verification and Validation Methods – Software Quality Assurance – Formal Technical review- Structured Walkthrough – Inspection – Audit – Testing – Testing Strategies – Debugging – Source Code Metrics- Static Analysis – Symbolic Execution – Formal Verification.

UNIT -V (Hours – 10)

Software Testing Methods: Flow graph and Graph Matrix- Software Testing Methods – White box testing – White Box Testing Techniques – Black box Testing - Black box Testing Techniques – Characteristics of testable software.

Software maintenance and Configuration management: Introduction: Managerial Aspects of software maintenance – Enhancing Maintainability during development – Software Configuration management. **Advanced Topics in Software Engineering:** Software Reliability techniques- Risk management – Total Quality movement – Capability maturity model integration – Clean room Software Engineering – Software Reengineering- Reverse Engineering.

TEXT BOOK

Recent editions of the following books only are recommended

S.No	Author	Title of the Book	Publisher
1	A.K.R.S. Anusha	Software Engineering	Charulatha Publications
2	A Practitioner's Approach (India) Paperback – Import	Software Engineering	Pressman
3	Rajib Mall	Fundamentals Of Software Engineering	Eastern Economy

Means of Curriculum Delivery : Lecture, Group Discussion, Seminar, Assignment, Google classroom.

SEMESTER-V

Programme Code	BCA	Programme Title	Bachlor of Computer Applications	
Course Code	18U5CAET1B	ELECTIVE 1: DATA MINING AND WAREHOUSING	Batch	2018-2021
Hrs/week			4	Semester
			Credits	3

COURSE OBJECTIVES

To enable the students

- To know the basics of data mining and warehousing.
- To Understand various techniques in data mining.
- To learn about architecture of data warehouse and its applications

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	To present survey on different learning, classification and data mining foundations.
CO2	To and methods for data Mining applications.
CO3	To solve problems for multi-core or distributed, concurrent/Parallel environments.
CO4	To survey and use latest trends and advances in datamining and warehousing.

MAPPING WITH PROGRAMME OUTCOMES

COs/ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	-	✓	✓	-	-	-	-	-	-	-	-	-
CO2	-	✓	✓	-	-	-	-	-	-	-	-	-
CO3	-	✓	✓	-	-	-	-	-	-	-	-	-
CO4	-	✓	✓	-	-	-	-	-	-	-	-	-

Syllabus**UNIT I****(Hours: 10)**

Introduction – Data mining – Association Rules – What is association rules -Methods to discover associaion rules – A Priori Algorithm – Partition Algorithm – Pincer Search Algorithm – Itemset counting Algorithm – F Tree Growth Algorithm – Incremental Algorithm.

UNIT II**(Hours: 10)**

Clustering techniques – Decision Trees – What is Decision Tree – Tree construction principal – Best Split – Splitting Indices – Splitting Criteria – Decision tree Construction Algorithm

UNIT III**(Hours: 10)**

Web Data Mining – Other Techniques – What is Neural Networks – Learning in Neural Networks – Unsupervised learning – Genetic Algorithms .

UNIT IV**(Hours: 9)**

Data warehousing: An introduction – Characteristics of a data warehouse- Data marts - Other aspects of data marts – Online Analytical Processing.

UNIT V**(Hours: 9)**

Developing a Data Warehouse – Applications of Data Warehouse and Data Mining in Government – Case Study.

TEXT BOOKS

Recent editions of the following books only are recommended

S.NO	Author Name	Title of the Book	Publisher
1.	Jiwei Han, Michelien Kamber:	“Data Mining Concepts and Techniques”	Morgan Kaufmann Publishers an Imprint of Elsevier
2.	Arun K.Pujar	Data Mining Techniques	Universities Press (India) Limited

REFERENCE BOOKS

S.No.	Author Name	Title of the Book	Publisher
1.	George M. Marakas	Modern Data warehousing, Mining and Visualization	Printice Hall

WEBSITE REFERENCES

1. www.vssut.ac.in/lecture_notes/lecture1428550844.pdf
2. https://www.tutorialspoint.com/dwh/dwh_overview.htm
3. <https://www.educba.com> › Data Science › Blog › Head to Head Differences
4. <https://www.trifacta.com/data-warehousing-and-data-mining/>

Means of Curriculum Delivery: Lecture, Group Discussion, Seminar, Assignment, Google Classroom

SEMESTER – V

Programme Code	BCA	Programme Title	Bachlor of Computer Applications	
Course Code	18U5CAET1C	Elective 1: Computer Graphics	Batch	2018-2021
Hrs/week	4		Semester	V
			Credits	3

Course Objectives:

- To provide knowledge to the students on the basic concepts of computer graphics.
- To gain knowledge 2D and 3D display methods.
- To learn the concepts of multimedia hardware and software.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of output primitives
CO2	Outline of the graphics system
CO3	Explain 2D geometric transformations
CO4	Explain 3D geometric transformations
CO5	Discuss about surface rendering methods

MAPPING WITH PROGRAMME OUTCOMES

CO/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	-	-	-	-	-	-
CO2	-	✓	✓	-	-	-	-	-	-	-	-
CO3	-	✓	✓	✓	-	-	-	-	-	-	-
CO4	-	✓	✓	✓	-	-	-	-	-	-	-
CO5	-	-	✓	✓	-	✓	-	-	-	-	-

Syllabus**UNIT I****(Hours - 15)**

Output Primitives: Points and Lines – Line-Drawing algorithms – Loading frame Buffer – Line function – Circle-Generating algorithms – Ellipse-generating algorithms. **Attributes of Output Primitives:** Line Attributes – Curve attributes – Color and Grayscale Levels – Area-fill attributes – Character Attributes.

UNIT II**(Hours - 15)**

Overview of Graphics System - Bresenham technique - Line Drawing and Circle Drawing Algorithms- DDA - Line Clipping - Text Clipping.

UNIT III**(Hours - 15)**

2Dimensional: 2D Geometric Transformations: Basic Transformations –Matrix Representations –Composite Transformations. **2D Viewing:** The Viewing Pipeline –Viewing Co-ordinate Reference Frame –Window-to-Viewport Co-ordinate Transformation -2D Viewing Functions –Clipping Operations.

UNIT IV**(Hours - 15)**

3Dimensional: 3D Display methods: Parallel Projection - Perspective Projection . **3D Graphics:** Bezier Curves and Surfaces. **3D Viewing:** The Viewing Pipeline- Coordinates- 3D Viewing Functions. **Visible Surface Detection Methods.**

UNIT V**(Hours - 15)**

Surface – Rendering methods: Polygon rendering methods- **Adding surface details - Color models – XYZ-RGB-YIQ- CMY-HSV Models. - Computer Animation.**

TEXT BOOK

Recent editions of the following books only are recommended

S.No	Author	Title of the Book	Publisher
1	Donald Hearn and M. Pauline Baker	Computer Graphics	Prentice Hall of India
2	Ralf Steinmetz, Klara steinmetz	Multimedia Computing, Communications and Applications	Pearson education
3	Steven Harrington	Computer Graphics Programming Approach	McGraw Hill
4	W.M.Newman and Sproull	Principles of interactive Computer Graphics	TMH

Means of Curriculum Delivery : Lecture, Group Learning, Seminar, Assignment, Google classroom.

SEMESTER – V

Programme Code	BCA	Programme Title	Bachlor of Computer Applications	
Course Code	18U5CAET2A	ELECTIVE 2: Embedded Systems	Batch	2018-2021
			Semester	V
Hrs/week	4		Credits	3

Course Objectives:

- To make the students to have basic Knowledge and understanding of fundamental embedded systems design paradigms, architectures, possibilities and challenges, both with respect to software and hardware
- Ability to analyze a system both as a whole and in parts and their interaction in the functionality and properties of the system.
- To make the students to have a clear understanding on industrial embedded systems and intelligent embedded system development.

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of embedded systems and memory organization
CO2	Explain devices and communication concepts
CO3	Apply embedded programming in High Level Languages
CO4	Explain inter process communication
CO5	Explain real time operating systems

MAPPING WITH PROGRAMME OUTCOMES

CO/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	✓	-	-	-	✓	-
CO2	-	✓	✓	-	-	✓	-	-	-	-	-
CO3	-	✓	✓	-	-	✓	-	-	-	✓	-
CO4	-	✓	✓	-	-	-	-	-	-	-	-
CO5	-	✓	✓	-	-	-	-	-	-	-	-

Syllabus**UNIT-1****(Hours – 10)**

Introduction To Embedded System: Embedded System - Processor Embedded Into a System - Embedded Hardware Units And Devices In a System - Embedded Software In a System - Examples Of Embedded System - Embedded System-On-Chip(Soc)And Use Of VLSI Circuit Design Technology. Memory Organization: Processor and Memory Organization – Memory Types - Memory Maps And Address – Processor Selection - Memory Selection.

UNIT-2**(Hours – 10)**

Devices And Communication Buses For Devices Network: IO Types And Examples - Serial Communication Devices - Parallel Device Ports - Sophisticated Interfacing Features In Device Ports - Wireless Devices - Timer And Counting Devices - ISR Concept - Interrupt Sources - Interrupt Servicing(Handling)Mechanism - Multiple Interrupt.

UNIT-3**(Hours – 10)**

Programming Concept And Embedded Programming In C, C++ & Java: Software Programming In Assembly Language(Alp) and In High Level Language 'c' – C Program Element: Header and Source File And Pre-processor Directives - Program Elements: Macro And Functions -program Elements : Data Types, Data Structures, Modifiers, Statements, Loops And Pointers - Object - Oriented Programming - Embedded Programming In C++ - Embedded Programming In Java.

UNIT-4**(Hours – 8)**

Inter Process Communication And Synchronization Of Process, Threads And Tasks: Multiple Processes In An Application - Multiple Threads In An Application – Tasks - Inter Process Communication - Message Queue Function - Mailbox Function - Pipe Function - Socket Function – RPC Function.

UNIT-5**(Hours – 10)**

Real Time Operating System: OS Services - Process Management - Timer Function - Event Function - Memory Management – Devhjhices, Files and IO Sub System Management - Interrupt Routines RTOS Environment And Handling Of Interrupt Source Calls - Real-Time Operating System -Basic Design Using An RTOS - RTOS Task Scheduling Models, Interrupt Latency And Response Of The Task As Performance Metrics.

TEXT BOOK

Recent editions of the following books only are recommended

S.No	Author	Title of the Book	Publisher
1	Raj Kamal	Embedded Systems Architecture Programming and Design	Tata Mcgraw-Hill Edition
2	Manuel Jimenez, Rogelio Palomera, Isidoro Couvertier	Introduction to the Embedded System	Springer Nature

WEBSITE REFERENCES

- 1.<https://examupdates.in/embedded-systems/>
- 2.<http://www.arnabkumardas.com/online-courses/embedded-system-tutorial/>
- 3.https://www.tutorialspoint.com/embedded_systems/

Means of Curriculum Delivery : Lecture, Group Learning, Seminar, Assignment, Google classroom.

SEMESTER – V

Programme Code	BCA	Programme Title	Bachlor of Computer Applications	
Course Code	18U5CAET2B	ELECTIVE 2: Client Server Technology	Batch	2018-2021
Hrs/week			4	Semester
			Credits	3

Course Objectives:

- To understand the concepts of client/server
- To learn the components of client and server application
- To learn the components of client and server application-Connectivity
- To learn the components of client and server application-Software & Hardware
-

COURSE OUTCOMES (CO)

On successful completion of the course, students should be able to

CO Number	CO Statement
CO1	Define the concepts of client/server computing
CO2	Use the components of client/server applications
CO3	Discuss about client/server connectivity
CO4	Explain the client/server application software
CO5	Explain the client/server application hardware

MAPPING WITH PROGRAMME OUTCOMES

CO/Pos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	✓	-	-	-	-	-
CO2	-	✓	✓	-	-	-	-	-	-	-	-
CO3	-	✓	✓	-	-	✓	-	-	-	-	-
CO4	-	✓	✓	-	-	✓	-	-	-	-	-
CO5	-	✓	✓	-	-	✓	-	-	-	-	-

Syllabus**UNIT-I****(Hours - 10)**

Client/Server Computing :Mainframe -Centric Client/Server Computing-Downsizing and Client/Server Computing .Advantages of Client / Server Computing -Connectivity –Ways to improve Performance –How to reduce network Traffic

UNIT-II**(Hours-10)**

Components of Client/Server Applications –The Client: Role of a Client –Client Services – Request for Service-RPC. Components of Client/Server Applications –The Server: The Role of a Server –Server Functionality in Detail –The Server Operating system.

UNIT-III**(Hours - 9)**

Components of Client/Server Applications –Connectivity: Open System Interconnect – Communications Interface Technology – Inter process communication –WAN Technologies.

UNIT-IV**(Hours - 9)**

Components of Client/Server Applications–Software: Factors Driving demand for application software development –Rising Technology Staff costs –Need to improve Technology –Need for Common Interface across Platforms –Client/Server System Development Methodology-OOP.

UNIT-V**(Hours - 10)**

Components of Client/Server Applications–Hardware: Hardware/Network Acquisition –PC-Level Processing Units –Macintosh, notebooks, Pen –UNIX Workstation –x-terminals –Disk, Tape, Optical Disks, NIC and UPS. The Future of Client/Server Computing: Enabling Technologies –Transformational Systems.

TEXT BOOK

Recent editions of the following books only are recommended

S.No	Author	Title of the Book	Publisher
1	Patrick N.Smith with Steve L.Guengerich	Client /Server Computing	Prentice Hall of India Pvt. Ltd
2	Robert Orfali, Dan Harkey, Jeri Edwards	The Essential Client/Server Survival Guide	WileyIndia
3	Dewire and Dawanatravis	Client/ Server Computing	Tata Mcgraw Hill Pub

WEBSITE REFERENCES

- https://en.wikipedia.org/wiki/Client%E2%80%93server_model
- <https://www.eukhost.com/blog/webhosting/client-server-technology/>
- <https://www.lifewire.com/introduction-to-client-server-networks-817420>
- <https://www.javatpoint.com/computer-network-client-and-server-model>

Means of Curriculum Delivery: Lecture, Group Learning, Seminar, Assignment, Google Classroom.

