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 centre 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 confidences 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 posses

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 inteligence

10.Entrepreneurship qualitities

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 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 qualitities	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 make them life long learners.
12.	Thirst for knowledge through life long learning	

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 2019 – 2020)

1. REGULATIONS

This regulation is effective from the academic year 2019 -2020.

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%.

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
Continuous 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
Continuous Internal Assessment Test I	25*
Continuous Internal Assessment Test II	
Continuous 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
Continuous 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)

a) Semester examination will be conducted at the end of each semester after completing a minimum of 90 working days.

b) End Assessment Examination for the odd semester will generally be held during November and even semester during April.

c) The question papers for all the courses will be set by the external examiners.

d) The exams for Languages, 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 Marks each – Descriptive type.
Part B	25 Marks	5 Questions- 5 Marks each – either or type.
Part C	30 Marks	3 Questions-Out of five questions-- 10 Marks each.
Total	**75 Marks**	

f) 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	5 Questions - either or type of question - 10 Marks each

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) Job oriented Courses : Every student should complete one job oriented course of minimum 20hrs duration .The student may register either in PMKVY (supported by the central government) or other external agency. They should submit a certificate for the successful completion of the training programme from the agency concerned at the end of the third semester.

l) Online Course : Students have to register online courses in NPTEL /SWAYAM /MOOC / COURSERA /EDX etc and can appear for the exam in same web portal or through End Assessment Examinations in our College.

m) Question paper pattern: (Self Study- Manitha vazhakkaium gandhiyadigalum and Women Rights)

Part A	50 Marks	5 Questions -10 Marks each – either or type.

n) Question paper pattern : (General Awareness)

Part A	100 Marks	100 Questions -1 Marks each – objective type

o) **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**

p) **Extra-Curricular Activities**

The first year students can enroll themselves for NSS / RRC /YRC / Sports & Games / Clubs and earn the credit allotted. Participation in any one of these activities during the first four semesters is mandatory. A report regarding satisfactory participation in the activity issued by the faculty in-charge of the activity and approved by the Head of the Department has to be submitted to the CoE at the end of the fifth semester.

q) **Co-curricular Activities**

Participation of the students in any one of the activities conducted by other colleges during their courses of study is compulsory for the award of degree and it should be duly certified by the Head of the Department and submitted to the Controller of Examinations with a copy of the certificate of participation.

r) **Internship**

The students have the option to select any organisation – Government / Private like industry, bank, Research & Development organisations, Scientific Companies, IT related service providers etc. in consultation with the staff Co-ordinator & Head of the Department. The students are to undergo training for a period of two weeks. The students must maintain a work diary and prepare a report of the training undergone and submit the same to the HoD on a stipulated date, there will be a viva voce with internal examiners at the end of the semester V.

s) **Evaluation:**

Content	Marks Awarded
Attendance	10
Work diary	15
Report	50
Viva Voce	25
TOTAL	**100**

This course carries 3 credits.

t) **Project:**

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

Content	Marks Awarded
Project Report	15
Power Point Presentation	20
Viva Voce	40
Total	**75**

u) 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 .

v) 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.

w) There will be one independent valuation for all theory papers of UG courses by external examiner. Except for self study subjects, value based subjects and Non-major Electives.

x) 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.

y) 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.

z) 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:

GRADE POINT AVERAGE [GPA] = $\sum_i C_i G_i / \sum_i C_i$

$$GPA = \frac{\text{Sum of the multiplication of grade points by the credits of the courses}}{\text{Sum of the credits of the courses in a semester}}$$

For the Entire Programme:

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

$$CGPA = \frac{\text{Sum of the multiplication of grade points by the credits of the entire programme}}{\text{Sum of the credits of the courses of the entire programme}}$$

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 (2019 – 2022)

Part	Course Code	Study Components	Hrs / Week	CIA	Ext	Total	Credits
		Semester – I					
I	19U1TALT01	**Language 1 : Paper I** Tamil I/Hindi I/French I/Malayalam I	5	25	75	100	3
II	19U1ENLT01	**Language 2** : Functional English I	5	25	75	100	3
III	19U1CACT01	**Core 1:** C Programming	4	25	75	100	4
	19U1CACT02	**Core 2:** Digital Fundamentals and Computer Architecture	4	25	75	100	4
	19U1CACP03	**Core 3**: C Programming - Practical	3	40	60	100	3
	19U1CAAT01	**Allied 1 :** Numerical Methods and Statistics	5	25	75	100	4
IV	19U1VBET01	**Value Based Education 1 :** Environmental Studies **	2	-	50	50	1
	19U1VBET02	**Value Based Education 2 :** Yoga for Youth Empowerment **	2	-	-	-	-
	19U1SBST01	**Skill Based Subject 1 :** Mathematics for Competitive Examinations - I	2	50	-	50	1
	19U1SBST02	**Skill Based Subject 2 :**Communication Skills -I	2	50	-	50	1
	-	Sports	2	-	-	-	-
	TOTAL					**750**	**24**
		Semester – II					
I	19U2TALT02	**Language 1 :** Paper II Tamil II/Hindi II/French/Malayalam II	5	25	75	100	3
II	19U2ENLT02	**Language 2 :** Functional English II	5	25	75	100	3
III	19U2CACT04	**Core 4:** C++ Programming	4	25	75	100	3
	19U2CACT05	**Core 5:** Data Structures	4	25	75	100	3
	19U2CACP06	**Core 6:** Data Structures using C++ Programming - Practical	3	40	60	100	3
	19U2CAAT02	**Allied 2 :**Discrete Mathematics	5	25	75	100	4
IV	19U2VBET02	**Value Based Education 2 :** Yoga for Youth Empowerment **	2	-	50	50	4
	19U2VBET03	**Value Based Education 3 :** Ethics & Culture **	2	-	50	50	1
	19U2SBST03	**Skill Based Subject 3 :** Mathematics for Competitive Examinations - II	2	50	-	50	1
	19U2SBST04	**Skill Based Subject 4 :** Communication Skills II	2	50	-	50	1
	-	Sports	2	-	-	-	-
					TOTAL	**800**	**26**

Part	Course Code	Study Components	Hrs / Week	CIA	Ext	Total	Credits
		Semester – III					
III	19U3CACT07	**Core 7:** Operating Systems	5	25	75	100	4
	19U3CACT08	**Core 8:** Java Programming	6	25	75	100	4
	19U3CACT09	**Core 9:** Data Communications and Networks	5	25	75	100	3
	19U3CACP10	**Core 10:** Java Programming -Practical	6	40	60	100	3
	19U3CAAT03	**Allied 3 :** Operations Research	5	25	75	100	4
IV	19U3SBST05	**Skill Based Subject 5 :** Mathematics for Competitive Examinations - III	2	50	-	50	1
	19U3SBST06	**Skill Based Subject 6 :** Communication Skills - III	2	50	-	50	1
	19U3NMET01	**Non Major Elective 1:**Food Science and Nutrition	2	-	50	50	2
	19U3BTLT01/ 19U3ATLT01	**Non Credit Course 1:** Basic Tamil I /Advanced Tamil I #	-	-	-	-	-
	19U3JOCT01	Job Oriented Courses *	-	-	-	-	1
	19U3SSCT01	**Self Study Course 1 :** Manitha vazhakkaium gandhiyadigalum **	-	-	50	50	1
	-	Sports	2	-	-	-	-
	-	Library	1	-	-	-	-
		TOTAL				**700**	**24**
		Semester – IV					
III	19U4CACT11	**Core 11:** Web Designing	5	25	75	100	3
	19U4CACT12	**Core 12:** System Analysis and Design	6	25	75	100	4
	19U4CACT13	**Core 13:** E-Commerce	5	25	75	100	3
	19U4CACP14	**Core 14:** Web Designing - Practical	6	40	60	100	3
	19U4CAAT04	**Allied 4:** Business Accounting	5	25	75	100	4
IV	19U4SBST07	**Skill Based Subject 7 :** Mathematics for Competitive Examinations - IV	2	50	-	50	1
	19U4SBST08	**Skill Based Subject 8 :** Communication Skills - IV	2	50	-	50	1
	19U4NMET02	**Non Major Elective 2:** Floriculture	2	-	50	50	2
	19U4BTLT02/ 19U4ATLT02	**Non Credit Course 2:** Basic Tamil II / Advanced Tamil II #	-	-	-	-	-
	19U4SWCT01	Online Courses (SWAYAM/NPTEL)*	-	-	-	-	1
	19U4SSCT02	**Self Study Course 2:** Women Rights**	-	-	50	50	1
	-	Sports	2	-	-	-	-
	-	Library	1	-	-	-	-
		TOTAL				**700**	**23**