SEMESTER – V

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U5CAET2C	ELECTIVE 2: Web Technology And Its Applications	Batch	2018-2021
Hrs/week:	4 Hrs		Semester	5
			Credits	3

COURSE OBJECTIVES

To enable the students

- To learn about the basic concepts of various networking model and its layers.
- To learn about the concepts of protocol and its architecture.
- To learn about the Java Scripts and XML.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Define the fundamental ideas and standards underlying OSI Model.
CO2	Differentiate the major frameworks allowing to develop TCP/IP and UDP and assess their suitability for specific usage scenarios.
CO3	Explain the link between the concepts of services and business processes and discuss and critique related standards.
CO4	Define the fundamental of scripting languages.
CO5	Describe about how to write a well formed / valid XML document

MAPPING WITH PROGRAMME OUTCOMES

CO/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓ -	-	-	-	-	-	-	-	✓
CO2	-	✓	✓	-	-	-	-	-	-	-	✓
CO3	-	✓	✓	-	-	-	-	-	-	-	✓
CO4	-	✓	✓	-	-	-	-	-	-	-	✓
CO5	-	✓	✓	-	-	-	-	-	-	-	✓

Syllabus**UNIT I****(Hours: 10)**

Networking Protocols and OSI Model: OSI Model, Layer functions. Internetworking concepts, devices, internet basics: why internetworking, problems, virtual network, repeaters, bridges, routers, gateways, history of internet, growth.

UNIT II**(Hours: 12)**

TCP/IP Part I: basics, addressing, IP addressing, logical addresses, concept of IP address, ARP, RARP, BOOTP, DHCP, ICMP. TCP / IP Part II: TCP, UDP – basics, features, relationship, ports and sockets, connections, TCP segment format, UDP, differences.

UNIT III**(Hours: 12)**

DNS, Email, FTP, TFTP – DNS, Email, FTP, TFTP. TCP / IP Part IV : WWW, HTTP, TELNET – history, basics, HTML, common gateway interface, remote login (TELNET).

UNIT IV**(Hours: 13)**

Java Script and AJAX. PHP / MySQL – scripting language, client side vs Server side, Features of PHP, reference, MySQL basics, using MySQL with PHP.ASP.NET: overview of .NET framework, Details, Server controls and web controls, validation controls.

UNIT V**(Hours: 13)**

Java Web Technologies – Java servlets and JSP, Creating and testing, servlet, session management, introduction to JSP, JSP and JDBC, EJB, architecture, overview, types of EJB, session beans. Web Security: principles, cryptography, plain text and cipher text, digital certificates, signatures, secure socket layer. XML – what is XML? XML versus HTML, EDI, Terminology, Document-Type Declaration, Element-Type declarations.

TEXT BOOKS

S.NO	Author Name	Title of the Book	Publisher
1.	Achyut Godbole and Atul Kahate	Web Technologies TCP / IP, Web / Java Programming and Cloud Computing.	Tata McGraw Hil

REFERENCE BOOKS

Recent editions of the following books only are recommended

S.No.	Author Name	Title of the Book	Publisher
1.	Behrouz A. Forouzan	TCP / IP – Protocol Suite	McGraw Higher Education
2.	Paul Deitel, Harvey Dietel and Abbey Diete	Interne & World Wide Web – How to Program	Tata McGraw Hill. Fifth Edition

WEBSITE REFERENCES

- <https://www.juet.ac.in/Department/CSE/WTechLab.php>
- <https://www.ntnu.edu/studies/courses/IT2805>
- vignan.ac.in/subjectspg/CS652.pdf
- <https://www.ur.edu.pl/file/42104/Internet%20Technologies.doc>

Means of Curriculum Delivery: Lecture, Group Learning, Seminar, Assignment, Google Classroom

SEMESTER-VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U6CAET3A	Elective 3 : Artificial Intelligence and Expert System	Batch	2018-2021
Hrs/week:	4 Hrs		Semester	5
			Credits	3

COURSE OBJECTIVES

To enable the students

To Understand different planning problems and have the basic knowledge how to design and implement AI planning systems

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand the strengths and limitations of various state-space search algorithms and choose the appropriate algorithms for a problem
CO2	Learn the basics of the theory and practice of Artificial Intelligence as a discipline about intelligent agents capable of deciding what to do, and do it
CO3	Apply knowledge representation techniques and problem solving strategies to common AI applications
CO4	Design simple software to experiment with various AI concepts and analyze Results
CO5	Build self-learning and research skills to be able to tackle a topic of interest on his/her own or as part of a team

MAPPING WITH PROGRAMME OUTCOMES

CO/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	-	-	-	-	-	-
CO2	-	✓	✓	-	-	-	-	-	-	-	-
CO3	-	✓	✓	✓	-	-	-	-	-	-	-
CO4	-	✓	✓	✓	-	-	-	-	-	-	-
CO5	-	✓	✓	✓	-	-	-	-	-	-	-

SYLLABUS**UNIT - I****(Hours : 10)**

Artificial Intelligence : Intelligence, AI Concepts, Various definitions of AI, Knowledge, Knowledge Pyramid, People and Computers: What computers can do better than people, what people can do better than computers; Characteristics of AI Problems, Problem Representation in AI, Components of AI, AI Evolution, Application Areas of AI, History of AI, The Turing Test, The Revised Turing Test.

UNIT -II**(Hours : 10)**

Expert System: Components of Expert System: Knowledge Base, Inference Engine, User Interface, Features of Expert System, Expert System Life Cycle, Categories of Expert System, Rule Based vs. Model Based Expert Systems, Advantages/Limitations of Expert System

UNIT -III**(Hours : 8)**

Developing an Expert System: Identification, Conceptualization, Formalization, Implementation, Testing, Using an Expert System, Application Areas of Expert System.

UNIT -IV**(Hours : 10)**

AI and Search Process: Brute Force Search –Depth First/Breadth First Search, Heuristic Search: Hill Climbing, Constraint Satisfaction, Mean End Analysis, Best First Search, A* Algorithm, AO*Algorithm, Beam Search.

UNIT -V**(Hours : 10)**

Natural Language Processing: Introduction, Need, Goal, Fundamental Problems in Natural Language Understanding, How People overcome Natural Language Problems. Speech Recognition: Introduction, Advantages and Approaches, Introduction to Robotics: Parts of a Robot, Controlling a Robot, Intelligent Robots, Mobile Robots.

TEXT BOOKS

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1.	Henry C. Mishkoff	Understanding Artificial Intelligence	Tata McGraw Hill
2.	V S Janakiraman	Foundation of Artificial Intelligence and Expert Systems	Tata McGraw Hill

REFERENCE BOOKS

S. No	Author Name	Title of the Book	Publisher
1.	Vinod Chandra S.S and Anand Hareendran .S	Artificial Intelligence and Machine Learning	PHI Learning
2.	Elaine Rich, Kevin Knight, Shivashankar B.Nair	Artificial Intelligence	

WEBSITE REFERENCES

- <https://www.techopedia.com/definition/190/artificial-intelligence-ai>
- https://en.wikipedia.org/wiki/Artificial_intelligence
- <https://www.techopedia.com/definition/190/artificial-intelligence-ai>
- https://www.tutorialspoint.com/artificial_intelligence/artificial_intelligence_overview.h
- <https://www.britannica.com/technology/artificial-intelligence>

Means of Curriculum Delivery: Lecture, Group Learning, Seminar, Assignment, Google Classroom

SEMESTER – VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U6CAET3B	Elective 3: MOBILE AND WIRELESS TECHNOLOGY	Batch	2018-2021
Hrs/Week	4 Hrs		Semester	5
			Credits	3

COURSE OBJECTIVES

To enable the students

To learn the wireless communication on digital mobile communication system and integration of services and applications from fixed networks into networks supporting mobility of end user and wireless access.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand the basics of radio access and networks
CO2	Learn to simulate wireless networks and analyze the simulation results
CO3	Describe the concepts of ad hoc networks, design and implementation issues, and available solutions
CO4	Apply knowledge of wireless sensor networks to various application areas
CO5	Demonstrate advanced knowledge of networking and wireless networking

MAPPING WITH PROGRAMME OUTCOMES

Cos/POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	-	-	-	-	-	-
CO2	-	✓	✓	-	-	-	-	-	-	-	-
CO3	-	✓	✓	✓	-	-	-	-	-	-	-
CO4	-	✓	✓	✓	-	-	-	-	-	-	-
CO5	-	✓	✓	✓	-	-	-	-	-	-	-

SYLLABUS**UNIT - I****(Hours : 10)**

Introduction: Applications – A Simplified Reference Mode. Wireless Transmission: Cellular System. Medium Access Control : Motivation for a Specialized MAC : Hidden and exposed terminals – Near and far terminals – SDMA – FDMA – TDMA : Fixed TDM – Classical Aloha – Slotted Aloha – Carrier Sense Multiple Access – Demand assigned Multiple Access – PRMA Packet Reservation Multiple Access – Reservation TDMA – Multiple Access With Collision Avoidance – Polling – Inhibit Sense Multiple Access. CDMA: Spread Aloha multiple access.

UNIT -II**(Hours : 10)**

Telecommunication Systems: GSM: Mobile Services – System Architecture – Radio Interface – Protocols - Localization And Calling – Handover – Security – New Data Services. DECT: System Architecture – Protocol Architecture – TETRA.

UNIT -III**(Hours : 10)**

UMTS and IMT 2000: UMTS Releases and Standardization – UMTS System Architecture -UMTS Radio Interface – UTRAN – Core Network – Handover. Satellite System: History –Applications – Basics: GEO – LEO – MEO . Routing – Localization – Handover.Broadcast Systems: Overview – Cyclical Repetition Of Data – Digital Audio Broadcasting –Digital Video Broadcasting – Convergence of Broadcasting and Mobile Communication.

UNIT -IV**(Hours : 9)**

Wireless LAN: Infra Red Vs Radio Transmission – Infrastructure and Ad-Hoc Network –IEEE 802.11: System Architecture – Protocol Architecture – Physical Layer – MediumAccess Control Layer – MAC Management – HIPERLAN: HIPERLAN1 -WATM – BRAN–HiperLAN2. Bluetooth: User scenarios – Architecture – Radio layer – Base band layer –Link manager protocol

UNIT -V**(Hours : 9)**

Mobile Network Layer: Mobile IP – Dynamic Host Configuration Protocol – Mobile Ad-Hoc Networks. Mobile Transport Layer: Traditional TCP-Classical TCP Improvement-TCP Over 2.5/3G Wireless Networks – Performance Enhancing Proxies.

TEXT BOOKS

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1	Asoke K Talukder and Roopa R Yavagal	Mobile Computing	Tata McGraw-Hill,
2	John Schiller	Mobile communication	Pearson Edition

REFERENCE BOOKS

S. No	Author Name	Title of the Book	Publisher
1	William C.Y.Lee	Mobile Communication Design Fundamentals	John Wiley
2	Ivan Stojmenoric	Wireless network & Mobile communication	John Wiley & Sons, Inc.

WEBSITE REFERENCES

- https://en.wikipedia.org/wiki/Mobile_technology
- <https://www.techopedia.com/7/.../what-is-the-difference-between-mobile-and-wireless>
- https://www.researchgate.net/.../282392489_Enabling_5G_mobile_wireless_technologies

Means of Curriculum Delivery: Lecture, Group Learning, Seminar, Assignment, Google Classroom

SEMESTER-VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	18U6CAET3C	Elective 3 : Cloud Computing	Batch	2018-2021
Hrs/Week	4 Hrs		Semester	VI
			Credits	3

COURSE OBJECTIVES

To enable the students

- To Understand the Cloud computing architectures, applications and challenges and learn about various cloud storages

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand security implications in cloud computing
CO2	Analyse the trade-offs inherent in Cloud Computing
CO3	Identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud, etc.
CO4	Explain the core issues of cloud computing such as security, privacy, and interoperability
CO5	Identify problems, and explain, analyze, and evaluate various cloud computing solutions

MAPPING WITH PROGRAMME OUTCOMES

COs/ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	-	-	-	-	-	-
CO2	-	✓	✓	-	-	-	-	-	-	-	-
CO3	-	✓	✓	✓	✓	-	-	-	-	-	-
CO4	-	✓	✓	✓	✓	-	-	-	-	-	-
CO5	-	✓	✓	✓	✓	-	-	-	-	-	-

SYLLABUS**UNIT - I****(Hours : 10)**

INTRODUCTION: Cloud Computing Introduction, From, Collaboration to cloud, Working of cloud computing, pros and cons, benefits, developing cloud computing services, Cloud service development, discovering cloud services.

UNIT -II**(Hours : 10)**

CLOUD COMPUTING FOR EVERYONE: Centralizing email communications, cloud computing for community, collaborating on schedules, collaborating on group projects and events, cloud computing for corporation, mapping schedules managing projects, presenting on road.

UNIT -III**(Hours : 10)**

USING CLOUD SERVICES: Collaborating on calendars, Schedules and task management, exploring on line scheduling and planning, collaborating on event management, collaborating on contact management, collaborating on project management, collaborating on word processing, spreadsheets, and databases.

UNIT -IV**(Hours : 9)**

OUTSIDE THE CLOUD : Evaluating web mail services, Evaluating instant messaging, Evaluating web conference tools, creating groups on social networks, Evaluating on line groupware, collaborating via blogs and wikis

UNIT -V**(Hours : 9)**

STORING AND SHARING: Understanding cloud storage, evaluating on line file storage, exploring on line book marking services, exploring on line photo editing applications, exploring photo sharing communities, controlling it with web based desktops.