Part	Course Code	Study Components	Hrs / Week	CIA	Ext	Total	Credits
		Semester – V					
III	19U5CACT15	**Core 15:** ASP.Net & C #	5	25	75	100	3
	19U5CACT16	**Core 16:** Relational Database Management Systems	5	25	75	100	3
	19U5CACP17	**Core 17:** ASP. Net & C# Practical	6	40	60	100	3
	19U5CACP18	**Core 18:** Web Technology Practical	6	20	30	50	3
	19U5CAET1A 19U5CA ET1B 19U5CA ET1C	**Elective 1 :** Software Engineering Data Mining and Ware Housing Computer Graphics	4	25	75	100	3
	19U5CAET2A 19U5CA ET2B 19U5CA ET2C	**Elective 2:** Embedded Systems Client Server Technology Web Technology and its Applications	4	25	75	100	3
IV	19U5NCCT01	**Non Credit Course 1 :** Aptitude and Soft Skills- I	3	-	-	-	-
	19U5SSCT03	**Self Study Course 3:** General Awareness	-	-	100	100	1
	19U5INTR01	**Internship :** (15 days)	-	-	-	-	3
	19U5CCAY01	**Co-curricular activities :**Participation in Seminars / Conferences / Workshops / Symposia	-	-	-	-	1
	-	Sports	2	-	-	-	-
	-	Library	1	-	-	-	-
	TOTAL					**650**	**23**
		Semester – VI					
III	19U6CACT19	**Core 19:** Software Testing	5	25	75	100	3
	19U6CACP20	**Core 20:** Software Testing - Practical	5	40	60	100	3
	19U6CACP21	**Core 21:** PHP & MySQL -Practical	6	20	30	50	3
	19U6CACV22	**Core 22:** Project and Viva Voce	6	20	80	100	4
	19U6CA ET3A 19U6CA ET3B 19U6CA ET3C	**Elective 3:** Artificial Intelligence and Expert Systems Mobile Computing Cloud Computing	4	25	75	100	3
	19U6CA ET4A 19U6CA ET4B 19U6CA ET4C	**Elective 4:** Compiler Design Mobile Operating System PHP & MySQL	4	25	75	100	3
IV	19U6NCCT02	**Non Credit Course 2 :** Aptitude and Soft Skills II	3	-	-	-	-
V	19U6EXAY01	**Extra Curricular Activities** NSS / RRC / YRC / Sports & Games Club	-	-	-	-	1
	-	Sports	2	-	-	-	-
	-	Library	1	-	-	-	-
	TOTAL					**550**	**20**
Total Marks						**3800**	**140**

* It will not be considered for calculation of CGPA.
** 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).

EXTRA CREDIT COURSES		
Course Code	**Subjects**	**Credits**
2019ECC001	சுற்றுலா வளர்ச்சி	2
2019ECC002	இதழியல் கலை	2
2019ECC003	நாட்டுப்புறவியல்	2
2019ECC004	கணிப்பொறியில் தமிழ்	2
2019ECC005	தமிழக வரலாறும் மக்கள் பண்பாடும்	2
2019ECC006	தமிழ் இலக்கிய வரலாறு	2
2019ECC007	New Media	2
2019ECC008	Proofreading And Copyediting	2
2019ECC009	Personality Development	2
2019ECC010	Technical Writing	2
2019ECC011	An Introduction To Psychology	2
2019ECC012	Astronomy	2
2019ECC013	Fuzzy Mathematics	2
2019ECC014	Operation Research	2
2019ECC015	Mathematics For Professional Courses	2
2019ECC016	Multimedia And Its Applications	2
2019ECC017	Management Information System	2
2019ECC018	Theory Of Computation	2
2019ECC019	Oops With Java Programming	2
2019ECC020	Programming In C	2
2019ECC021	Internet Of Things	2
2019ECC022	Web Technology And Its Applications	2
2019ECC023	Network Security	2
2019ECC024	Mobile And Wireless Technology	2
2019ECC025	Cloud Computing	2
2019ECC026	Cross Culture Management	2

2019ECC027	Indian Economy And Trade Dependencies	2
2019ECC028	Export Marketing	2
2019ECC029	International Trade & Forex	2
2019ECC030	Brand Management	2
2019ECC031	Stress Management	2
2019ECC032	Risk And Insurance In International Trade	2
2019ECC033	Retail Marketing	2
2019ECC034	Export And Import Procedures	2
2019ECC035	Logistics And Supplychain Management	2
2019ECC036	Quality Management	2
2019ECC037	Management Of Small And New Enterprises	2
2019ECC038	Tourism Management	2
2019ECC039	Event Management	2
2019ECC040	Hospitality Management	2
2019ECC041	Consumer Behaviour	2
2019ECC042	Human Resource Management	2
2019ECC043	Principles And Practice Of Marketing Services	2
2019ECC044	Consumer Marketing	2
2019ECC045	Marketing Of Health Services	2
2019ECC046	International Banking	2
2019ECC047	E-Commerce	2
2019ECC048	International Accounting	2
2019ECC049	Corporate Social Responsibility And Governance	2
2019ECC050	Enterprise Resource Planning	2

CURRICULUM STRUCTURE

S.No.	Courses	No.of.Papers	Credits
1	Language 1:Tamil/Hindi/Malayalam/French	02	06
2	Language 2: English	02	06
3	Core Courses	22	72
4	Allied Courses	04	16
5	Elective Courses	04	12
6	Value Based Education	03	06
7	Skill Based Subject	08	08
8	Non Major Elective	02	04
9	Non Credit Courses	04	-
10	Job Oriented Courses	01	01
11	Online Course	01	01
12	Self Study Courses	03	03
13	Internship (15 days)	01	03
14	Co-Curricular Activities	01	01
15	Extra Curricular Activities	01	01
16	Basic Tamil/ Advanced Tamil	02	-
Total Credits			**140**

SEMESTER I

Programme Code :	ALL UG	**Programme Title**		
Course Code :	**19U1TAL01**	Title : Tamil - I	**Batch**	2019-2022
			Semester	1
Hrs/week	5		**Credits**	3

நோக்கம்

- சமூகம் பற்றிய சிந்தனைகளைத் தமிழ்ப் படைப்பிலக்கியங்கள் மூலம் ஏற்படுத்துதல்
- புதுக்கவிதைகள், சிறுகதைகள் ஆகியவற்றைப் வாசிக்க வைத்தல், எழுத வைத்தல்
- தமிழ்நாடு அரசுப்பணியாளர் போட்டித்தேர்வு மையம் நடத்தும் போட்டித் தேர்வுகளுக்கு மாணவர்களைத் தயார் செய்தல்.
- மாணவர்களின் வாசிக்கும் ஆற்றலை ஊக்குவிக்கவும், தமிழ் இலக்கியத்தோடு தொடர்புடைய பிற நூல்களையும் மாணவர்கள் சுயமாக கற்று உணரச்செய்தல்
- மாணவர்கள் பிழையில்லாமல் எழுதுவதற்கும், பேசுவதற்கும், கருத்துப்பரிமாற்றத்திற்கும் இலக்கணம் உதவுகின்றன என்பதை அறிந்துகொள்ளல்.

பாடப்பகுதி கற்றலின் வெளிப்பாடு - ஊழரசளந ழுரவஉழஅந (ஊழு)

CO Number	CO Statement
CO1	தமிழ் மொழியின் வாயிலாக பண்பாடு, கலைகள் மற்றும் மரபுகள் முதலியவற்றை அறிதல்.
CO2	வாழ்வியல் நெறிகளை உணர்ந்து மனிதநேயத்துடனும் உயர்ந்த குறிக்கோளுடனும் சமுதாயத்தை நேசிக்கத் தகுந்தவர்களாக இருத்தல்.
CO3	இலக்கியங்களின் வாயிலாக பல்வேறு வகையான வாழ்க்கைத்தரம் மற்றும் மக்களின் வாழ்க்கை முறைகளைத் தெரிந்து கொள்ளுதல்.
CO4	அறத்தின் வழிநின்று பொருளீட்டி இன்பம் துய்ப்பது உன்னத வாழ்வின் அடிப்படை என்பதை இலக்கியங்கள் வாயிலாக மாணவர்கள் உணர்தல்.
CO5	சமூகம் மற்றும் பெண்ணியம் சார்ந்த கவிதைகளும், கருத்து பரிமாற்றத்திறனுக்கு அடிப்படையாக உள்ள இலக்கணமும், இன்றைய சமுதாய நிகழ்வுகளைப் பிரதிபலிக்கும் சிறுகதையும், தன்முயற்சிப்படிப்பின் வாயிலாக, நமது ஊரின் சிறப்புகளையும் மற்றும் வரலாற்றுச் செய்திகளையும் மாணவர்கள் அறிந்து கொள்ள செய்தல்.