TEXT BOOKS

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1.	Michael Miller	Cloud Computing	Pearson Education, New Delhi
2	Anthony T. Velte	Cloud Computing A Practical Approach	Tata Mcgraw Hill Education Private Limited

REFERENCE BOOKS

S. No	Author Name	Title of the Book	Publisher
1	Arshdeep Bahga	Cloud Computing: A Hands-On Approach	Paperback-Import,

WEBSITE REFERENCES

1. https://en.wikipedia.org/wiki/Cloud_computing
2. <https://searchcloudcomputing.techtarget.com/definition/cloud-computing>
3. <https://www.salesforce.com/what-is-cloud-computing/>
4. <https://aws.amazon.com/what-is-cloud-computing>
5. <https://www.techopedia.com/definition/2/cloud-computing>

Means of Curriculum Delivery: Lecture, Group Learning, Seminar, Assignment, Google Classroom

SEMESTER – VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	18U6CAET4A	ELECTIVE 4: COMPILER DESIGN	Batch	2018-2021
			Semester	VI
Hrs/Week:	4 Hrs		Credits	3

COURSE OBJECTIVES

To enable the students

- To learn the fundamentals of Compiler Designs and knowledge on High level Programming languages.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand the basics of compilation(computing)
CO2	Understand grammar of compilers
CO3	Understand the intermediate form of codes in compilers
CO4	Understand the code generation technique(Machine code)
CO5	Understand the optimization of code in compilers

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	-	-	-	-	-	-
CO2	-	✓	✓	-	-	-	-	-	-	-	-
CO3	-	✓	✓	-	-	-	-	-	-	-	-
CO4	-	✓	✓	-	-	-	-	-	-	-	-
CO5	-	✓	✓	-	-	-	-	-	-	-	-

SYLLABUS**UNIT - I****(Hours : 10)**

Introduction to Compilers: Compilers and Translators – The Structure of a Compiler
 Lexical Analysis – Syntax analysis – Intermediate Code generation – Optimization – Code generation- Book keeping – Error handling – Compiler writing tools. Programming languages: High level Programming languages- Definitions – lexical and Syntactic structure of a language – data elements data structures – operators – assignment – statements.

UNIT -II**(Hours : 10)**

Finite Automata and lexical Analysis: The role of the lexical analyzer – simple approach – regular expressions -finite automata – from regular expressions to finite automata – minimizing the number of states – implementation of lexical analyzer. The Syntactic Specifications of programming languages : Context free Grammers – Derivations and Parse Trees – Capabilities of Context free Grammers.

UNIT -III**(Hours : 10)**

Basic Parsing Techniques: Parsers – Shift – reduce parsing – operator- precedence parsing – Top down parsing – Predictive parsers. Automatic Constuction of Effective parsers : LR parsers – Canonical Collection of LR (0) items - Constructing SLR parsing tables – Constructing Canonical LR paqrsing tables – Constructing LALR parsing tables.

UNIT -IV**(Hours : 8)**

Symbol tables : the Contents of a symbol tables – data structures – Representing scope information. Error Detection and Recovery : Errors – Lexical phase errors – Syntactic phase errors – Semantic errors.

UNIT -V**(Hours : 10)**

Introduction to Code Optimization :The principal sources of optimization – Loop Optimization – DAG representation of basic blocks – Value numbers and algebraic laws- global data flow analysis. Loop Optimization: Dominators – Reducible Flow graphs – depth first search – Loop invariant computations – Induction variable elimination – Some other loop optimizations.

TEXT BOOKS

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1.	Alfred V. Aho, Jeffrey D.Ullman,	Principles of Compiler Design	Narosa publishing house

REFERENCE BOOKS

S. No	Author Name	Title of the Book	Publisher
1.	Alfred V.Aho and Monica S.Lam	Compilers : Principles, Techniques and Tools Design Fundamentals	-

WEBSITE REFERENCES

1. <https://www.geeksforgeeks.org/compiler-design-tutorials/>
2. https://www.tutorialspoint.com/compiler_design
3. <https://www.javatpoint.com/compiler-tutorial>
4. <https://www.guru99.com/compiler-design-tutorial.html>
5. ecomputernotes.com/compiler-design

Means of Curriculum Delivery: Lecture, Group Learning, Seminar, Assignment, Google Classroom

SEMESTER – VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	18U6CAET4B	ELECTIVE 4: MOBILE OPERATING SYSTEM	Batch	2018-2021
Hrs/Week:	4 Hrs		Semester	VI
			Credits	3

COURSE OBJECTIVES

To enable the students

- To understand the process of developing software for the mobile and create mobile applications on the Android Platform

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Understand the limitations and challenges of working in a mobile and wireless environment.
CO2	Describe and apply the different types of application models/architectures used to develop mobile software applications.
CO3	Describe the components and structure of a mobile development frameworks (Android SDK and Eclipse Android Development Tools)
CO4	To learn how and when to apply the different components to develop a working system
CO5	Design, implement and deploy mobile applications using an appropriate software development environment.

MAPPING WITH PROGRAMME OUTCOMES

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	-	-	-	-	-	-
CO2	-	✓	✓	-	-	-	-	-	-	-	-
CO3	-	✓	✓	✓	✓	-	-	-	-	-	-
CO4	-	✓	✓	✓	✓	-	-	-	-	-	-
CO5	-	✓	✓	✓	✓	-	-	-	-	-	-

SYLLABUS**UNIT - I****(Hours : 10)**

Introduction to ANDROID: Android System Architecture, Creating and Running Android Applications, Types of Android Applications, Building blocks. Android OS Concepts: Mobile technology : Overview of Android - An Open Platform for Mobile development Open Handset Alliance. Use Android for mobile app development- Android Marketplaces - Android Development Environment setup.

UNIT -II**(Hours : 10)**

Android development Framework -Android-SDK, Eclipse Emulators /Android AVD. Creating & setting up custom Android emulator .Android Project Framework and its applications- Application Manifest, Application Life Cycle, Application Priority and Process States, Creating and Using Resources, The Activity Life Cycle.

UNIT -III**(Hours : 8)**

Android Architecture : Linux Kernel –Libraries- Android Runtime- Application Framework –Applications. Android Startup and Zygote. Android Debug bridge.Android Permission model -Android Manifest File.

UNIT -IV**(Hours : 10)**

Using Bluetooth and Managing Networks in ANDROID: Using Bluetooth -Introducing the Bluetooth Service, Controlling the Local Bluetooth Device, Discovering and Bonding with Bluetooth Devices, Managing Bluetooth Connections, Communication with Bluetooth. Managing Networks - Monitoring and Managing Your Internet Connectivity, Managing Active Connections, Managing Your Wi-Fi .

UNIT -V**(Hours : 10)**

Event driven Programming in Android- Creating a splash screen- Introduction to threads in Android- Develop application with menus and dialog boxes- Menu: Custom Vs. System Menus - Creating and Using Handset menu Button (Hardware)- Android Themes, Dialog, create an Alter Dialog- SQLite: Open Helper and create with database- Open and close a database.

TEXT BOOKS

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1.	Reto Meier:	Professional Android 2 Application Development	Wiley
2	Ed Burnette	Hello, Android	Shroff
3	Pradeep Kothari	Android Application Development	Dreamtech

REFERENCE BOOKS

S. No	Author Name	Title of the Book	Publisher
1.	Mark L Murphy	Beginning Android	Wiley India Pvt Ltd,
2	Sayed Y Hashimi and Satya Komatineni	Professional Android	Wiley India Pvt Ltd.
3	Marko Garaenta	Learning Android	O'ReillyPublication

WEBSITE REFERENCES

1. https://en.wikipedia.org/wiki/Mobile_operating_system
2. [https://en.wikipedia.org/wiki/Android_\(operating_system\)](https://en.wikipedia.org/wiki/Android_(operating_system))
3. https://www.webopedia.com/TERM/M/mobile_operating_system.html
4. <https://www.webopedia.com/.../mobile-operating-systems-mobile-os-explained.html>
5. <https://searchmobilecomputing.techtarget.com/definition/mobile-operating-system>

Means of Curriculum Delivery: Lecture, Group Learning, Seminar, Assignment, Google Classroom

SEMESTER VI

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code	18U6CAET4C	Elective 4: PHP & MySQL	Batch	2018-2021
			Semester	VI
Hrs/week	4 hrs		Credits	3

COURSE OBJECTIVES

Develops skills to create server-side scripts using PHP. Introduces server-side programming concepts and terminology. Explores a variety of server-side techniques and MySQL database manipulation.

COURSE OUTCOMES (CO)

On successful completion of the course, students would be able to

CO Number	CO Statement
CO1	Describe and use the features and syntax of programming language PHP
CO2	Create, translate, and process HTML information using the Common Gateway Information (CGI) protocol.
CO3	Apply PHP code to produce outcomes and solve problems.
CO4	Display and insert data using PHP and MySQL. Retrieve, insert, update, and delete data from the relational database MySQL
CO5	Test, debug, and deploy web pages containing PHP and MySQL.

MAPPING WITH PROGRAMME OUTCOMES

CO/ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	✓	✓	-	✓	-	-	-	-	-	-	-
CO2	-	✓	✓	-	-	-	-	-	-	-	-
CO3	-	✓	✓	✓	-	-	-	-	-	-	-
CO4	✓	✓	✓	-	✓	✓	-	-	-	-	-
CO5	-	✓	✓	-	✓	✓	-	-	-	-	-

SYLLABUS**UNIT I****Hours:10**

What is PHP? Why use PHP? Embedding PHP with HTML, Enhancing further, PHP Language Basics: Using variable in PHP, understanding Data types, operator and expressions. Making decisions: simple decision with if statements, switch, ternary operator, do..while loop, for statement, break, loop skip iteration, nested loop, Function: calling functions, working with variable functions, own functions references, recursive functions.

UNIT II**Hours:10**

Arrays: creating and accessing array elements, looping through arrays, multidimensional array, manipulating array Strings: creating and accessing strings, searching strings, replacing text within strings and formatting strings.

UNIT III**Hours:10**

Handling HTML forms with PHP: HTML forms work, capture form data with PHP, multi value fields, web forms with PHP, storing PHP variables in forms, create file upload forms, redirecting PHP.

UNIT IV**Hours:8**

Introducing Database and SQL: Deciding how to store data, quick play with MYSQL, connecting to MYSQL from PHP, retrieving data from MYSQL with PHP.

UNIT V**Hours:10**

Manipulating MYSQL data with PHP insert, update, delete records- Working with files and directories: understanding files and directories, getting information on files, opening and closing files, reading files and writing files , file permissions, Copying ,renaming and deleting files, working with directories. Case Study: Building a text editor (to be given as assignment).

Text books:

S.No	Authors	Title	Publishers
1.	Matt Doyle	Beginning PHP 5.3	TataMcgraw Hill,2009.

Reference books:

S.No	Authors	Title	Publishers
1.	VikramVaswani	PHP: A Beginners guide	TataMcgraw Hill,2009.
2.	Lawpoint	Guide to PHPLP Computer series	2007.
3.	Larry Ullman	PHP 6 and MySQL 5	Pearson Education,2000

Means of Curriculum Delivery: Lecture, Group Learning, Seminar, Assignment,Google Classroom

SEMESTER-VI

Programme Code:	All III- Year UG	Programme Title	All III- Year UG	
Course Code:	18U6NCCT02	Aptitude & Soft Skills- II	Batch	2018-2021
			Semester	VI
Hrs/ Week	2 Hrs		Credits	-

COURSE OBJECTIVES:

1. To acquire inter personal skills, problem solving skills and be an effective goal oriented team player.
2. To equip the students with the required soft skills that would instill confidence and courage in them, to take up new opportunities for their career.
3. To know about improving various soft skills required while working in a team.
4. To understand the various methods of solving problems involving numerical and logical reasoning.
5. To understand the methods of solving certain problems not using calculations but using only mental ability.
6. To know how to face the personal interview effectively.

COURSE OUTCOMES (CO):

On Successful Completion of the course the students will be able to achieve the following outcomes.

CO Number	CO Statement
CO1	Apply the inter personal and problem solving skills in the placement drive.
CO2	To apply the behavioral skills required for promoting individual competence by implementing the principles of interpersonal communication and value – based living to meet the market expectations.
CO3	grasp the approaches and strategies to solve problems with speed and accuracy.
CO4	Ability to reason critically by analyzing , elevating and extending arguments.
CO5	Explain the concepts deal with graphs,tables,number sequence and texts.

SYLLABUS

UNIT I: E- MATERIALS

- . Interactive Exercises for Grammar and Vocabulary
- . Audio/Video Excerpts of different Accents
- . Interpreting Posters
- .

UNIT II: APTITUDE

1. Numerical Reasoning
2. Mental Ability
3. Logical Reasoning

TEXT BOOKS:

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher
1	Prof .N. Lakshmana Perumal	Technical English – I	Sri Krishna Hitech Publishing Company Pvt. Ltd.
2	R. S. Aggarwal	Quantitative Aptitude for Competitive Examinations.	English, Paperback

REFERENCE BOOKS:

S. No	Author Name	Title of the Book	Publisher
1	Joyce Pereire	Technical English – II	Vijay Nicole Imprints Pvt.Ltd.

Means of Curriculam Delivery: Lecture, Group Discussion, Seminar, Assignment, Google Classroom

EXTRA CREDIT COURSE 01 - EXPORT MARKETING

Subject Code: 18UGCECC01

No. of Credits: 2

Objectives:

- To gain knowledge on Export distribution channels.
- To enable the students to understand Export and Import Procedures.
- To create awareness regarding the export promotion and export finance.

UNIT I

Export marketing – an overview -export marketing – meaning difference between export marketing and domestic marketing – basic function of export marketing.

UNIT II

Export distribution channels – direct export – indirect export – channel; small manufacturer.

UNIT III

Export promotion – characteristics of foreign buyers – forms of export promotion- importance of Promotional Activities.

UNIT IV

Export and Import Procedure Documents used in Foreign Trade.

UNIT V

Export Finance- Needs- Short terms, Medium and long term Source of Finance types of Credit.

Text Book

1.Rathor. BS-Export Marketing - Himalaya publishing House 2006

EXTRA CREDIT COURSE 02 - FINANCIAL REPORTING

Subject Code: 18UGCECC02

No. of Credits: 2

Objectives:

- To enable the students to acquire knowledge on Accounting Standards.
- To know the Accounting and Reporting of Financial Instruments and Financial reporting by mutual funds.
- To gain knowledge about the Human Resource Reporting, Inflation Accounting, Annual Report, Understand and analyzing the Annual Report.

UNIT I

Accounting standards issued by ICAI-International Accounting Standards-International Financial Reporting Standards (IFRS)-Interpretations by International Financial Reporting-Interpretation Committee (IFRIC)

UNIT II

Accounting for Corporate Restructuring-Consolidated Financial Statements-Consolidated profit and loss account, Balance sheet and cash flow statement-Treatment of investment in associates and in joint ventures in consolidated financial statements

UNIT III

Accounting and Reporting of Financial instruments-Measurement of financial instruments-Hedge accounting disclosures-Share based payments-Equity settled transactions-Determination of fair value of equity instruments vesting conditions modification-cancellation and settlement Disclosures.

UNIT IV

Financial Reporting by Mutual Funds-Non-banking finance Companies-Merchant bankers-Stock and Commodity market intermediaries.

UNIT V

Developments in Financial Reporting-Value added statement-Share holders Value Added-Human Resource Reporting-Inflation Accounting Annual Report-Understand and analyzing the Annual Report.

TEXT BOOK:

- 1.CA and ICWA Materials.
- 2.Arunkumar-Corporate financial reporting-shuchitha prakashan(p)Ltd,2014

**EXTRA CREDIT COURSE 03 - SECURITY ANALYSIS AND PORTFOLIO
MANAGEMENT**

Subject Code: 18UGCECC03

No. of Credits: 2

Objectives:

- To gain the knowledge on the basic concepts of BSE, NSE etc.
- To understand the different types of analyses such as economic, industry and company etc.
- To make the students to understand the basis of mutual fund.

UNIT I

Introduction to investment and securities – forms of investment media – risk and return - BSE,NSE,SEBI – its function.

UNIT II

Fundamental analysis : Economic analysis – industry analysis – company analysis.

UNIT III

Derivatives : Derivative market in india – concept of derivative – types of derivatives participants in features and options market.

UNIT IV

Modern portfolio theory : capital assets planing theory model.

UNIT V

Mutual funds – meaning – types – advantages and disadvantages – portfolio management.

TEXT BOOK

1. Punithavathy Pandian, “security analysis and portfolio management”-Vikas publishing house,1997.
2. S.Kevin,“security analysis and portfolio management”-PHI learning pvtLtd,2011.

EXTRA CREDIT COURSE 04 : ENTERPRISE RESOURCE PLANNING

Subject Code: 18UGCECC04

No. of Credits: 2

Objectives:

- To enable the students understand about the different organizational processes and work flows in ERP.
- To bestow knowledge on ERP services and Business Process Re-engineering.
- To give knowledge on ERP project and its implementation.

UNIT I

ERP: Introduction : Define – Functional Module in ERP System – Evolution of ERP Systems - Characteristics of ERP – Process Intergration With ERP Systems. Benefits of ERP Applications – Technology Behind ERP Systems.

ERP Market and Vendors: ERP Market – ERP Vendors – Service Oriented Architecture - ERP Package features.

UNIT II

Extended ERP Services: Defining Extended ERP – SCM and ERP – ERP and BI – ERP and E-Commerce. Business Process Re-engineering And ERP: Defining Business Process Reengineering- Enterprise redesign principles – Business process reengineering - BPR and Change Management – Different Approaches BPR Implementaion – Methodology for BPR Implementaion – Role of IT in BPR – BPR and EPR Systems – BPR success / failure factors.

UNIT III

Planning for ERP – Planning for ERP Implementaion – Understanding Organizational Requirements. - Understanding Economic and Strategies Justification – Analysing Project Scope – Determing Resources – Creating Budget for ERP Implementaion – Selecting the Right ERP Package- Preparing Organizations for ERP Implementaion. Implementation of ERP: Designing for ERP systems – ERP implementaion approaches – ERP implementaion Life cycle.

UNIT IV

Managing ERP Projects: Risk Failure factors in ERP Implementaion – Examples of ERP Failure- Mitigating implementaion risks – Management and complexity of Large scale ERP Projects- Training users to use ERP Systems. - Evaluating ERP Projets.

UNIT V

ERP Going live and post implementaion: Preparing to go live – Strategies for migration – to new ERP systems – Go live performance surprises – Managing ERP after go live – Maintenance of ERP Systems. Expanding ERP Boudaries: Service oriented architecture – Enterprises application integration – Application Services provider – Model for ERP implementaion.

TEXT BOOKS:

Ashim raj singla – Enterprise Resource Planning – Cengage Learning india Pvt . Ltd 2008

EXTRA CREDIT COURSE 05 - CORPORATE SOCIAL RESPONSIBILITY AND GOVERNANCE

Subject Code: 18UGCECC05

No. of Credits: 2

Objectives:

- To make the students to understand the concepts of corporate governance
- To gain knowledge on legislative framework of corporate governance and Corporate Social Responsibility and good corporate citizenship.
- To understand the Business Ethics and Genesis.

UNIT-I:

Evolution -Concept-Principles and development-Management structure for corporate governance-Board structure-Stake holder's relationship committee-Appraisal of Board performance-Transparency and disclosure.

UNIT-II:

Legislative framework of corporate governance:UK,USA,India-Corporate communication-Art and Craft of investors relation-Shareholders activism-Investor protection-changing role of Institutional Investors

UNIT-III:

Corporate social responsibility and good corporate citizenship:Various governance forums-Common Wealth Association for Corporate Governance-Organization for Economic Cooperation Development (OECD)-International Corporate Governance Network (ICGN)-National Foundation for Corporate Governance(NFCG)

UNIT-IV:

Business Ethics-Business dilemma versus decision-Dilemma resolution process-Business ethics as a strategic management tool-stakeholders protection-corporate leadership

UNIT-V:

Genesis-Meaning-Nature-Objectives-Scope of Corporate Sustainability.Legal framework -conventions and treaties on environmental- Health and safety-Social security issues.

TEXT BOOKS:

1. Corporate Governance in India : An Evaluation by Das,Subash Chandra.
2. Baxi CV-Corporate Social Responsibility And Governance – Excel books 2006.

EXTRA CREDIT COURSE 06 - INTERNATIONAL TRADE & FOREX

Subject Code: 18UGCECC06

Credits: 2

No. of

Objectives:

- To learn the overview of International Trade and Globalisation.
- To make the students to understand the concepts of foreign exchange management.
- To gain the knowledge on the basic regulation of FEMA.

UNIT I

International trade- Meaning- Scope- Challenges- Theories of International Trade- Balance of Payment- Trade Barriers

UNIT II

Competition Law and International Trade- Competition and Consumer Protection- Regulation of anti competition activity

UNIT III

Export Policy and Procedure- features- Export Promotion Schemes- SEZs , EOU- Deemed Export- Export Promotion Council

UNIT IV

Import Policy and Procedure- Import of Goods- Import on Import basis- Procedure for customer clearance- Warehousing- Canalised import

UNIT V

Introduction to FEMA- Forex Management-Nature- Forex Manager- Foreign Exchange Market- Foreign Exchange Rate- Types- Present status of Foreign exchange Market in India

Text Books:

1. Francis cherunilam -International trade-Himalaya publication House 2010

EXTRA CREDIT 07: BRAND MANAGEMENT

Sub Code: 18UGCECC07

No. of Credits: 2

Objective:

- To understand the methods of managing brands and strategies for brand management.
- To successfully establish and sustain brands and lead to extensions

UNIT I

Basics Understanding of Brands – Definitions - Branding Concepts – Functions of Brand - Significance of Brands – Different Types of Brands – Co branding – Store brands.

UNIT II

Strategic Brand Management process – Building a strong brand – Brand positioning – Establishing Brand values – Brand vision – Brand Elements – Branding for Global Markets – Competing with foreign brands.

UNIT III

Brand image Building – Brand Loyalty programmes – Brand Promotion Methods – Role of Brand ambassadors, celebrities – On line Brand Promotions.

UNIT IV

Brand Adoption Practices – Different type of brand extension – Factors influencing Decision for extension – Re-branding and re-launching.

UNIT V

Measuring Brand Performance – Brand Equity Management - Global Branding strategies - Brand Audit – Brand Equity Measurement – Brand Leverage -Role of Brand Managers– Branding challenges & opportunities.

TEXT BOOK:

Keller/ Parameswaran & Jacob, Strategic Brand Management: Building, Measuring, and Managing Brand Equity, Pearson Education India; 4 Edition 2015.

REFERENCE BOOKS:

1. Y.L.R. Moorthi, Brand Management, Vikas Publishing House, 1st Edition 2003.
2. Sagar Mahim, D. P. Agrawal, Brand Management, ANE Books Edition 2009.
3. Kirti Dutta, Brand Management: Principles and Practices, Oxford University Press, Edition 2012.
4. Ranjeet Verma, Brand Management, Laxmi Publications, 1st Edition 2009.

EXTRA CREDIT COURSE 08: MULTIMEDIA AND ITS APPLICATIONS

Subject Code: 18UGCECC08

No.of Credits: 2

Objectives:

- To enable the students learn the overview of Multimedia systems.
- To provide knowledge about the Basic concepts of Sound and Image Processing.
- To enhance the knowledge about the Multimedia Applications.

UNIT I

Media and Data Streams : Medium – Main Properties of a Multimedia Systems – Multimedia – Traditional Data Streams Characteristics – Data Streams characteristics for continuous media.

UNIT II

Sound / Audio: Basics sound Concepts – Music – Speech . Video and Animation : Basics concepts – Television – Computer Based Animations.

UNIT III

Images and Graphics : Basics concepts – Computer Image Processing – Data Compression : Storage space – coding requirement – source entropy and hybrid coding – some basic compression techniques – JPEG – MPEG – DVI.

UNIT VI

Multimedia Communication system : Application subsystem – Transport subsystem – quality of services and resource management.

UNIT V

Multimedia Applications : Introduction – Media Preparation – Media Composition – Media Integration – Media Communication – Media Entertainment.

Reference Books:

1. Ralf Steinmetz and Klara Nahrstedt , Multimedia : Computing , Communication & Applications , Pearson Education.

EXTRA CREDIT COURSE 09: E-COMMERCE

Subject Code: 18UGCECC09

No. of Credits: 2

Objectives:

- To provide knowledge about Electronic Commerce.
- To enable the students understand the technology of e-Commerce for Business Application.
- To make the student aware of the Techniques in the Application of e-Commerce.

UNIT I

E-commerce – framework – classification of electronic commerce – Anatomy of E-Commerce Applications – components of the I way –network access equipment – internet terminology.

UNIT II

Electronic Data Interchange – Benefits – EDI Legal, Security & privacy issues – DEI software implementation – value added networks – internal information systems – work flow atomization and coordination – customization and internal commerce.

UNIT III

Network security and firewalls – client server network security – emerging client server security threats – firewalls and network security – data and message security – encrypted documents and electronic mail – hypertext publishing – technology behind the web – security and the web.

UNIT IV

Consumer oriented electronic commerce: consumer oriented applications – mercantile process models – mercantile models from the consumer’s perspective – mercantile models from the merchant’s perspective.

UNIT V

Electronic payment systems – types – digital token based electronic payment system – smart cards & credit card electronic payment systems – risk designing electronic payment.

Text Books:

1. Ravi Kalakota and Andrew B. Whinston: “Frontiers of Electronic Commerce”, Pearson Education, First Edition, 2006.
2. Elias M Awand: “Electronic Commerce”, Phi Learning Pvt Ltd, Third Edition, 2007.

Reference Books:

1. Daniel Minoli and Emma Minoli: “Web Commerce Technology Handbook”, Tata McGraw Hill Publishing, New Delhi, First Edition, 2006.
2. Efrain Turban and David King: “Electronic Commerce”, Pearson Education, First Edition 2009.
3. Pete Loshin: “Electronic Commerce”, Firewall Media, Fourth Edition, 2005.

EXTRA CREDIT COURSES 10: STRESS MANAGEMENT

Subject Code: 18UGCECC10

No. of Credits: 2

Objectives:

- To provide a broad physical, social and psychological understanding of stress.
- To understand the management of work related stress
- To develop and implement effective strategies to prevent and manage stress at work.

UNIT I

Meaning – Symptoms – Works Related Stress – Individual Stress – Reducing Stress – Burnout.

UNIT II

Time Management – Techniques – Importance of planning the day – Time management schedule – Developing concentration – Organizing the Work Area – Prioritizing – Beginning at the start – Techniques for conquering procrastination – Sensible delegation – Taking the right breaks – Learning to say ‘No’.

UNIT III

Implications – People issues – Environmental issues – Psychological fall outs – Learning to keep calm – Preventing interruptions – Controlling crisis – Importance of good communication – Taking advantage of crisis – Pushing new ideas – Empowerment.

UNIT IV

Developing a sense of Humour – Learning to laugh – Role of group cohesion and team spirit – Using humour at work – Reducing conflicts with humour.

UNIT V

Improving Personality – Leading with Integrity – Enhancing Creativity – Effective decision Making – Sensible Communication – The Listening Game – Managing Self – Meditation for peace – Yoga for Life.

Text Book:

1. D M Pestonjee, Stress and Work: “Perspectives on Understanding and Managing Stress”, SAGE Response, First Edition 2013.

Reference Books:

1. Kamlesh Jani, Ratish Kakkad, Stress Management, Pothi Publishers, Edition 2008.
2. Aarti Gurav, Time Management, Buzzing stock Publishing House, First Edition 2014.
3. Sanjay Kumar, Pushp Lata, Communication Skills, Oxford University Press, Second Edition 2015.
4. Barun Mitra, Personality Development and Soft Skills, Oxford University Press, Second Edition 2017.

EXTRA CREDIT COURSE 11: MATHEMATICS FOR PROFESSIONAL COURSES

Subject Code: 18UGCECC11

No. of Credits: 2

OBJECTIVES

- To understand the fundamental concepts of Set Theory and Linear Equations.
- To solve the problems in Mathematics of Finance, sequence and series.
- To acquire the knowledge of correlation, regression and problem solving.

UNIT 1:

Sets, Functions and Relations -Equations Linear equations–Homogeneous linear equations.

UNIT 2:

Sequence and Series–Arithmetic progression–Geometric progression; Mathematics of Finance: Simple interest–Compound interest.