பாடத்திட்டம்

அலகு – 1 செய்யுள் திரட்டு : மரபுக் கவிதைகள் (10 மணிநேரம்)

1. பாரதியார் - புதுமைப்பெண் (பாரதியார் கவிதைகள்)
2. பாரதிதாசன் - புத்தகச் சாலை (பாரதிதாசன் கவிதைகள்)
3. கவிமணி - புத்தரும் ஏழைச் சிறுவனும் (மலரும் மாலையும்)
4. கண்ணதாசன் - பிறப்பில் வருவது (கண்ணதாசன் கவிதைகள்)

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

1. புவியரசு – ரகசியம் (ஒரு முக்கிய அறிவிப்பு)
2. சிற்பி – தெற்கு வளைவு பாட்டையா (ஒரு கிராமத்து நதி)
3. அப்துல் ரகுமான் - மாதிரி (ஆலாபனை)
4. வைரமுத்து – மரங்களைப் பாடுவேன் (வைரமுத்து கவிதைகள்)
5. கனிமொழி – என் வீடு (கருவறை வாசனை)
6. முத்துக்குமார் - தூர் (பட்டாம்பூச்சி விற்பவன்)
7. திலிப் குமார் - எனது மௌனங்கள் (ஒத்திகை)
8. சுடலைமணி – பிறந்தநாள் பூங்கா (நட்சத்திரக்கிழவி)

அலகு – 3 சிறுகதைத் தொகுப்பு (13 மணிநேரம்)

1. புதுமைப்பித்தன் - காஞ்சனை.
2. ராஜம்கிருஷ்ணன் - சூரியக்கதிர்கள். (பெண்மையச் சிறுகதைகள்)
3. தி.ஜானகிராமன் - சிலிர்ப்பு. (கொட்டுமேளம்)
4. பிரபஞ்சன் - எனக்கும் தெரியும் (நேற்று மனிதர்கள்).
5. முத்துலிங்கம் - தாத்தா விட்டுப்போன தட்டச்சு மிசின் (கொழுத்தாடு பிடிப்பேன்)
6. வேணுகோபால் - தீரா துயரம், (ஒரு துளி துயரம்)
7. வெ. சுப்ரமணியபாரதி – மயங்கும் மனங்கள் (மரணித்த கணவனின் டைரி)
8. தாமரை – பசுத்தோல் (சந்திரக் கதிர்கள்)

அலகு 4 இலக்கணம், பயன்பாட்டுத்தமிழ் 12 மணி நேரம்

நிறுத்தற் குறிகள் இடும் இடங்கள் - காற்புள்ளி, அரைப்புள்ளி, முக்காற்புள்ளி, முற்றுப்புள்ளி, புள்ளி, உணர்ச்சிக்குறி, கேள்விக்குறி, இரட்டை மேற்கோள்குறி, ஒற்றைமேற்கோள் குறி.

ஒருமை, பன்மை பிழைகளை நீக்குதல், மரபு பிழைகள், வழுஉச்சொற்களை நீக்குதல், பிறமொழிச் சொற்களை நீக்குதல்.

3. சொற்களை சேர்த்தும் இடம் விட்டும் எழுதுதல் - 1. பெயர் ₂ பெயர், 2. பெயர் ₂ வினை, 3. வினை ₂ வினை, 4. இரட்டைச் சொற்கள், 5. இடைச்சொற்கள்

அலகு 5 இலக்கிய வரலாறு 12 மணி நேரம்

- 1. சிறுகதையின் தோற்றமும் வளர்ச்சியும்.
- 2. புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும்.
- 3. இலக்கணம் தோற்றமும் வளர்ச்சியும்.
- 4. தன்முயற்சி படிப்பு : தெரிந்த கோவை தெரியாத கதை

ஆசிரியர் : கவியன்பன். கே.ஆர் பாபு
வெளியீடு : விஜயா பதிப்பகம்
கோயம்புத்தூர்.

பாடநூல் - செய்யுள் திரட்டு (தொகுப்பு) தமிழ்த்துறை வெளியீடு 2019

பார்வை நூல்கள்

வ.எண்	ஆசிரியர் பெயர்	நூலின் பெயர்	வெளியீடு
1	புலவர் வெற்றியழகன்(தொ.ஆ),	பாரதியார் கவிதைகள்	ராமையா பதிப்பகம், சென்னை.
2	தொ.பரமசிவன் (ப.ஆ)	பாரதிதாசன் கவிதைகள்	நியூ செஞ்சுரி புக் ஹவுஸ், சென்னை.
3	வித்துவான் சிவ கன்னியப்பன்	மலரும் மாலையும்	பூம்புகார் பதிப்பகம், சென்னை.
4	கவியரசு கண்ணதாசன்	கண்ணதாசன் கவிதைகள்	கலைக்காவிரி பதிப்பகம், திருச்சி.
5	புவியரசு	ஒரு முக்கிய அறிவிப்பு	விஜயா பதிப்பகம், கோவை.
6	சிற்பி	ஒரு கிராமத்து நதி	கவிதா பதிப்பகம் சென்னை.
7	அப்துல் ரகுமான்	ஆலாபனை	நேசனல் பப்ளிஷர்ஸ், சென்னை.
8	வைரமுத்து	வைரமுத்து கவிதைகள்	சூர்யா வெளியீடு, சென்னை.
9	கனிமொழி	கருவறை வாசனை	திருமகள் நிலையம் சென்னை.
10	முத்துக்குமார்	பட்டாம்பூச்சி விற்பவன்	வம்சி கிராபிக்ஸ் சென்னை.
11	திலிப் குமார்	ஒத்திகை	நியூ சென்சுரி புக் ஹௌஸ், சென்னை
12	ப.சுடலைமணி	நட்சத்திரக்கிழவி (கவிதைத் தொகுப்பு)	--
13	புதுமைப்பித்தன்	புதுமைப்பித்தன் கதைகள்	பூம்புகார் பதிப்பகம், சென்னை.
14	தி. ஜானகிராமன்	கொட்டுமேளம்	ஐந்திணைப் பதிப்பகம்
15	பிரபஞ்சன்	நேற்று மனிதர்கள்	கவிதா பப்ளிகேசன்
16	முத்துலிங்கம்.அ	கொழுத்தாடு பிடிப்பேன்	காலச்சுவடு பதிப்பகம்
17	வேணுகோபால்.சு	ஒரு துளி துயரம்	விஜயா பதிப்பகம், கோவை.
18	வெ. சுப்ரமணியபாரதி	மரணித்த கணவனின் டைரி	டிஸ்கவரி புக் பேலஸ்
19	தாமரை	சந்திரக் கற்கள்	குமரன் பதிப்பகம்
20	வல்லிக்கண்ணன்	புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும்	அகரம் பதிப்பகம்,, கும்பகோணம்.
21	கா.கோ.வெங்கட்ராமன்	தமிழ் இலக்கிய வரலாறு	கலையக வெளியீடு, திண்டுக்கல்.
22	மது.ச.விமலானந்தம்	தமிழ் இலக்கிய வரலாறு	முல்லை நிலையம், சென்னை.
23	மு.பரமசிவம்	நற்றமிழ் இலக்கணம்	சைவசித்தாந்த பதிப்பகம், திருநெல்வேலி.
24	கவியன்பன். கே.ஆர் பாபு	தெரிந்த கோவை தெரியாத கதை	விஜயா பதிப்பகம் கோயம்புத்தூர்.

SEMESTER I

Programme Code :	BCA	**Programme Title**		
Course Code :	**19U2FRLT01**	Title : French I	**Batch**	2019-2022
			Semester	1
Hrs/week	5		**Credits**	3

SYLLABUS

Prescribed text : **LATITUDES I**

Units : 1 – 4

Authors : Régine Mérieux

Yves Loiseau

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

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

(All questions to be set only from the prescribed text)

Section A (10)

1. Choisissez la meilleure réponse: (10X1=10)

Section B (25)

2. Dites vrai ou faux (5X1=5)

3. Traduisez les textes suivants en anglais:(4/5) (4X5=20)

Section C (40)

4. Compréhension (5x1=5)

5. Exercices de grammaire:(5X5=25) **(either/or)**

6. Remplissez le dialogue:(5X1=5)

7. Associez :(5X1=5)

SEMESTER I

Programme Code :	ALL UG	**Programme Title**		
Course Code :	**19U2HILT01**	Title : Hindi I	**Batch**	2019-2022
			Semester	1
Hrs/week	5		**Credits**	3

SYLLABUS

1. PROSE : NUTHAN GADYA SANGRAH

Editor : Jayaprakash

(Prescribed Lessons – only 6)

Lesson 1 – Bharathiya Sanskurthi

Lesson 3 – Razia

Lesson 4 – Makreal

Lesson 5 – Bahtha Pani Nirmala.