UNIT 3:

Limits — Basic concepts of Differentiation - Integration

UNIT 4:

Measures of Central Tendency and Dispersion, Arithmetic Mean, Median – Mode, Geometric Mean and Harmonic Mean, Standard deviation, Quartile deviation

UNIT 5:

Correlation and Regression.

Text Book:

1. Discrete Mathematics, B.S. Vatssa, Wishwa Prakashan Private Limited, 3rd Edition.
2. Business Mathematics and Statistics, P.A. Navanitham, Jai Publisher, June 2004.

Reference Books:

- 1 .Dr.M.K.Venketaramen,Dr.N.Sridharan,N.Chandarasekaran: DiscreteMathematics The National publishing Company – 2006.
- 2.P.R.Vittal :Business Mathematics and Statistics, Margham Publications.-2011
3. Sanchetti, D.C and Kapoor, V.K: Business Mathematics, Sultan chand Co & Ltd-2002.

Unit 1: Chapter 2 and 3, chapter 7, 7.1-7.4 (Text Book 1)

Unit 2: Chapter 1 and 2 (Text Book 2, Part 1)

Unit 3: Chapter 5, 6 and 8 (Text Book 2, Part 1)

Unit 4: Chapter 7 (Text Book 2, Part 2)

Unit 5: Chapter 12 and 13 (Text Book 2, Part 2)

Chapter 3 , Section 3.1-3.4 and Chapter 6, Section 6.1-6.3 (Text Book 3)

EXTRA CREDIT COURSE 12: SHARES AND COMMODITIES

Subject Code: 18UGCECC12

No. of Credits: 2

Objectives:

- To make the students understand about fundamental concepts of stock marketing.
- To give practical exposure in analyzing stock movements.
- To provide knowledge on the role of intermediaries in the capital market.

UNIT I

Need and Importance of Capital Market – Primary Market- Different types of Securities dealt in the Capital Market.

UNIT II

Secondary Market – Origin and Growth – Types of Securities traded – Role and Functions of stock Exchange – NSE –Reading of Stock Indices - weaknesses of stock Exchange.

UNIT III

Listing of Securities – Group A, Group B, Group C Shares – Advantages – Drawbacks – Listing Procedure – Criteria for Listing – Listing Obligations.

UNIT IV

Registration of Stock Brokers – Procedure – Code of Conduct – Kinds of Brokers and their Assistants – Methods of Trading in a Stock Exchange – Carry over or Bald Transactions – Genuine Trading – Kinds of Speculators – Speculative Transactions.

UNIT V

Commodities market – functions of commodities market – pricing – settlement -Credit Rating Agencies - CRISIL – CARE – ICRA Agencies Dematerialization – Depositories.

TEXT BOOKS:

1. S. Kevin, Security Analysis and Portfolio Management, Prentice-Hall of India Pvt.Ltd, 2nd Revised Edition 2010.
2. Prasanna Chandra, Investment Analysis and Portfolio Management, McGraw Hill Education, 4th Edition 2012.

REFERENCE BOOKS:

1. Dr. Vanita Tripathi , Security Analysis & Portfolio Management, Taxmann Publications Pvt. Ltd, Edition 2016.
2. Fischer, Security Analysis & Portfolio Management, Pearson Education India, 6th Edition 2002.
3. Punithavathy Pandian, Security Analysis & Portfolio Management, Vikas Publishing House, 2nd edition 2012.

EXTRA CREDIT COURSE 13: INTERNATIONAL MARKETING

Subject Code: 18UGCECC13

No.of Credits: 2

Objectives:

- To enable the students to understand the principles and concepts in International Marketing.
- To provide knowledge about marketing management in the International Perspectives.
- To familiarise the students with marketing strategies for the dynamic International Markets.

UNIT I:

The importance and scope of marketing - Evolution of marketing: From transaction-based to relationship marketing- Marketing research and Decision support systems - Market Segmentation - Targeting and Positioning.

UNIT II

Product Mix - Product Management Decisions, Product Life Cycle strategies - New Product Development - Pricing considerations and approaches - Pricing strategies.

UNIT III

Distribution channels and physical distribution.- Marketing Communication and Promotion mix Strategies - Nature of International Marketing: Meaning - Framework for International Marketing - Barriers for International Marketing

UNIT IV

International Marketing Decisions: Product Planning - Designing Development for International Markets - Pricing Decisions: Pricing Strategies and Price setting for International Markets.

UNIT V

Distribution: Channel Management and Physical Distribution - Management in International Marketing Promotion: International Advertising Programs - Sales Management and Sales Promotion for Foreign Markets.

Text Books:

1. P. SubbaRao: "International Business", Himalaya Publication House, 2nd Edition 2010.
2. Saxena: "Marketing Management", Himalaya Publication, 13th Edition, 2010.

Reference Books:

1. Warren J Keegan: "Global Marketing", Pearson Education, 7th Edition, 2002.
2. Franis Cherunilan: "International trade and Export Management", Himalaya Publication house, 1st Edition, 2012.
3. Paras Ram: "International Business", Anupam publication, 21st Edition, 2012.

EXTRA CREDIT COURSE 14: RETAIL MARKETING

Subject Code: 18UGCECC14

No.of Credits: 2

Objective:

- To enable the students to understand about Global Retailing.
- To provide knowledge on Visual Merchandise Management.
- To familiarise the students with the Retail shoppers' behaviour.

UNIT I

An overview of Global Retailing – Challenges and opportunities – Retail trends in India – Socio economic and technological Influences on retail management – Government of India policy implications on retails.

UNIT II

Organized and unorganized formats – Different organized retail formats – Characteristics of each format – Emerging trends in retail formats – MNC's role in organized retail formats.

UNIT III

Choice of retail locations - internal and external atmospherics – Positioning of retail shops – Building retail store Image - Retail service quality management – Retail Supply Chain Management – Retail Pricing Decisions. Merchandising and category management – buying.

UNIT IV

Visual Merchandise Management – Space Management – Retail Inventory Management – Retail accounting and audits - Retail store brands – Retail advertising and promotions – Retail Management Information Systems - Online retail – Emerging trends .

UNIT V

Understanding of Retail shopper behavior – Shopper Profile Analysis – Shopping Decision Process - Factors influencing retail shopper behavior – Complaints Management - Retail sales force Management – Challenges in Retailing in India.

TEXT BOOKS:

1. A.Sivakumar, Retail Marketing, Excel Books, Edition-1, 2007.
- 2.David Gilbert, Retail Marketing Management, Pearsons Education, Edition-2006.

REFERENCE BOOKS:

1. Dr.L.Natarajan, Retail Marketing, Margham Publications, Edition-1,2013.
- 2.S.Banumathi, Retail Marketing, Himalaya Publishing House, Edition-2015.
- 3.B.B.Mishra, Retail Marketing, Vrinda Publication, Edition-2010.

EXTRA CREDIT COURSE 15: DERIVATIVES

Subject Code: 18UGCECC15

No.of Credits: 2

Objectives

- To make the understand about the concept of Derivatives and their types.
- To provide knowledge on Options and Futures.
- To know about Hedging and the financial Derivatives Market in India.

UNIT-I

Derivatives– Features of a Financial Derivative –Types of Financial Derivatives - Basic Financial derivatives – History of Derivatives Markets – Uses of Derivatives – Critiques of Derivatives – Forward Market: Pricing and Trading Mechanism – Forward Contract concept – Features of Forward Contract – Classification of Forward Contracts – Forward Trading Mechanism – Forward Prices Vs Future Prices.

UNIT- II

Options and Swaps – Concept of Options – Types of options – Option Valuation – Option Positions Naked and Covered Option – Underlying Assets in Exchange - traded Options – Determinants of Option Prices – Binomial Option Pricing Model – Black - Scholes Option Pricing – Basic Principles of Option Trading – SWAP: Concept, Evaluation and Features of Swap – Types of Financial Swaps – Interest Rate Swaps – Currency Swap – Debt - Equity Swap.

UNIT – III

Futures – Financial Futures Contracts – Types of Financial Futures Contract – Evolution of Futures Market in India – Traders in Futures Market in India – Functions and Growth of Futures Markets – Futures Market Trading Mechanism - Specification of the Future Contract – Clearing House –Operation of Margins – Settlement –Theories of Future prices– Future prices and Risk Aversion – Forward Contract Vs. Futures Contract.

UNIT –IV

Hedging and Stock Index Futures – Concepts – Perfect Hedging Model – Basic Long and Short Hedges – Cross Hedging – Basis Risk and Hedging – Basis Risk Vs Price Risk –Hedging Effectiveness – Devising a Hedging Strategy – Hedging Objectives – Management of Hedge – Concept of Stock Index – Stock Index Futures – Stock Index Futures as a Portfolio management Tool – Speculation and Stock Index Futures – Stock Index Futures Trading in Indian Stock Market.

UNIT-V

Financial Derivatives Market in India –Need for Derivatives – Evolution of Derivatives in India – Major Recommendations of Dr. L.C. Gupta Committee – Equity Derivatives – Strengthening of Cash Market – Benefits of Derivatives in India – Categories of Derivatives Traded in India – Derivatives Trading at NSE/BSE – Eligibility of Stocks – Emerging Structure of Derivatives Markets in India -Regulation of Financial Derivatives in India – Structure of the Market – Trading systems –Badla system in Indian Stock Market–Regulatory Instrument

Text Books:

1. Gupta.S.L : “Financial Derivatives Theory, Concepts and problems”, PHI, 1st Edition 2011
2. Bishnupriya Mishra & Sathya Swaroop Debasish: “Financial Derivatives”, Excel books ,1st Edition 2007

Reference books:

1. Kevin's.S: “Commodity and Financial Derivatives”, DPH Publishing House, 1st Edition 2011.
2. Bhole L.M: “Financial Markets and institutions”, Tata McGraw – Hill New Delhi, 5 th Edition 2012.
3. S.Gurusamy: “Financial Market and Institution”,Tata McGraw-Hill publications, 3 rd Edition 2011.

EXTRA CREDIT 16: EXPORT AND IMPORT PROCEDURES

Subject Code: 18UGCECC16

No.of Credits: 2

Objective:

- To enable the students to understand about export and import procedures
- To provide adequate knowledge on export and import documentation.
- To impart knowledge on export and import procedures.

UNIT I

Introduction to Export Management : Meaning – objectives – scope – Need for and importance of export trade – Distinction between internal trade and international trade – Problems faced by exporters.

UNIT II

Features and Functions of export marketing – Sources of market information – Product planning – Quality control – Export pricing – Export marketing channels – Strategy formulation.

UNIT III

Steps involved in export – Confirmation of order – Production of goods – Shipment – Negotiation – Documents used for export – Commercial documents

– Regulatory documents – ISO Certificate.

UNIT IV

Import Trade law in India – Preliminaries for starting Import Business – Registration of Importers – arranging finance for Import – Arranging letter of Credit for Imports – Balance of Payments – Liberalization of Imports.

UNIT V

Retirement of Import Documents and RBI's directives for making payment for Imports – Customs clearance of Imported Goods and payments of customs Duty – Imports under special schemes.

Text Books:

1. Subramanian Balagopal.T.A.S", Export Marketing",Himalaya Publication House,Mumbai,Edition 1,2010.
2. Francis Cherunilam,"International Trade & Export Management",Himalaya Publication House,Mumbai,Edition 1,2012.

References Books:

1. Veera Reddy.P,"Import made Easy", Commercial Law Publication, New Delhi",Edition 5,2001.
2. Mahajan.M.I,"Export Policy Procedure & Documentation", Snow White Publication,Mumbai, Edition 24,2011.
3. A Nabhi : "How to Import 2005-2006",A Nabhi Publications, 1st Edition 2006.

EXTRA CREDIT 17: COST AUDIT

Subject Code: 18UGCECC17

No.of Credits: 2

Objectives:

- To enable the students to understand the scope and nature of cost audit.
- To provide knowledge on cost audit techniques and programmes.
- To give practical knowledge on the preparation of cost audit reports and their usefulness to various stakeholders.

UNIT – I (18 Hours)

Cost Audit: Meaning and Definition – Scope, Nature and Purposes of Cost Audit - Advantages and Disadvantages of Cost Audit - Differences between cost Audit. Financial Audit and Management Audit.

UNIT – II (18 Hours)

Cost Audit Techniques and Programmes: Implementing Authorities of Cost Audit – Types and Areas of Cost Audit- Situations for conducting cost audit in the business unit – Cost accounting records and cost audit under Companies Act, - Preparation of Cost Audit – Phases / Stages of Cost Audit.

UNIT – III (18 Hours)

Cost Auditor: Qualifications, Dis-qualifications – Appointment – Rights and Responsibilities – Principal functions of a cost auditor - Appointing Authorities of a Cost Auditor.

UNIT – IV (18 Hours)

Cost Audit Reports: Ceiling on number of Audits – Cost Audit in India – Forms or Aspects of Cost Audit – Statutory provisions of Cost Audit (Cost Records & Audit) Rules, - Duties of the client company under Cost Audit.

UNIT – V (18 Hours)

Other Areas of Audit: Meaning and Objectives of Human Resource Audit, Operational Audit, Forecast Audit, Social Audit, Tax Audit and Forensic Audit.

TEXT BOOKS

1. Ravinder Kumar & Virendar Sharma : “Auditing Principles and Practice “(Based on the Companies Act,), PHI Learning Private Limited, New Delhi (2015)
2. I. Narsis : “Theory in Cost Accounting”, Atlantic Publishers and Distributors (P) Ltd. (2009)
3. S.K. Basu - “Auditing Principles and Techniques”, Pearson Education, 2nd Impression, 2007.

REFERENCE BOOKS

1. Jawahar Lal & Seema Srivastava : “Cost Accounting”, Tata Mc-Graw Hill Publishing Company, New Delhi,4th Edition2009
2. S.K. Basy : “ Auditing and Assurance” (For CA Integrated Professional Competence), Pearson Education 2012.
3. Bhabatosh Banerjee: “Cost Accounting” (Theory & Practice), PHI Learning Private Limited, 13th Edition 2014.

EXTRA CREDIT COURSE 18 : EXECUTIVE BUSINESS COMMUNICATION

Subject Code: 18UGCECC18

No. of Credits: 2

Objectives:

- To develop the written and oral Communication skill.
- To nurture the communication skills relating to business.
- To enable the students to prepare a good business report.

UNIT I

Business Communication: Meaning – Importance of Effective Business Communication- Modern Communication Methods – Business Letters : Need – Functions - Kinds - Essentials of Effective Business Letters - Layout.

UNIT II

Trade Enquiries - Orders and their Execution - Credit and Status Enquiries – Complaints and Adjustments - Collection Letters – Sales Letters – Circular Letters.

UNIT III

Banking Correspondence-Insurance Correspondence -Agency Correspondence.

UNIT IV

Company Secretarial Correspondence (Includes Agenda, Minutes and Report Writing)

UNIT V

Application Letters – Preparation of Resume - Interview: Meaning – Objectives and Techniques of various types of Interviews – Public Speech – Characteristics of a good speech – Business Report Presentations.

Text Books:

1. Rajendra Pal and J.S.Korlahalli: “Essentials of Business Communication”, Sultan Chand and Sons, New Delhi, 2014.
2. M.S.Ramesh and C. C Pattanshetti, “Business Communication”, R.Chand and Co, New Delhi, 2003.

Reference Books:

1. C.B.Gupta: “Business Communication and Customer Relations, Sultan Chand and Co, 2000
2. M.V. Rodriguez: “Effective Business Communication Concept”, Vikas Publishing Company, 2003.

EXTRA CREDIT 19: DISASTER MANAGEMENT

Sub Code: 18UGCECC19

No. of Credits: 2

Objective:

On successful completion of the course the students should have understood

- Existing institutional arrangements, interdepartmental linkages, role of NGO's in Disaster Management
- Agency for the execution of disaster management schemes of the Government
- Creating awareness among the people about disasters and its consequences

UNIT I

Understanding Disasters · Meaning, nature, characteristics and types of Disasters, Causes and effects, Disaster: A Global View, Disaster Profile of India, The Disaster Management cycle.

UNIT II

Geological and Mountain Area Disasters · Earthquakes · Volcanic Eruption · Landslides · Snow Avalanches - Wind and Water Related Natural Disaster · Floods and Flash Floods · Droughts · Cyclones · Tsunamis- Man Made Disasters · Understanding Man-Made Disasters · Fires and Forest Fires · Nuclear, Biological and Chemical disaster · Road Accidents

UNIT III

Introduction to disaster Preparedness · Disaster Management: Prevention, Preparedness and Mitigation · Disaster Preparedness: Concept & Nature · Disaster Preparedness Plan · Disaster Preparedness for People and Infrastructure · Community based Disaster Preparedness Plan.

UNIT IV

Technologies for Disaster Management · Role of IT in Disaster Preparedness · Remote Sensing, GIS and GPS · Use and Application of Emerging Technologies · Application of Modern Technologies for the Emergency communication. · Application and use of ICST for different disasters.

UNIT V

Reconstruction and Rehabilitation as Means of Development · Damage Assessment · Role of various Agencies in Disaster Management and Development · Information Management Structure Development of Physical and Economic Infrastructure.

TEXT BOOK:

1. M.M.Sulphey, Disaster Management, PHI Learning Pvt., Ltd., Edition-1, 2016.

REFERENCE BOOKS:

1. Krishna Kumar Singh, Disaster Management, APH Publishing Corporation, Ed1 2015
2. T.Sezhiyan, I. Sunder, Disaster Management, Sarup Book Publishers, Edition-1, 2007.
3. B.K. Reza, Disaster Management, Global Publication, Edition-2011.
4. Dhawan, Disaster Management & Preparedness, CBS Publishers, Edition-2014.

EXTRA CREDIT 20: BUSINESS ENVIRONMENT

Sub Code: 18UGCECC20

No. of Credits: 2

Objective:

- To promote basic understanding of the concepts of business environment
- To provide broad knowledge on domestic and international business environment
- To make learners the impact of environment on business.

UNIT I

Business - Scope - Characteristics - Goals - Criticisms - Business Environment - Objectives and types.

UNIT II

Economic Environment- Concept –Factors-Basic Economic System - Economic Planning-Privatization – Nature and objectives.

UNIT III

Political Environment- Political Institutions-Legislature, Executives and Judiciary - Government in Business-Regulatory, Intervention and Participatory roles.

UNIT IV

Financial Environment - Financial System -RBI - Commercial banks– International Economic Institutions - World Bank – IMF– WTO.

UNIT V

Social and Cultural Environment-Impact of Culture on Business - People's Attitude to Business and Work-Business and Society - Social responsibility of Business – CSR.

TEXT BOOK:

1. Justin Paul, Business Environment – Text and Cases, McGrawhill Publications, 3rd Edition 2010

REFERENCE BOOKS:

1. Jan Bojo Karigoran Maler, Environment and Development Economic Approach, Springer Publications, Edition 2011.
2. Anil Tandon,, Business Environment Text and Cases, Anmol Publications, Edition 2010.
3. A.C.Fernando, Business Environment, Pearson India, Edition 2011
4. R.D’Souza, Environment, Technology & Development: Critical and Subversive essays, Orient blackswan Publications, Edition 2012.

EXTRA CREDIT 21: LOGISTICS AND SUPPLYCHAIN MANAGEMENT

Sub Code : 18UGCECC21

No. of Credits: 2

Objective:

The objective of the subject is to explore

- The interlinking between Logistics and supply chain management.
- The course seeks to provide the key concepts and solution in the design, operation, control and management of supply chain as integrated systems.
- The impact of supply chain in gaining competitive advantage.

UNIT I

Introduction to logistics – Business logistics – marketing logistics – objectives – importance – logistics and customer services – physical supply and distribution – elements and evolution of purchasing and integrated logistics – Integrated logistical activities – strategic integrated logistics management.

UNIT II

Transportation – types – transportation decision making service selection – sea transport, Air, Courier, road and pipe lines – infrastructure – vehicle routing and scheduling – MTO / Intermodal transportation – regulation.

UNIT III

Warehousing – concepts & development – types – operations location analysis – storage – need – functionality and principles – materials handling considerations – packaging – perspectives – purposes – functions – design and costs – Traffic inventory management models – pull and push methods – EOQ – assumptions – policies and control – methods of improved inventory management.

UNIT IV

Logistics information system – system design – Information functionality and principles of information architecture – application of new information technology – EDI standards.

UNIT V

Future management of logistics – logistics and outsourcing – Benefits – third party logistics – value added services – reverse logistics.

TEXT BOOK:

1. Donald J. Bowersox & David J. Closs, Supply Chain Logistics Management, McGraw Hill Education , 3rd Edition 2016.

REFERENCE BOOKS:

1. Raghuram, Logistics And Supply Chain Management: Cases and Concepts, Laxmi Publications, Edition 2015.
2. Janat Shah, Supply Chain Management, Pearson Education, 1st Edition 2009.
3. Ballou, Business Logistics/Supply Chain Management, Pearson Education India, 5th Edition 2007.
4. Chopra & Kalra, Supply Chain Management, Pearson Education India; 6th Edition 2016.

EXTRA CREDIT 22: QUALITY MANAGEMENT

Sub Code: 18UGCECC22

No. of Credits: 2

Objective:

On successful completion of the course the students should have understood

- To introduce the fundamental concepts of total quality management, statistical process control, six sigma and the application of these concepts.
- To provide a basic understanding of "widely-used" quality analysis tools and techniques.

UNIT I

Definitions – TOM framework, benefits, awareness and obstacles. Quality – vision, mission and policy statements. Customer Focus – customer perception of quality, Translating needs into requirements, customer retention. Dimensions of product and service quality. Cost of quality.

UNIT II

Overview of the contributions of Deming, Juran Crosby, Masaaki Imai, Feigenbaum, Ishikawa, Taguchi techniques – introduction, loss function, parameter and tolerance design, signal to noise ratio. Concepts of Quality circle, Japanese 5S principles and 8D methodology.

UNIT III

Meaning and significance of statistical process control (SPC) – construction of control charts for variables and attributed. Process capability – meaning, significance and measurement – Six sigma concepts of process capability. Reliability concepts – definitions, reliability in series and parallel, product life characteristics curve. Total productive maintenance (TMP) – relevance to TQM, Terotechnology. Business process re-engineering (BPR) – principles, applications, reengineering process, benefits and limitations.

UNIT IV

Quality functions development (QFD) – Benefits, Voice of customer, information organization, House of quality (HOQ), building a HOQ, QFD process. Failure mode effect analysis (FMEA) – requirements of reliability, failure rate, FMEA stages, design, process and documentation. Seven old (statistical) tools. Seven new management tools. Bench marking and POKA YOKE.

UNIT V

Introduction to IS/ISO 9004:2000 – quality management systems – guidelines for performance improvements. Quality Audits. TQM culture, Leadership – quality council, employee involvement, motivation, empowerment, recognition and reward.

TEXT BOOK:

1. R. Janakiraman and R,K Gopal, Total Quality Management, PHI Learning, 1st Edition 2009.

REFERENCE BOOKS:

1. Howard S.Taylor and Francis, Quality Management Systems, New century Publications, Edition 2000
2. L.Suganthi Anand Samuel, Total Quality Management, PHI learning, 1st Edition 2009,
3. Joseph M.Juran, Quality Handbook, Mc Grawhill, 6th Edition .
4. Bell Desmond Heivemann, Managing Quality, Butterworth Publications, Edition 1994.

EXTRA CREDIT 23 : MANAGEMENT OF SMALL AND NEW ENTERPRISES

Sub Code : 18UGCECC23

No. of Credits: 2

Objective:

On successful completion of the course the students should have understood

- Identification, organization and building of new enterprise
- To prepare, analyze and execute business plan
- The logical decision making in business

UNIT I

Entrepreneurship: Small Scale Introduction Institutional- Small scale Enterprises – Infrastructure-Entrepreneurial Competencies for Small Scale Enterprises -Institutional Interface

UNIT II

Establishing small scale enterprises -opportunities scanning—choice of enterprise - market assessment for sse - choice of technology and selection of site

UNIT III

Small scale enterprises — getting organized- financing the new/small enterprise - preparation of the business plan - ownership structure and organization framework

UNIT IV

Operating the small scale enterprise - financial management issues in SSE -operations management issues in SSE- Marketing management issues in SSE - organizational relations in SSE

UNIT V

Performance appraisal and growth strategies - management performance lessons growth and Assessment and control from stabilization - strategies for stabilization and successful strategies Growth entrepreneurs of small - managing family enterprises

TEXT BOOK:

1. Prof.Nirali Pandt, Management of new and small Enterprise, Dotcom Publications, 5th Edition,2016.

REFERENCE BOOKS:

1. C.S.Prasad, Small and Medium Enterprise in global Perspective, New Century Publications, I Edition, 2009
2. Taxmann, Small and Medium Enterprises in India, Tax mann Publication, Edition 2013.
3. Karen Patten Ayman, Information Technology for small business, Sprnger publications, Edition 2012.
4. Sarika Lohana, Medium, Micro and Small Enterprises, New century Publications, 1st Edition 2014.

EXTRA CREDIT 24: TOURISM MANAGEMENT

Sub Code : 18UGCECC24

No. of Credits: 2

Objective:

On successful completion of the course the students should have understood

- The handling of human resource in the context of complex work situations of the tourism industry.
- The complexities of marketing the tourism product
- The challenges and rewards of Tourism industry

UNIT I

History of Tourism both International and National, Definition, nature, importance, components and typology of tourism.

UNIT II

Concepts of domestic and international tourism, recent trends. Organization of both national and international in world in promotion and development – WTO, IATA, UPTAA, AI, IATO, etc.

UNIT III

Growth and development of tourism in India, National Action Plan 1992.

UNIT IV

Impacts of tourism-economics, social, physical and environmental, Tourism trends world over and its futuristic study.

UNIT V

Emerging trends in tourism—health tourism, adventure tourism, ecotourism .

TEXT BOOK:

1. Rajan chauhan, Tourism Management, APH Publishing Corporation- Edition-2012.

REFERENCE BOOKS:

1. David Weaver Laura Lawton, Tourism Management, Jhon Wiley & Sons Inc., Edition-2, 2006.
2. Ratandeep Singh, Tourism and Transport Management, Kanishka Publishiners, Edition-1, 2008.
3. Atul Shrivastava, Tourism Planning & Management, Anmol Publications Pvt., Ltd., Edition-2010.
4. Vandhana Joshi, Achana Biwal, Tourism Operations & `Management, Oxford University Press, Edition-1, 2009.

EXTRA CREDIT 25 : EVENT MANAGEMENT

Sub Code: 18UGCECC25

No. of Credits: 2

Objective:

- On successful completion of the course the students should have understood Organization and management of events
- The management of accounting and financial aspects in organizing an event
- Planning the logistics and coordinating the technical aspects

UNIT I

Why Event Management, Requirement of Event Manager, Analyzing the events, Scope of the Event, Decision-makers, Technical Staff, Developing Record-Keeping Systems, Establishing Policies & Procedures

UNIT II

Preparing a Planning Schedule, Organizing Tasks, Assigning Responsibility, and Communicating, Using the Schedule Properly, The Budget, Overall Planning tips, Checklists, Expert Resources, Computer Software Required.

UNIT III

Who are the people on the Event, Locating People, Clarifying Roles, Developing content Guidelines, Participant Tips, Reference Checks, Requirement Forms, Introduction, Fees & Honorariums, Expense Reimbursement, Travel Arrangements, Worksheets.

UNIT IV

Types of Events, Roles & Responsibilities of Event Management in Different Events, Scope of the Work, Approach towards Events

UNIT V

Introduction to PR – Concept, Nature, Importance, Steps, Limitations, Objectives Media – Types of Media, Media relations, Media Management PR strategy and planning – identifying right PR strategy, Brain Storming sessions, Event organization, writing for PR

TEXT BOOK:

1. Sita Ram Singh , Event Management, Aph Publishing Corporation , Edition 2009.

REFERENCE BOOKS:

1. Wagen, Event Management, Pearson, 1st edition 2005.
2. C.P. Harichandan, Event Management, Global Vision Publishing House, 1st edition 2010.
3. Tony Rogers, A Global Industry (Events Management), S.Chand (G/L) & Company Ltd, 3rd Edition 2013.
4. D. G. Conway, The Event Manager's Bible: The Complete Guide to Planning and Organising a Voluntary or Public Event, Viva Books 1st Edition 2010.