Lesson 6 – Rashtrapitha Mahathma Gandhi

Lesson 9 – Ninda Ras.

Publisher : Sumitra Prakashan

Sumitravas, 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 BHARAT 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 :	ALL UG	**Programme Title**		
Course Code :	**19U2MLLT01**	Title : Malayalam I	**Batch**	2019-2022
			Semester	1
Hrs/week	5		**Credits**	3

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
Pathummayude Aadu - Vaikam Muhammed Basheerr
(D.C.Books, Kottayam, Kerala)
Unit III & IV
Ente Priyappeta Kadhakal – Akbar Kakkattil)
(D.C. Books, Kottayam, Kerala)
Unit V
Expansion of ideas, General Eassay and Translation. (A simple passage from English about 100 works to Malayalam)

Reference Books:

1.Malayala Novel Sahithya Charitram-K.M.Tharakan (N.B.S.Kottayam)
2.Cherukatha Innale Innu-M.Achuyuthan (D.C Books, Kottayam)
3.Sahithya Charitram Prasthanangalilude- Dr.K.M George,
(D.C.Books Kottayam)
4. Malayala Sahithya vimarsam-Sukumar Azhee kode (D.C.books)

SEMESTER-I

Programme Code	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	19U1ENLT01	Language II-Functional English – I	Batch	2019-2022
			Semester	I
Hrs/ Week	5 Hrs		Credits	3

COURSE OBJECTIVES:

1.To enable the students to understand the basic grammar in English.

2.To acquaint students with the structure and strategies of conversation

3.To make the students appreciate the significant works and style of prose

4. To develop the skills of speaking and writing without flaws.

5.To develop an interest in the minds of the students to enjoy and appreciate the literary works in English.

COURSE OUTCOMES (CO):

On Successful Completion of the course the students should be able to

CO Number	CO Statement
CO1	Speak and Write without commiting grammatical errors.
CO2	Read and appreciate simple literary works.
CO3	Deal with various conversational situations with confidence.

MAPPING WITH PROGRAMME OUTCOMES

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

SYLLABUS

UNIT –I-POETRY **(Hours-12)**

1. The Lotus Eaters - Alfred Lord Tennyson
2. Menelaus and Helen - Rupert Brooke
3. Night of the Scorpion - Nizzim Ezekiel

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

1. My Vision for India - Abdul Kalam
2. **A Speech by N. R. Narayana Murthy - N. R. Narayana Murthy**
3. A Little Bit of what You Fancy - Desmond Morris

UNIT- III- Short Story **(Hours-12)**

1. The Happy Prince - Oscar Wilde
2. An astrologer's day - R. K. Narayan
3. The Blue Bouquet - Octavio Paz

UNIT-IV-Grammar and Composition **(Hours-12)**

1. Modals
2. Verbs
3. Pronoun
4. Letter Writing
5. Reading Comprehension

UNIT- V- Dialogue Writing (CONVERSATION EXERCISES) **(Hours-12)**

Greeting , Introducing , Requesting, Inviting & Congratulating

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
3.	Adibah Amin, Rosemary Eravelly, Farida J Ibrahim	Grammar Builder Level Volume 1	Cambridge University Press

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

SEMESTER I

Programme Code :	BCA	**Programme Title**	Bachelor of Computer Applications	
Course Code :	19U1CACT01	Core1: C Programming	**Batch**	2019-2022
			Semester	1
Hrs/week	4 Hrs		**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
- To acquire the the knowledge of 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/0 operations - Random access to files - Command line arguments - The Pre-processor.

Text Books

Recent editions of the following books only are recommended

S. No.	Author Name	Title of the Book	Publisher
1	E. Balagurusamy	Programming in ANSI C	Tata McGraw Hill, Fifth Edition
2	Yeswanth Kanethkar	Let us C	Tata McGraw Hill

Reference Books

S. No.	Author Name	Title of the Book	Publisher
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**		Bachelor of Computer Applications	
Course Code :	19U1CACT02	Title: Core 2: Digital Fundamentals And Computer Architecture		**Batch**	2019-2022
				Semester	1
Hrs/week	4 Hrs			**Credits**	4

COURSE OBJECTIVE

On Completion Of This Course,

- ✓ To Understand the various numbering System & Convertion problems
- ✓ To enhance the Knowledge of basic Logic circuits.
- ✓ To Learn about sequential circuit
- ✓ To Understand various data transfer techniques in digital computer**.**
- ✓ To gain the concepts of memory organization

COURSE OUTCOMES (CO)

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

CO Number	CO Statement
CO1	Review various Numbering System & Convertion problems
CO2	Design basic circuit for Gates
CO3	Understand the concepts of sequential circuit.
CO4	Illustrate the basic input-output organization of computer,Asynchronous data transfer
CO5	Illustrate the Concepts of memory organization.

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-13)**

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-11)**

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-13)**

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-11)**

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,2006
2.	MorrisMano	Computer System Architecture	PHI,Third Edition,2006

Reference Books

1	Albert Paul Malvino,Donald P Leach,	Digital Principles and Applications	Tata McGraw Hill, Eighth Edition, 2014
2	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.

2. https://weblab.deusto.es/olarex/cd/UD/.../number_systems_and_binary_codes.html.

3. *https://www.tutorialspoint.com ,CO - Sequential Circuits.*

4. 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**	Bachelor of Computer Applications	
Course Code :	19U1CACP03	Title : Core 3 : C Programming - Practical	**Batch**	2019-2022
			Semester	1
Hrs/week	3 Hrs		**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 implementation in real world problems.
- To gain skills to handle strings.
- To gain the knowledge of file operations.

COURSE OUTCOMES (CO)

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

CO Number	Statement
CO1	Understand the basic structure of C programming for declaring and usage of variables.
CO2	Find the solution for given problem by using time and memory complexity.
CO3	Solve the given problem by using the loop and decision making statements
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 Applications	
Course Code :	19U1CAAT01	Title : Numerical Methods and Statistics	**Batch**	2019-2022
			Semester	I
Hrs/week	5		**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.
- To gain knowledge about Correlation and Regression

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 Transcended 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 **(12Hrs)**

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 **(12Hrs)**

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 **(12Hrs)**

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.

*** Questions in problems carry 100% marks.**

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	Statistic Methods	Sultan chand and Sons company
3	P.R.Vittal	Business Mathematics	Margham Publications
4	A.Singaravelu	Numerical Methods	Meenakshi Publications

WEBSITE REFERENCE

1. https://arxiv.org/pdf/0809.0465
2. www.cfm.brown.edu/people/sg/AM35odes.pdf
3. www.maths.manchester.ac.uk/cds/internal/tables/numerical.pdf
4. https://www3.nd.edu/~zxu2/acms40390F12/Lec-7.3.pdf

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

SEMESTER - I

Programme Code :	**BCA**	**Programme Title**	**Bachelor of Computer Applications**	
Course Code:	19U1VBET01	Value Based Education 1: Environmental Studies	**Batch**	2019-2022
Hrs/ Week	2 Hrs		**Semester**	I
			Credits	1

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

CO /PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	-	-	-	-	-	-	-	-	-	-	✓	-
CO2	-	-	-	-	-	-	-	-	-	✓	✓	-
CO3	-	-	-	-	-	-	-	✓	-	-	✓	-
CO4	-	-	-	-	-	-	-	✓	-	-	✓	-

SYLLABUS

Unit	Content
Unit-I	**(5 Hours)** 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	**(5 Hours)** 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	**(5 Hours)** 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. Threads 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	**(5 Hours)** 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: Foods, Earthquake, Cyclone and Landslides.
Unit-V	**(5 Hours)** 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:

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

REFERENCE BOOKS:

S. No.	Author Name	Title of the Book	Publisher	Year /Edition
1	Ritu Bir	Environmental Studies	Vayu Education of India	2011
2	Erach Bharucha	Textbook for Environmental Studies	University Press India Pvt. Ltd	2006
3	Anubha Kaushik & C.P.Kaushik	Perspectives in Environmental Studies	New Age International Publishers	2006

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

SEMESTER -I

Programme Code :	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	19U1VBET02	Value Based Education 2: Yoga for Youth Empowerment*	Batch	2019-2022
			Semester	1
Hrs/ Week	2 Hrs		Credits	-

COURSE OBJECTIVES

- To Provide the value Education and improve the students good character
- To understand the yogic life and physical health
- To maintain youthfulness and moderation in five aspects of life
- To enable the students concentration and personality development
- To understand the law of nature and yogasanas

COURSE OUTCOMES (CO)

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

CO Number	CO Statement
CO1	Understand the Philosophy of life science
CO2	Understand the core Human Values in environment.
CO3	Develop a sense of community responsibility in the larger social context.
CO4	Develop the Physical Health by understanding yogasanas with practical sessions

MAPPING WITH PROGRAMME OUTCOMES

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

SYLLABUS

Unit	Content
Unit-I	**(5 Hours)** **Philosophy of life science** Life – purpose of life – philosophy of life – Law of Nature – Kindness towards living belongs preserving Naturals Resources.
Unit-II	**(5 Hours)** **Human values** culture – Analysis of Thought – Moralization of Desire – Neutralization of Anger – Eradication of worry – Blessings and Benefits – Harmonious Friendship – Love and Compassion – Individuals peace.
Unit-III	**(5 Hours)** **Social Values** Family – family peace – Society – Life Style – vworld Brotherhood – Greatness of women – Five Duties – Economics – Hygiene and Health Care – Education – politics – Responsibilities.
Unit-IV	**(5 Hours)** **Developmentof Mental Prosperity** Prosperity of Mind – Life force – Bio-magnetism and mind – Functions of mind mental frequency – Ten stages of mind – genetic centre – Meditation – value of spirituality – universal Magnetism and Bio- Magnetism.
Unit-V	**(5 Hours)** **Maintenance of physical Health** Structure of Human Body – Three Functional Bodies – Harmony between Body and Life Force – Pain, Diseasesand Death – Reasons for Disease – Limit and Method in Five Factors – Simplified physical Exercises – Practice for simplified Physical Exercises.

TEXT BOOKS:

Recent editions of the following books only are recommended

S. No.	Author Name	Title of the Book	Publisher
1.	Vethathiri Maharishi	Journey of Consciousness	Vethathiri Publications, Erode
2.	Vethathiri Maharishi	Simplified Physical Exercises	Vethathiri Publications, Erode
3.	Vethathiri Maharishi	Unified Force	Vethathiri Publications, Erode
4.	Thathuvagnani Vethathiri Maharishi	Yoga for Modern Age	-
5.	Dr.Chandrasekaran	Sound Health Through Yoga	Prem Kalyan Publications,Madurai

SEMESTER I

Programme Code :	BCA	**Programme Title**	Bachelor of Computer Applications	
Course Code :	19U1SBST01	Skill Based Subject 1 :Mathematics For Competitive Examinations – I	**Batch**	2019-2022
			Semester	I
Hrs/week	2 Hours		**Credits**	1

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
CO1	-	-	-	✓	✓	✓	✓	-	✓	-	✓
CO2	-	-	-	✓	✓	✓	✓	-	✓	-	✓
CO3	-	-	-	✓	✓	✓	✓	-	✓	-	✓
CO4	-	-	-	✓	✓	✓	✓	-	✓	-	✓
CO5	-	-	-	✓	✓	✓	✓	-	✓	-	✓

SYLLABUS

UNIT I **(5 Hrs)**

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

UNIT II **(5 Hrs)**

Square Roots and Cube Roots – Average - Problems on Numbers

UNIT III **(5Hrs)**

Problems on Ages - Surds and Indices-Percentage

UNIT IV **(5 Hrs)**

Races and games of skill – Calendar

UNIT V **(5 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 Resoning,	PHI Learning pvt. Ltd
2	Abhijit Guha	Quantitative Aptitude for Competitive Examinations	Tata Mc-Graw Hill Publishing Company

WEBSITE REFERENCE

1.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-I

Programme Code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	19U1SBST02	Skill Based Subject 2: Communication Skills- I	Batch	2019-2022
			Semester	I
Hrs/ Week	2 Hrs		Credits	1

COURSE OBJECTIVES:

- To make the students to understand the barriers in their communication and the ways to over come the same
- To make the students to know various types of listening and the effect of enhancing the listening skills
- 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

1. What's a sentence
2. Types of Sentences
3. Articles
4. Preposition

UNIT- II

1. Homophones- An Introduction
2. Homonyms
3. One Word Substitution
4. Cloze Test

UNIT- III

1. Communication – An Introduction
2. E- Mail Drafting and Etiquette
3. Interviews

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	Techinical English – II	Vijay Nicole Imprints Pvt.Ltd.

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

.

SEMESTER II

Programme Code :	BCA	**Programme Title**	Bachelor of Computer Applications	
Course Code :	**19U2TAL02**	Title : Tamil – II	**Batch**	2019-2022
			Semester	1
Hrs/week	5		**Credits**	3

நோக்கம்

சமூகம் பற்றிய சிந்தனைகளைத் தமிழ்ப் படைப்பிலக்கியங்கள் மூலம் ஏற்படுத்துதல்

இலக்கியங்கள்இ உரைநடைகள் ஆகியவற்றைப் வாசிக்க வைத்தல் மற்றும் விளிப்புணர்வை ஏற்படுத்துதல்.

தமிழ்நாடு அரசுப்பணியாளர் போட்டித்தேர்வு மையம் நடத்தும் போட்டித் தேர்வுகளுக்கு மாணவர்களைத் தயார் செய்தல்.

Course Outcome (CO)

CO Number	CO Statement
CO1	தமிழ் மொழியின் வாயிலாக பண்பாடு, கலை மற்றும் மரபு முதலியவற்றை அறிந்து வாழ்க்கையில் பயனடைதல்.
CO2	நீதி இலக்கியங்கள், பக்தி இலக்கியங்கள் மூலம் வாழ்வியல் நெறிமுறைகளை உணர்ந்து உயர்ந்த குறிக்கோளுடனும் சமுதாயத்தை நேசிக்கத் தகுந்தவர்களாக இருத்தல்.
CO3	புல்வேறு இலக்கியங்கள் வாயிலாக பலவிதமான வகையான வாழ்க்கைத்தரம், மக்களின் வாழ்க்கை முறைகளைத் தெரிந்து கொள்ளுதல்.
CO4	அறத்தின் வழிநின்று பொருளீட்டி இன்பம் துய்ப்பது உன்னத வாழ்வின் அடிப்படை என்பதை இலக்கியங்கள் வாயிலாக மாணவர்கள் உணர்தல்.
CO5	சமூகம், தமிழர் கலைகள் சார்ந்த உரைநடைகளும், கருத்து பரிமாற்றத்திறனுக்கு அடிப்படையாக உள்ள இலக்கணப் பகுதியும், தன்முயற்சிப்படிப்பின் மூலம், பேச்சுக் கலையின் திறன்களை மாணவர்களை அறிந்து கொள்ள செய்தல்.

பாடத்திட்டம்

அலகு 1 நீதி நூல்கள் **13 மணி நேரம்**

1. திருக்குறள் - (3 அதிகாரம்) இன்னா செய்யாமை, பொறையுடைமை, விருந்தோம்பல்
2. முதுமொழிக்காஞ்சி – அறிவுப்பத்து, சிறந்து பத்து
3. புழமொழி நானூறு – 21 முதல் 30 வரை (10 பாடல்கள்)
4. நீதிநெறி விளக்கம் - 1- 10 முதல் பத்து பாடல்கள்

அலகு 2 பக்தி இலக்கியங்கள் **15 மணி நேரம்** 1. குறவஞ்சி – குறத்தி மலைவளம் கூறல் 62 – 63 (6 பாடல்கள்)

2. அபிராமி அந்தாதி – தனம் தருத் கல்வி தரும், பதினாறு பேறுகள் (2 பாடல்)
3. தேவாரம் - பொது – நின்ற திருத்தாண்டகம் - 670 (திருநாவுக்கரசு சுவாமிகள்)

4. நாலாயிரத்திவ்ய பிரபந்தம் - ஊனேறு செல்வத் துடற்பிறவி யான் வேண்டேன் (குலசேகராழ்வார் - 10 பாடல்).
5. திருமந்திரம் - கல்வி (10 பாடல்)