EXTRA CREDIT 26: HOSPITALITY MANAGEMENT

Sub Code: 18UGCECC26

No. of Credits: 2

Objective :

On successful completion of the course the students should have understood

- To plan and execute hospitality events in coordination with back-of-the-house managers
- To Design and evaluate a hospitality operations plan, employing control systems and technologies, with guest preferences
- To Supervise and coordinate personnel, demonstrating clear communication and cultural sensitivity

UNIT I

The World of Hospitality: Introduction to Hotel, Travel and tourism Industry - Nature of Hospitality: Communication, Turnover, Demands and Rewards - Economic and Other Impacts of Hotel, Tourism, and Travel Industry - Early History of Lodging - Globalization of the Lodging Industry – Franchising

UNIT II

The Organization and Structure of Lodging Operations : Size and Scope of the Industry - Classifications of Hotels - Hotel Market Segments - Organization of Hotels - Food Service Industry : Composition and Size of Food Service Industry - Organization of Hotel and Restaurant Food Service - Management and Operation of Food Services

UNIT III

The Rooms Division: The Front Office Department - The Reservation Department - The Telecommunications Department - The Uniformed Service Department

UNIT IV

Functional areas: Engineering and Maintenance Division - Marketing and Sales Division - Accounting Division - Human Resources Division - Security Division

UNIT V

Hospitality Marketing: Distinctive characteristics - Seven Ps of Marketing – Segmentation., Targeting and Positioning - Future trends in Hospitality Industry: Usage of CRS in Hotel Industry, Chain of hotels- Role of Associations in hospitality management

TEXT BOOK:

1. Jhon R.Walker, Introduction to Hospitality Management, Pearson India, Edition-2, 2008.

REFERENCE BOOKS:

1. Teason.D, Principles of Management for Hospitality Industry, Routledge, Edition 2009.
2. Dr.Saurabh Dixit, Tourism & Hospitality Management, APH Publishing Corporation, Edition-2013.
3. Gajanan Shirke, Hospitality Management, Shorff Publishers, Edition-2011.
4. Aadesh Sinha, Hospitality Operation Management, Centrum Press, Edition-2012

XTRA CREDIT 27: CONSUMER BEHAVIOUR

Sub Code : 18UGCECC27

No. of Credits: 2

Objective:

On successful completion of the course the students should have understood

- Consumer motivation and perception
- Learning and attitude
- Consumer decision making

UNIT-I

Introduction - Consumer Behaviour — definition - scope of consumer behaviour — Discipline of consumer behaviour — Customer Value Satisfaction — Retention — Marketing ethics.

UNIT –II

Consumer research — Paradigms — The process of consumer research - consumer motivation — dynamics — types — measurement of motives — consumer perception

UNIT – III

Consumer Learning — Behavioural learning theories — Measures of consumer learning — Consumer attitude — formation — Strategies for attitude change

UNIT – IV

Social class Consumer Behaviour — Life style Profiles of consumer classes — Cross Cultural Customers Behaviour Strategies.

UNIT-V

Consumer Decision Making — Opinion Leadership — Dynamics — Types of consumer decision making — A Model of Consumer Decision Making

TEXT BOOK:

1. Leon G. Schiffman, Joseph Wisenblit, Consumer Behaviour, Pearson publication, 11th Edition, 2015.

REFERENCE BOOKS:

1. Sathis K Batra, Shhkazmi, Consumer Behaviour, Excel publication, 2nd Edition, 2008.
2. Suja R.Nair, Consumer Behaviour, Himalaya publication, 1st Edition, 2016.
3. Majumdar, Ramanuj, Consumer Behaviour, Prentice Hall India Learning Pvt Ltd, 7th Edition, 2009.
4. Rajneesh Krishna, Consumer Behaviour, Oxford University Press, 1st Edition, 2014.

EXTRA CREDIT COURSE 28: HUMAN RESOURCE MANAGEMENT

Subject Code : 18UGCECC28

No. of Credits: 2

Objectives:

- To understand the nature of human resources and its significance to the organization
- To familiarise students with the various techniques in HRM that contribute to the overall effectiveness of an organization.
- To bring the attention of the students on the latest trends in managing human resources in an organization.

UNIT I

Human Resource Management: Definition – Objectives – Functions - Evolution And Growth Of HRM– Qualities Of A Good HR Manager – Changing Roles of a HR Manager– Problems And Challenges of a HR Manager.

UNIT II

Planning The Human Resources : definitions Of Human Resource Planning – Objectives – Steps In Human Resources Planning – Dealing With Surplus And Deficient Man Power - Job Analysis – Job Description – Job Specification.

UNIT III

Recruitment & Selection : Recruitment And Selection – Objectives of Recruitment – sources – Internal And External Recruitment – Application Blank – Testing – Interviews.

UNIT IV

Training & Development : Training and development – Principles of Training – Assessment Of Training Needs – on the Job Training methods - off the Job Training Methods – Evaluation of Effectiveness of Training Programmes.

UNIT V

Performance Appraisal : Performance Appraisal– process – Methods of Performance Appraisal – Appraisal Counseling – Motivation process – Theories of motivation – Managing Grievances and Discipline.

Text Books:

1. Tripathi: “Personnel Management”, Sultan Chand & Sons, New Delhi, 2000.
2. L M Prasad: “Human Resource Management”, Sultan Chand & Sons, New Delhi, 2005.

References Books:

1. Aswathappa: “Human Resource Management”, Tata Mc Graw Hill Publishing Company, New Delhi, 1999.
2. Davis and Werther: “Human Resource Management”, Tata Mc Graw Hill Publishing Company, New Delhi, 2000

EXTRA CREDIT COURSE 29: PRINCIPLES AND PRACTICE OF MARKETING SERVICES

Subject Code: 18UGCECC29

No. of Credits: 2

Objectives:

- To enable the students to gain knowledge on marketing of various services.
- To enlighten the students' knowledge on marketing services.
- To make the students understand about practice of marketing services.

UNIT I

Meaning of Services Marketing – Definitions – Its importance – characteristics of services – Growth of Services Marketing – Types of services – Comparative analysis between services and products.

UNIT II

Concept of services marketing – Societal concept – Buyer behaviour concept – Factors influencing buyer behaviour – Decision making process of buyer.

UNIT III

Services Marketing Mix – Product Strategy – Product Life Cycle concept – Strategic during the P.L.C. – Product Planning Strategy – Development of new products – its simplification – Diversification and elimination.

UNIT IV

Services Marketing – I : Bank Marketing – Insurance Marketing – Transport Marketing.

UNIT V

Services Marketing – II: Tourism and Hotel Marketing - Education Marketing – Communication Services Marketing.

Reference Books:

1. S.M.Jha, : “Services Marketing”, Himalaya Publication House, Mumbai, Sixth Edition, 2003.
2. Christopher love lock: “Services Marketing”, Person Education Chennai, Sixth Edition, 2010.
3. Philip Kotler: “Marketing Management”, Person Education Chennai, Sixth Edition, 2013
4. S.Sherlekar: “Marketing Management”, Himalaya Publication House, Mumbai, Sixth Edition, 1997.

EXTRA CREDIT COURSE 30 : INVESTMENT MANAGEMENT

Subject Code: 18UGCECC30

No. of Credits: 2

Objectives:

- To provide knowledge on Investment Analysis
- To enable the students to understand the various types of fundamental techniques
- To familiarize the students with the Portfolio Analysis and Management

UNIT I

Investment Analysis: Nature – Scope - Elements of Investment Risk and Return - Objectives Investment - Investment Approaches - Investment analysis. Securities - Types - Features.

UNIT II

Investment Alternatives and Strategies: Financial investment - Non financial investment - Inbound and outbound investments – Sources of Investment Information - Valuation of fixed income securities and variable income securities (excluding Derivatives).

UNIT III

Fundamental Analysis: Economic Analysis – Industry Analysis - Company Analysis – Sources of information for analysis.

UNIT IV

Technical Analysis – Types of Charts – Dow Theory - Elliott Wave Theory - Odd-lot Theory - Breadth of Market - Relative Strength Analysis – Moving Average Analysis - Efficient Market Hypothesis.

UNIT V

Portfolio Analysis and Management: Portfolio Risk and Return – Diversification - Markowitz Model – Sharpe Model: Single Index Model – CAPM –Arbitrage Pricing Theory.

Reference Books:

1. Preeti Singh: “Investment Management”, Himalaya Publishing House, Mumbai, First Edition, 2005.
2. Bhalla and Tuteja: “Investment Management”, S.Chand and Sons Publisher, New Delhi, First Edition, 1997.
3. V.A.Avadhani: “Investment Management”, Himalaya Publishing House, Mumbai, First Edition, 1997.
4. Punithavathy Pandian: “Security Analysis and Portfolio Management”, Vikas Publishing House Pvt Ltd, New Delhi, First Edition, 1997.

EXTRA CREDIT COURSE 31: CONSUMER MARKETING

Subject code: 18UGCECC31

No. of Credits: 2

Objectives:

- To make the students to understand the concepts of consumer marketing and the motivation theories.
- To understand the customer value chain and their demography.
- To understand market segmentation and their uses.

UNIT I

Introduction- Definition of Consumer Marketing- Need and importance- Scope- Consumer Needs- Theories of Motivation and their application- Process Theories— Content theories- Personality and Self Concept- Theories of Personality – Trait Theory

UNIT II

Building Customer Value and Satisfaction- Delivering Customer Value- Value Chain – Value Delivery Network- Attracting and Retaining Customer Retention- Relationship Marketing- Customer Demand- Demography- Market Segmentation- Benefits- Criteria for Market Segmentation.

UNIT III

Learning Theories and their application- Brand Loyalty- Brand Extension- Conditioning Theories- Cognitive Learning Theory- Attitude and Attribute theory- Cognitive Dissonance- Self Concept- Development of Self- Fashion – Cosmetics- and Conspicuous Consumption

UNIT IV

Perception- Threshold of perception- Subliminal of Perception- Perception- Perceptual Process- Dynamics- Positioning Methods- and Measurement- Perceptual Mapping- Multidimensional Scaling- Consumer Imaginaries

UNIT V

Advertising- Role in Marketing Process- Legal and Ethical Process- Social Aspects- Function and Types of Advertising- Integrated Marketing Communication- Brand Management- Brand Equity- Image in Brand Equity Building- Ethics in Advertisement

Text Books:

1. Schiffman L.G and Kanuk L: “Relationship Marketing”, Tata MC Graw Hill, Twelfth Edition 2009.
2. R.S.N Pillai and Bhavathi : “Modern Marketing Principles and Practices”, S.Chand & Co., Ltd., New Delhi, Seventh Edition, 2011.
3. Paul green Berg: “Customer Relationship Management”, Tata MC Graw Hill, Seventh Edition, 2009.

Reference books:

1. Philip Kotler and Gray Armstrong: “Principles of Marketing”, Pearson Education Pvt Ltd., Seventh Edition, Reprinted 2011.
2. Dr.Rajan Nair: ”Marketing Management”, Sulthan Chand & Sons, Eleventh Edition, NewDelhi

EXTRA CREDIT COURSE 32: INTERNATIONAL MARKETING

Subject Code: 18UGCECC32

No. of Credits: 2

Objectives:

- To enable the students understand the principles and concepts in International Marketing
- To provide knowledge about marketing management in the International Perspective
- To familiarise the students with marketing strategies for the dynamic International Markets.

UNIT I

The importance and scope of marketing - Evolution of marketing: From transaction-based to relationship marketing- Marketing research and Decision support systems - Market Segmentation - Targeting and Positioning.

UNIT II

Product Mix - Product Management Decisions, Product Life Cycle strategies - New Product Development - Pricing considerations and approaches - Pricing strategies.

UNIT III

Distribution channels and physical distribution.- Marketing Communication and Promotion mix Strategies - Nature of International Marketing: Meaning - Framework for International Marketing - Barriers for International Marketing

UNIT IV

International Marketing Decisions: Product Planning - Designing Development for International Markets - Pricing Decisions: Pricing Strategies and Price setting for International Markets.

UNIT V

Distribution: Channel Management and Physical Distribution - Management in International Marketing Promotion: International Advertising Programs - Sales Management and Sales Promotion for Foreign Markets.

Text Books:

1. P. SubbaRao: "International Business", Himalaya Publication House, Second Edition 2010.
2. Saxena: "Marketing Management", Himalaya Publication, Thirteenth Edition, 2010.

Reference Books:

1. Warren J Keegan: "Global Marketing", Pearson Education, Seventh Edition, 2002.
2. Franis Cherunilan: "International trade and Export Management", Himalaya Publication House, First Edition, 2012.
3. Paras Ram: "International Business", Anupam publication, 21st Edition, 2012.

EXTRA CREDIT COURSE 33 : ENTREPRENEURIAL DEVELOPMENT

Subject code: 18UGCECC33

No. of Credits: 2

Objectives:

- To enable the students to learn the concept of entrepreneur.
- To enable the students to know the fundamentals of being a good entrepreneur
- To make the students to understand the concepts relating to incentives and subsidies.

UNIT I

Concept of Entrepreneurship: Definition, Nature and characteristics of entrepreneurship – functions and type of entrepreneurship, phases of EDP, Development of women entrepreneur & rural entrepreneur including self employment of women council scheme

UNIT II

The start up process, project identification – selection of the product – project formulation- evaluation – feasibility analysis, project report

UNIT III

Institutional service to entrepreneur – DIC, SIDO, NSIC, SISI, SSIC, SIDCO – OTCOT, IIC, KUIC and commercial bank.

UNIT IV

Institutional finance to entrepreneur – IFCI,SFC,IDBI,ICICI,TIIC,SIDCS,LIC and GIC,UTI,SIPCOT – SIDBI commercial bank venture capital

UNIT V

Incentives and subsidies – subsidized services – subsidy for market, Transport – seed capital assistance – Taxation benefits to SSI, Role of Entrepreneur in export promotion and import substitution.