அலகு 3 உரைநடைத்தொகுப்பு **10 மணி நேரம்**

1. நாஞ்சில் நாடன் - ஆதியில் சொல் இருந்தது. (திகம்பரம்)
2. சிற்பி – வீரத்துறவி விவேகானந்தர் (சிற்பியின் கட்டுரைகள்)
3. டாக்டர் அ. தட்சினாமூர்த்தி - ஓவியக்கலை (தமிழர் நாகரிகமும் பண்பாடும்)
4. டாக்டர் எம்.ஆர். விஜயகுமார் - அறிவியலும் ஆன்மீகமும் (பிரபஞ்ச ரகசியம்)
5. மஞ்சை வசந்தன் - உளவியல் (பழமொழி வழங்கும் பல்துறைச் சிந்தனைகள்)

அலகு 4 இலக்கணம், பயன்பாட்டுத்தமிழ் **10 மணி நேரம்**

- ✓ 1. சொல் வகைகள் - பெயர், வினை, இடை, உரி
- ✓ 2. வாக்கியம், வாக்கிய வகைகள், வினை வகைகள் - செய்வினை, செயப்பாட்டுவினை, தன்வினை, பிறவினை, உடன்பாட்டுவினை
- ✓ 3. மொழிபெயர்த்தல், விண்ணப்பம், மடல்கள்

அலகு 5 இலக்கிய வரலாறு **10 மணி நேரம்**

- ✓ 1. உரைநடையின் தோற்றமும் வளர்ச்சியும்
- ✓ 2. சிற்றிலக்கியங்களின் தோற்றமும் வளர்ச்சியும்.
- ✓ 3. நாயன்மார்கள், ஆழ்வார்கள்
- ✓ 4. நீதி நூல்கள்
- ✓ 5. தன்முயற்சிப் படிப்பு : பேசும் கலை
- ✓ முனைவர் கு.ஞானசம்பந்தன்
- ✓ விஜயா பதிப்பகம், கோயம்புத்தூர்.

பாடநூல் - செய்யுள் திரட்டு (தொகுப்பு) தமிழ்த்துறை வெளியீடு 2019

பார்வை நூல்கள்

வ. எண்	ஆசிரியர் பெயர்	நூலின் பெயர்	வெளியீடு	ஆண்டு ∴ பதிப்பு
1	உ.வே சாமிநாதஐயர்	குறுந்தொகை	கழக வெளியீடு	முதற் பதிப்பு: ஜூன் - 2000
2	புலவர் நா.இராமையாபிள்ளை (உ.ஆ)	நற்றிணை	வர்த்தமானன் பதிப்பகம், சென்னை.	முதற் பதிப்பு: 1999.
3	இ.வை அனந்தராமையர்	கலித்தொகை,	கழக வெளியீடு	முதற் பதிப்பு: டிசம்பர் - 1996.
4	டாக்டர் உ.வே.வெ சாமிநாதையர்	புறநானூறு,	கழக வெளியீடு	முதற் பதிப்பு: டிசம்பர் - 1996.
5	புலியூர்கேசிகன்	திருக்குறள்	பூம்புகார் பதிப்பகம்	பிப்ரவரி 2010
6	மதுரைக் கூடலூர்க் கிழார்	முதுமொழிக்காஞ்சி	தமிழ் இணையப் பல்கலைக்கழகம்	அக்டோபர் 2016
7	முன்றுறையரையனார்	பழமொழி நானூறு	தமிழ் இணையப் பல்கலைக்கழகம்	அக்டோபர் 2016
8	குமரகுருபரர்	நீதிநெறி விளக்கம்	தமிழ் இணையப் பல்கலைக்கழகம்	அக்டோபர் 2016

9	திரிகூடராசப்பக் கவிராயர் (புலியூர் கேசிகன் உரை)	திரு குற்றாலக் குறவஞ்சி	பாரி நிலையம் வெளியீடு	2013
10	அபிராமிபட்டர்	அபிராமி அந்தாதி	தமிழ் இணையப் பல்கலைக்கழகம்	ஜனவரி 2014
11	திருநாவுக்கரசு சுவாமிகள்	தேவாரம் - 6 ஆம் திருமுறை (பொது – நின்றதிருத்தாண்டகம்)	கழக வெளியீடு	1996
12	குலசேகராழ்வார்	நாலாயிரத்திவ்ய பிரபந்தம்	லிட்டில் ப்ளவர் கம்பெனி – சென்னை	1996
13	திரு.அ. சிதம்பரனார்	திருமந்திரம்	தென்னிந்திய சைவசித்தாந்த நூற்பதிப்புக் கழகம், சென்னை.	செப்டம்பர் 2017
14	நாஞ்சில்நாடன்	திகம்பரம்	விஜயா பதிப்பகம்	திசம்பர் - 2010
15	டாக்டர் இரா. மோகன்	சிற்பியின் கட்டுரைகள்	மணிவாசகர் பதிப்பகம்	ஆகஸ்டு 1996
16	டாக்டர் அ. தட்சிணாமூர்த்தி	தமிழர் நாகரிகமும் பண்பாடும்	யாழ் வெளியீடு	பிப்ரவரி - 1999
17	மஞ்சை வசந்தன்	பலமொழி வழங்கும் பல்துறைச் சிந்தனைகள்	விஜயா பதிப்பகம்	ஜூன் 2010
18	டாக்டர் எம்.ஆர் விஜய்குமார்	பிரபஞ்ச ரகசியம்	ருக்மணி ஆப்செட் பிரஸ்	1997
19	கா.கோ.வெங்கட்ராமன்	தமிழ் இலக்கிய வரலாறு	கலையக வெளியீடு, திண்டுக்கல்.	இரண்டாம் பதிப்பு: ஜூன் - 2002.
20	மது.ச.விமலானந்தம்	தமிழ் இலக்கிய வரலாறு	முல்லை நிலையம், சென்னை	2014.
21	மு.பரமசிவம்	நற்றமிழ் இலக்கணம்	சைவசித்தாந்த பதிப்பகம், திருநெல்வேலி.	முதற்பதிப்பு:1995.
22	வெங்கட்ராவ் பாலு	கடிதம் எழுதும் கலை	புதிய புத்தக உலகம்	முதல்பதிப்பு 2007
23	முனைவர் கு.ஞானசம்பந்தன்	பேசும் கலை	விஜயா பதிப்பகம்	ஏப்ரல் 2008

SEMESTER II

Programme Code :	**BCA**	**Programme Title**	Bachelor of Computer Applications	
Course Code :	**19U2FRLT02**	Title : French II	**Batch**	2019-2022
			Semester	1
Hrs/week	5		**Credits**	3

SYLLABUS

Prescribed text : **LATITUDES I**

Units : 5 – 8

Authors : Régine Mérieux
Yves Loiseau

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

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

(All questions to be set only from the prescribed text)

Section A (10)

1. Choisissez la meilleure réponse: (10X1=10)

Section B (25)

2. Choisissez un des trois sujets et écrivez un texte d'environ 60 mots : (5X1=5)

3. Traduisez les textes suivants en anglais:(4/5) (4X5=20)

Section C (40)

4. Compréhension (5x1=5)

5. Exercices de grammaire:(5X5=25) **(either/or)**

6. Remplissez le dialogue:(5X1=5)

7. Associez :(5X1=5)

SEMESTER II

Programme Code :	**BCA**	**Programme Title**	Bachelor of Computer Applications	
Course Code :	**19U2HILT02**	Title : Hindi II	**Batch**	2019-2022
			Semester	2
Hrs/week	5		**Credits**	3

SYLLABUS

1. MODERN POETRY : BHOOMIJA by NAGARJUN

   Publishers

   : Rajkamal Prakashan

   1B Nethaji Subash Marg,

   New Delhi.

2. ONE ACT PLAY : NAVEEN EKANKI SANGRAH

   By Dr. Smt. MALATI THIVARI

   SUMITHRA PRAKASHAN

   ASHOK NAGAR

   ALLAHABAD – 1.

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)

   Ref : Bolchal Ki Hindi Aur Sanchar by Dr. Madhu Dhavan

   Vani Prakashan, New Delhi.