Text books:

1. C.B.Gupta and N.P.Srinivasan: “Entrepreneurial Development”, Sultan Chand & Sons, Fifth Edition, 2008.
2. Renu Arora & S.KI.Sood: “Fundamentals of Entrepreneurship and Small Business”, Kalyani Publishers, First Revised, 2014 Reprint. 2014.

Reference Books:

1. S.S.Khanka, “Entrepreneurial Development”, S.Chand and Company Limited, New Delhi, Edition, 2001.
2. P.Saravanavel,”Entrepreneurial Development”, Ess Pee Kay Publishing House, Chennai Edition, 1997.

EXTRA CREDIT COURSE 34 : MANAGEMENT INFORMATION SYSTEM

Subject Code: 18UGCECC34

No. of Credits: 2

Objectives:

- To familiarise the students with Business Information through Computers.
- To enable the students aware of utilization of business information for decision making.
- To bestow knowledge about Database Management System

UNIT I

Management information system: meaning – features – requisites of effective MIS – MIS Model – components – subsystems of an MIS – role and importance – corporate planning for MIS – growth of MIS in an organization – centralization vs decentralization of MIS - Support – Limitations of MIS.

UNIT II

System concepts – elements of system – characteristics of a system – types of system – categories of information system – system development life cycle – system enhancement.

UNIT III

Information systems in business and management: Transaction processing system: Information repeating and executive information system.

UNIT IV

Database management systems – conceptual presentation – client server architectures networks.

UNIT V

Functional management information system: Financial – accounting – marketing – production – Human resource – business process outsourcing.

Text Books:

1. Gorden B.Davis and Margrethe H.Olson: “Management Information System”, Tata McGraw Hill Publication, New Delhi, 1st Edition, 2005.
2. Aman Jindal: “Management Information system”, Kalyani Publishers, New Delhi, First Edition, 2004.

Reference Books:

1. Kenneth C. Laudon: “Management Information System”, Pearson Education, New Delhi, First Edition, 2004.
2. Stephen Haag: “Management Information System”, Tata McGraw Hill Publication, New Delhi, First Edition, 2008.

EXTRA CREDIT COURSE 35: THEORY OF COMPUTATION

Sub Code: 18UGCECC35

No. of Credits: 2

Objectives:

- To learn about the basic of theory of computing
- To understand the concept of finite automata and push down automata
- To acquire knowledge in formal language
- To enhance the concept of conversion of deterministic automata to non deterministic automata.

UNIT- I

Introduction to theory of Computing – Why Study the theory of Computing- What is Computation- Set theory-Alphabets-Strings and Languages-Relations-Functions-Graphs and Trees.

UNIT -II

Finite Automata: Introduction-Finite state Machines -Deterministics Finite Automata(DFA)-Finite Automata with and without Epsilon Transitions-Language of Deterministic Finite Automata-Acceptability of a String by a Deterministic Finite Automata-Processing of Strings by Deterministic Finite Automata;Non-Deterministic Finite Automata(NFA)- Language of Non- Deterministic Finite Automata-Equivalence between DFA and NFA-Non Deterministic Automata with or without Epsilon Transitions.

UNIT -III

Formal Language: Introduction-Theory of Formal Language-Kleene and positive Closure-Defining Language-Recursive Definition of Language-Arithmetic Expression-Grammar-Classification of Grammar and Language-Language and their Relation-Operations On Language-Chomsky Hierarchy.

UNIT- IV

Regular Language: Introduction-Regular Language and Expression-Operations of Regular Expression-Identity Rules-Algebraic Laws for Regular Expression-Finite Automata and Regular Expression- Kleene's Theorem-Problems-Context Free Grammar and Context Free Language: Introduction-Derivation Tree-Parse Tree-Right Most and Left most Derivation - Ambiguity-Problems

UNIT- V

Push Down Automata: Description and Definition-Language of PDA-Graphical Notation of PDA-Acceptance by Final State and Empty Stack, From Empty Stack to Final State and Vice versa-Deterministic Pushdown Automata and Non deterministic Pushdown Automata-Language-Problems.

Text Books:

1. Theory of Computing-A Gentle Introduction, Efim Kinber, Carl Smith, published by Pearson Education.(UNIT 1)
2. Theory of Automata, Language & Computation, Rajendra Kumar, Tata McGraw Hill Education Private Limited, New Delhi. (UNIT 1to 5)

Reference Book:

1. A Textbook Automata Theory, S.F.B.Nasir, P.K.Srimani, Published by Cambridge University Press India Pvt, Ltd, New Delhi.

UNIT 1: Chapter 1: Section 1.1, 1.2 (Text Book 1)

Chapter 1: Section 1.1-1.6 (Text Book 2)

UNIT 2: Chapter 2: Section 2.1-2.11

UNIT 3: Chapter 3: Section 3.1-3.10

UNIT 4: Chapter 4: Section 4.1-4.5, 4.6, 4.6.1, 4.6.2

Chapter 6: Section 6.1-6.10

UNIT 5: Chapter 7: Section 7.1-7.10

EXTRA CREDIT COURSE 36: PRODUCTION AND OPERATIONS MANAGEMENT

Subject Code: 18UGCECC36

No. of Credits: 2

Objectives:

On successful completion of the course, the students should have understood.

- The key areas of production and layout.
- The concept of Materials management and Supply Chain Management.
- The concept of Total quality management.

UNIT I

Production Management - Functions - Scope - Plant location - Factors - Site location - Plant layout - Principles - Process - Product layout. Production planning and control - Principles - Meaning - Routing - Scheduling - Dispatching - Control.

UNIT II

Materials Handling - Importance - Principles - Criteria for selection of material handling equipments. Maintenance - Types - Breakdown - Preventive - Routine - Methods study - Time study - Motion study.

UNIT III

Organization of Materials Management - Fundamental Principles - Structure - Integrated materials management. Purchasing – procedure - principles - import substitution and import purchase procedure. Vendor rating - Vendor development.

UNIT IV

Function of Inventory - Importance - Tools - ABC, VED, FSN Analysis - EOQ - Reorder point - Safety Stock - Lead time Analysis. Store keeping - Objectives - Functions - Store keeper - Duties – Responsibilities, Location of store - Stores Ledger - Bin card.

UNIT V

Quality control - Types of Inspection - Centralised and Decentralised. TQM: Meaning - Objectives - elements – Benefits. Bench marking: Meaning - objectives – advantages. ISO: Features - Advantages - Procedure for obtaining ISO.

Text Book:

1. S.K.Sarangi: "Production and Materials Management", Asian Books Publications - Edition 2012.

Reference Books:

- 1.Sudhir Kausik: "Production and Materials Management", Anmol Publications , Edition 2014.
- 2.Stan C. Mc Donald: "Materials Management – An executive supply chain", Wilsey publishers , Edition 2009.
- 3.John W.Toomey: "Inventory Management – Principles, concepts and Techniques", Springer Publications, First Edition, 2012.
- 4.Neeti Gupta & Anuj Gupta: "Production and Materials Management", Kalyani Publishers - Edition 2015

EXTRA CREDIT COURSE 37: BASIC BUSINESS LAW

Subject code : 18UGCECC37

No. of credits: 2

Objective:

- To enable the students to acquire knowledge on legal aspects of business.
- To enable the students to understand the law of Contract.
- To know the basic concepts of contracts such as Offer, Acceptance and Valid Agreement, etc.,

UNIT – I

Law – Meaning and object – mercantile law meaning – sources of law —classification of contracts – Offer acceptance – Legality of object.

UNIT – II

Consideration – Valid Contract-Void agreement.

UNIT – III

Essentials elements of valid contract.

UNIT – IV

Classification of Contract.

UNIT – V

Modes of discharge of Contract, Breach of of Contract

Text Books:

1. M.C.Kuchhal and Vivek Kuchhal- Mercantile Law-Eighth edition 2013-Vikas publishing house pvt ltd.
2. N.D. Kapoor - Elements of Mercantile Law-Revised edition 2000.

Reference Books:

1. N.D.Kapoor -Business law-Revised edition 2009-Sultan Chand publications.
2. B.S Raman- Business law-United publishers-Revised edition 2011.
3. ICSI Material-Revised copy

EXTRA CREDIT COURSE 38: OOPS WITH JAVA PROGRAMMING

Subject Code: 18UGCECC38

No. of Credits: 2

Objectives :

- To Understand fundamentals of object – oriented programming in Java, including defining classes,invoking methods,using class libraries,etc.
- To be able to use the Java SDK enviroment to create, debug and run simple Java programs.
- To understand the Java Programming concepts so as to enable the students of Applications and Applets using Java

UNIT I

Introduction to Object-Oriented Programming : Fundamentals – Object oriented Paradigm –Elements of the OOP – Abstraction – Encapsulation – Modularity – Hierarchy – Concurrency

Persistence – Inheritance – Polymorphism – Benefits of OOP – Applications of OOP.

UNIT II

Java Evolution : History – Features – Difference between Java,C,C++ - Java and Internet – Java and WWW – Web Browsers . Overview : Simple Java Program - Structure – Java Tokens- Statements -JVM - Constants – Variables – Data types – Operators and Expressions.

UNIT III

Decision Making and Branching :if,if...else, nested if, switch – Decesion making and looping : while,do,for – Jumps in Loops – Labeled loops – Classes, Objects and Methods.

Arrays, Strings and vectors - Interfaces :Multiple Inheritance – Packages : Putting classes together – Multithreaded programming – Thread exceptions – Life cycle of Thread - Thread priority – Synchronization.

UNIT IV

Managing Errors and Exceptions – Types of Errors – Exceptions – Applet Programming – Applet life cycle – Graphics Programming.

UNIT V

Managing Input / Output Files in Java: Concepts of Streams – Stream classes – Byte stream classes – Character stream classes - Using streams – I/O classes – File classes - I/O Exceptions – Creation of files – Reading / Writing characters, Byte - Handling Primitive data types – Random Access Files

Text Books:

1. Grady Booch: “Object Oriented Analysis & Design with Applications”, Second Edition, Pearson Education.
2. E.BalaGurusamy: “Programming with Java”, Third edition, Tata McGraw Hill Pvt Ltd.

Reference Books:

1. Patrick Naughton & Hebert Schildt: “The Complete Reference Java 2”, Third edition, Tata McGraw Hill Pvt Ltd.
2. Programming with Java – John R.Hubbard, Second Edition, Tata McGraw

EXTRA CREDIT COURSE 39: MARKETING OF HEALTH SERVICES

Subject Code: 18UGCECC39

No. of Credits: 2

Objectives:

- To enable the students understand about health services.
- To make the students aware of different marketing mix in health industry.
- To confer knowledge about online health services .

UNIT – I

Marketing plans for services: process, strategy formulation, resource allocation and monitoring services communications- customer focused services- service quality- SERV QUAL model

UNIT – II

Hospital services- Selecting Health Care Professionals- Emerging trends in Medicare- Marketing Medicare – Thrust areas for Medicare services.

UNIT – III

Marketing Mix for Hospitals- Product Mix- Promotion Mix- Price Mix- Place Mix- Strategic Marketing for Hospitals.

UNIT – IV

Online Health Services- Organization of Online Health Care Business- On-line Marketing and On-line financial & clinical transaction.

UNIT – V

Legal system: Consumer Rights & Protection, medicine safety rules- Food & Nutrition Security in India - Health Promotion Agencies

Note: Question paper shall cover 100% Theory

REFERENCE BOOKS:

1. Richard K. Thomas, Health Services Marketing, A Practitioner's Guide, Edition-2, 2008.
2. Zeithaml, Services Marketing, Mcgraw Hill Education, Edition-6, 2013.
3. Lovelock, Services Marketing, Pearson India, Edition-7, 2011.
4. Er.I.C. N.Berkowitz, Essentials of Health care Marketing , Jones & Bartlett Learning, Edition-3, 2010.

EXTRA CREDIT COURSE 40: Programming in C

Subject Code: 18UGCECC40

No. of Credits: 2

Objectives:

To enable the students

- To know about problem solving techniques and algorithm fundamentals.
- To know about the basics of C Programming and its various computation logics.

UNIT I

Overview of C - Introduction – Structure of C - Character set - C tokens - Keyword & Identifiers - Constants - Variables - Data types - Declaration of variables - Assigning values to variables - Defining Symbolic Constants - Operators – Arithmetic Expressions: - Evaluation of expression - Type conversion in expression - operator precedence .

UNIT II

Decision Making and Branching - Decision making with IF statement - simple IF statement - The IF ELSE Statement - Nesting of IF ...ELSE statements - The ELSE IF ladder - The switch statement – The GOTO statement -- Decision Making and Looping - The WHILE statement - The DO statement - The FOR statement – Jumps in Loop.

UNIT III

Arrays - One Dimensional - Two Dimensional - Multidimensional arrays - Character string Handling - Declaring and initializing string variables - String:Introduction- Standard Functions. Functions: User - defined Functions - Need for user Defined functions - Types of Functions :No Arguments and no return values - Arguments with return values - Recursion.

UNIT IV

Structure : Structure definition - Giving values to members – Structure initialization - comparison of structure variables - Structures within structures- size of structures.

UNIT V

Pointers to structures. Pointers – Introduction-Features of Pointers - Declaring and initializing pointers - Accessing a variable through its pointers - pointers and arrays - pointers and character strings

Text Books:

1. E. Balagurusamy: “Programming in ANSI C” , Tata Mc. Graw Hill, 5thEdition (reprint), 2011. (Unit II, Unit III, Unit IV, Unit V)
2. R.G.Dromey: ”How to Solve it by Computer”, Prentice Hall of India, Delhi,2000 (Unit-I)

Reference Books:

1. Byron Gottfried: “Programming with C”(Schaum's Outline Series), Tata Mc.Graw Hill,2nd Edition,1998.
2. Ashok. N. Kamathane: “Programming with ANSI and Turbo C”, Pearson Education Asia,4th Edition,2002 .
3. Yeswanth Kanethkar: “Let us C” Tata Mc. Graw Hill, 3rd Edition,1992.