SEMESTER II

Programme Code :	ALL UG	**Programme Title**	Bachelor of Computer Applications	
Course Code :	19U2MLLT02	Title :Malayalam II	**Batch**	2019-2022
			Semester	II
Hrs/week	5		**Credits**	3

SYLLABUS

This paper will have the following five units:

Unit I & II

Autobiography

Uinit III,IV & V

Travelogue

Text Books prescribed:

Recent editions of the following books only are recommended

Unit I & II

Vazhithiruvukal-Dr.A.P.J.Abdulkalam

(D.C.Books, Kottayam)

Unit III,IV & V

Alkoottathil Thaniyae - M.T Vasudhevan Nair (D.C.Books, Kottayam)

Reference books:

1. Athmakathasahithyam Malayalathil-Dr.Vijayalam Jayakumar (N.B.S.Kottayam)
2. Sancharasahithyam Malayalathil –Prof.Ramesh chandran. V,(Kerala Bhasha Institute, Trivandrum)

SEMESTER-II

Programme Code	BCA	**Programme Title**	Bachelor of Computer Applications	
Course Code:	19U2ENLT02	Language II-Functional English – II	**Batch**	2019-2022
			Semester	II
Hrs/ Week	5 Hrs		**Credits**	3

COURSE OBJECTIVES:

1.To enable the students to understand the basic grammar in English.

2.To acquaint students with the structure and strategies of conversation

3.To make the students appreciate the significant works and style of prose

4. To develop the skills of speaking and writing without flaws.

5.To develop an interest in the minds of the students to enjoy and appreciate the literary works in English.

COURSE OUTCOMES (CO):

On Successful Completion of the course the students should be able to

CO Number	CO Statement
CO1	Speak and Write without commiting grammatical errors.
CO2	Read and appreciate simple literary works.
CO3	Deal with various conversational situations with confidence.

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)**

1.La Belle Dame Sans Merci - John Keats

2.The Ballad of Father Gilligan – William Butler Yeats

3.The Daffodils - William Wordsworth

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

1. At School - Gandhi
2. My lost Dollar - Stephen Butler Leacock
3. On The Rule of The Road- A.G. Gardiner

UNIT- III- ONE – ACT PLAY **(Hours-12)**

1. A Meeting in a Forest - G. B. Shaw
2. The Dear Departed - Stanley Hougton

UNIT-IV-GRAMMAR AND COMPOSITION **(Hours-12)**

1. Sentence Structure
2. Wh- Questions
3. Question Tag
4. Advertisement
5. Hints Development

UNIT- V- DIALOGUE WRITING (CONVERSATION EXERCISES) **(Hours-12)**

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
3.	Adibah Amin, Rosemary Eravelly, Farida J Ibrahim	Grammar Builder Level Volume 1	Cambridge University Press

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

SEMESTER II

Programme code:	BCA	**Programme Title**	Bachelor of Computer Applications	
Course code:	19U2CACT04	Title: Core 4: C++ Programming	**Batch:**	2019-2022
Hrs/week:	4 Hrs		**Semester:**	2
			Credits:	3

COURSE OBJECTIVES

On Completion Of This Course

- To provide knowledge on Object-Oriented Programming Concepts using C++.
- To learn the concepts of classes and objects.
- To learn about the concepts of operator overloading and Inheritance.
- To understand the basic concepts of pointers and functions.
- To enhance the students knowledge in 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	Discuss 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 0f 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

Recent editions of the following books only are recommended

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

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, 4th Edition, 2009
2	Robert Lafore	Object Oriented Programming in C++	Galgotia Publications, 4th edition,2002
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:	19U2CACT05	Core 5: Data Structures	**Batch**	2019-2022
Hrs/week:	4 Hrs		**Semester**	2
			Credits	3

COURSE OBJECTIVES

On Completion of this Course

- To enhance the students to understand the basic concepts of Data Structures and Algorithm.
- To understand the concepts of Stack, Queue.
- To learn about the concepts of Linked List.
- To provide the knowledge of sorting and searching techniques.
- To acquire the basic concepts of file organization.

COURSE OUTCOMES (CO)

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

CO Number	CO Statement
CO1	Recall the students to understand the basic concepts of Data Structures and Algorithm.
CO2	Understand the concepts of Stack, Queue.
CO3	Apply the concepts of Linked List.
CO4	Use different types of sorting and searching algorithms.
CO5	Demonstrate file handling techniques.

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-15)**

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-15)**

Trees: Binary Tree - Binary Tree representation - Binary Tree Traversal. Graphs: 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-08)**

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,2008
2	Ashok N Kamthane	"Programming and Data Structures"	Pearson Education, Latest Edition,2004

Reference Books

1	Malik,D,S.,	Data structures using C++	Cengage Learning [1st Edition]
2	Vaugha H.Patil,	Data Structures Using C++	Oxford Higher Education [1st Edition]

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.tutorialspoint.com/data_structures_algorithms/tree_data_structure.htm

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

SEMESTER II

Programme code:	BCA	**Programme Title**	Bachelor of Computer Applications	
Course code:	19U2CACP06	Title: Core 6: Data Structures and C++ Programming - Practical	**Batch**	2019-2022
Hrs/week:	3 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 should 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 stings. 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 *LINKED LIST*.
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 :	19U2CAAT02	Title : Allied 2: Discrete Mathematics	**Batch**	2019-2022
			Semester	II
Hrs/week	5 Hrs		**Credits**	4

COURSE OBJECTIVES

To enable the Students

- To understand the concept of set theory, Logic and Relations
- To know about the argument using logic notation
- To learn the concept of relation
- 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 **(12Hrs)**

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

UNIT III **(12Hrs)**

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

UNIT IV **(12 Hrs)**

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.Venketaram en,Dr.N.Sridharan, 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 Learning, Seminar, Assignment, Google classroom.

SEMESTER -II

Programme Code :	BCA	**Programme Title**	Bachelor of Computer Applications	
Course Code:	19U1VBET02	Value Based Education 2: Yoga for Youth Empowerment*	**Batch**	2019-2022
			Semester	2
Hrs/ Week	2 Hrs		**Credits**	4

COURSE OBJECTIVES

- To Provide the value Education and improve the students good character
- To understand the yogic life and physical health
- To maintain youthfulness and moderation in five aspects of life
- To enable the students concentration and personality development
- To understand the law of nature and yogasanas

SYLLABUS

Unit	Content
Unit-I	**(5 Hours)** **Philosophy of life science** Life – purpose of life – philosophy of life – Law of Nature – Kindness towards living belongs preserving Naturals Resources.
Unit-II	**(5 Hours)** **Human values** culture – Analysis of Thought – Moralization of Desire – Neutralization of Anger – Eradication of worry – Blessings and Benefits – Harmonious Friendship – Love and Compassion – Individuals peace.
Unit-III	**(5 Hours)** **Social Values** Family – family peace – Society – Life Style – world Brotherhood – Greatness of women – Five Duties – Economics – Hygiene and Health Care – Education – politics – Responsibilities.
Unit-IV	**(5 Hours)** **Development of Mental Prosperity** Prosperity of Mind – Life force – Bio-magnetism and mind – Functions of mind mental frequency – Ten stages of mind – genetic centre – Meditation – value of spirituality – universal Magnetism and Bio- Magnetism.
Unit-V	**(5 Hours)** **Maintenance of physical Health** Structure of Human Body – Three Functional Bodies – Harmony between Body and Life Force – Pain, Diseases and Death – Reasons for Disease – Limit and Method in Five Factors – Simplified physical Exercises – Practice for simplified Physical Exercises.

TEXT BOOKS:

Recent editions of the following books only are recommended

S. No.	Author Name	Title of the Book	Publisher
1.	Vethathiri Maharishi	Journey of Consciousness	Vethathiri Publications, Erode
2.	Vethathiri Maharishi	Simplified Physical Exercises	Vethathiri Publications, Erode
3.	Vethathiri Maharishi	Unified Force	Vethathiri Publications, Erode
4.	Thathuvagnani Vethathiri Maharishi	Yoga for Modern Age	-
5.	Dr.Chandrasekaran	Sound Health Through Yoga	Prem Kalyan Publications,Madurai

SEMESTER II

Programme Code :	BCA	**Programme Title**	Bachelor of Computer Applications	
Course Code :	**19U2CCVE2**	Value based Education 3: Ethics and Culture * (அறவியலும் பண்பாடும்)	**Batch**	2019-2022
			Semester	2
Hrs/week	2		**Credits**	1

அறவியலும் பண்பாடும் - (தனிமனித விழுமியங்கள்இ குடும்ப விழுமியங்கள், சமுதாய விழுமியங்கள், பணிசார்ந்த விழுமியங்கள், தேசிய விழுமியங்கள், உலகளாவிய விழுமியங்கள்)

நோக்கம்

- ✓ ஒவ்வொருவரும் தன்னை உயர்த்திக் கொண்டுஇ சமுதாய மக்களுடன் இணக்கமாக வாழ்ந்து சமுதாயத்தை உயர்த்த வேண்டும். உன்னத இலட்சியத்திற்காக தமது வாழ்க்கையை அர்த்தமுள்ளதாக ஆக்கிக் கொள்ள வேண்டும்.
- ✓ குடும்ப அமைதி, ஐந்தொழுக்கப் பண்பாடு, உணவே மருந்து, ஆளுமைப்பண்பு, தலைமைப்பண்பை மாணவர்களிடம் உருவாக்குதல்.
- ✓ உலக நாடுகளுடன் ஒற்றுமை, புரிந்துணர்வு ஆகியவற்றின் மூலம் இந்தியாவின் வலிமையை உணரச்செய்தல்.
- ✓ வளர்ந்துவரும் இந்தியா, உலகிற்கு வழங்கும் செய்தி, வேற்றுமையில் ஒற்றுமை, இந்தியாவும் ஆன்மீகமும், பற்றி மாணவர்களை உணரச்செய்தல்.

பாடப்பகுதி கற்றலின் வெளிப்பாடு - ஊழரசளந ழுரவஉழஅந (ஊழு)

CO Number	CO Statement
CO1	தன்னை, உள்நோக்க அறிவால் ஆராய்ந்து தன்னிடமுள்ள உணர்ச்சி வயப்பட்ட குணங்களை எல்லாம் மாற்றியமைத்துக் கொள்ளச் செய்தல்.
CO2	குடும்ப அமைதி, ஐந்தொழுக்கப் பண்பாட்டை அறிந்து, அதன்படி வாழ்ந்து தன்னை உயர்த்திக் கொள்ளச் செய்தல்.
CO3	வாழ்க்கையின் இலக்கை அடையத் தேவையான தகுதியை வளர்த்துக் கொள்ளல்.
CO4	பிற நாடுகளோடு இந்தியா கொண்டுள்ள தொடர்பின் மூலம் நமது நாட்டினுடைய கலாச்சாரம், பண்பாட்டினை உணரச்செய்தல்.
CO5	வளர்ந்துவரும் இந்தியா, உலகிற்கு வழங்கும் செய்தி, வேற்றுமையில் ஒற்றுமை, இந்தியாவும் ஆன்மீகமும் பற்றி மாணவர்களை உணரச்செய்தல்.

நிரல் விளைவுகளைக் கொண்ட வரைபடம்

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

பாடத்திட்டம்

அலகு – 1 **6 மணி நேரம்**

✓ மனித வள மாண்பின் அவசியம் - மனித வாழ்வின் நோக்கமும் தத்துவமும் - தன்னிலை அறிதல் - வாழ்த்தும் பயனும் - அன்பும் கருணையும்

அலகு – 2 **6 மணி நேரம்**

- குடும்ப அமைதி - இல்லறமே நல்லறம் - ஐந்தொழுக்கப் பண்பாடு – பாலுணர்வும் ஆன்மீக மேம்பாடும் - உணவே மருந்து .

அலகு – 3 **6 மணி நேரம்**

- ஆளுமை மேம்பாட்டுக் கூறுகள் - சுயமுன்னேற்றமும் தலைமைப் பண்பும் மனித வேறுபாட்டிற்கான காரணங்கள் - மனத்தூய்மை தரும் சமுதாய நலன் .

அலகு – 4 **6 மணி நேரம்**

- செம்மாந்த குடியுரிமை – வளர்ந்து வரும் இந்தியா – வெளிநாட்டவர் பார்வையில் இந்தியா - இந்திய கலாச்சாரத்தின் மேன்மை

அலகு – 5 **6 மணி நேரம்**

aa) இந்தியா உலகிற்கு வழங்கும் செய்தி – வேற்றுமையில் ஒற்றுமை - இந்தியாவும் ஆன்மீகமும் - கலாச்சார சீரழிவும் தீர்வும் - செயலும் மனிதனே தீர்வும் மனிதனே .

பாட நூல் - தொகுப்பு தமிழ்த்துறை வெளியீடு 2019.

பார்வை நூல்கள்

S. No	Author Name	Title of the Book	Publisher	Year / Edition
1	-	தனிமனித விழுமியங்கள்	என்.ஜி.எம். கல்லூரி, பொள்ளாச்சி.	2016.
2	-	சமுதாய விழுமியங்கள்	என்.ஜி.எம். கல்லூரி, பொள்ளாச்சி.	2015.
3	-	குடும்ப விழுமியங்கள்	என்.ஜி.எம். கல்லூரி, பொள்ளாச்சி.	2015.
4	-	உலகலாவிய விழுமியங்கள்	என்.ஜி.எம். கல்லூரி, பொள்ளாச்சி.	2015.
5	-	பணிசார்ந்த விழுமியங்கள்	என்.ஜி.எம். கல்லூரி, பொள்ளாச்சி.	2016.
6	-	தேசிய விழுமியங்கள்	என்.ஜி.எம். கல்லூரி, பொள்ளாச்சி.	2015.

Semester II

Programme Code :	BCA	**Programme Title**	Bachelor of Computer Applications	
Course Code :	19U2SBST03	Skill Based Subject 3: Mathematics for Competitive Examinations - II	**Batch**	2019-2022
			Semester	II
Hrs/week	2 Hours		**Credits**	1

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	-	✓	✓	✓	✓	.	-	.	.	-	✓
CO4	-	✓	✓	✓	✓	.	-	.	.	-	✓
CO5	-	✓	✓	✓	✓	.	-	.	.	-	✓

SYLLABUS

UNIT I **(5 Hrs)**

Profit and Loss – Ratio and Proportion

UNIT II **(5 Hrs)**

Partnership – Chain Rule

UNIT III **(5 Hrs)**

Time and Distance – Time and work

UNIT IV **(5 Hrs)**

Permutation & Combinations

UNIT V **(5 Hrs)**

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 Resoning	PHI Learning pvt. Ltd
2	Abhijit Guha	Quantitative Aptitude for Competitive Examinations	ata Mc-Graw Hill Publishing Company

WEBSITE REFERENCE

1.https://www.careerbless.com/aptitude/qa/home.php

2.https://www.indiabix.com/

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

SEMESTER-II

Programme Code:	BCA	Programme Title	Bachelor of Computer Applications	
Course Code:	19U2SBST04	Skill Based Subject 4: Communication Skills- II	Batch	2019-2022
			Semester	II
Hrs/ Week	2 Hrs		Credits	1

COURSE OBJECTIVES:

- To make the students to understand the barriers in their communication and the ways to overcome the same.
- To make the students to know various types of listening and the effect of enhancing the listening skills
- 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 listining 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/ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	✓	-	-	-	-	-	-	-	-	-	✓
CO2	✓	-	-	-	✓	-	-	-	-	-	✓
CO3	✓	-	-	-	-	-	-	-	-	-	-

SYLLABUS

UNIT –I

- ✓ Parts of Speech
- ✓ Tenses
- ✓ Active voice and passive voice

4. Phrasal Verbs

UNIT- II

1. Confusable Words
2. Jumbled Sentences
3. Synonyms
4. Antonyms

UNIT- III

1. Reading Techniques (Skimming and Scanning)
2. Types of Reading - Intensive Reading and Extensive Reading
3. Brain Storming
4. Role Play

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	Techinical English – II	Vijay Nicole Imprints Pvt.Ltd.

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

SEMESTER – III

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	19U3CACT07	**Core 7:** Operating Systems	**Batch**	2019-2022
Hrs/Week	5 Hrs		**Semester**	III
			Credits	4

COURSE OBJECTIVES:

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

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:12)**

Introduction: Basic OS functions, types of operating systems–simple batch systems - multiprogrammed batched systems , time sharing systems; Personal computer systems, parallel systems, Distributed Systems, real time systems. OS Concepts - Processes, files, system calls and the shell.

UNIT II **(Hours:11)**

OS Structure: Layered Systems-Virtual Machines-Client Server Models. Processes-System view of the process model, process hierarchy, process states, implementation of processes. Process Synchronization-critical section problem, semaphores. Thread-motivation for threads, thread states, threading models.

UNIT III **(Hours:13)**

Interprocess 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 Writers Problems - The Sleeping Barber Problem. Process Scheduling - round robin scheduling, priority Scheduling, multiple queues Scheduling, shortest job first Scheduling, shortest process first Scheduling policy versus Mechanism, First-in-First-out Scheduling, Scheduling in Real-Time Systems, Thread Scheduling.

UNIT IV **(Hours : 10)**

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 wait Condition- Attacking the No Preemption Condition-Attacking the Circular Wait Condition.

UNIT V **(Hours : 14)**

Memory Management: Physical and virtual address space; memory allocation strategies, segmentation. Virtual Memory Organization-Paging-Page Tables-Page Replacement Algorithm: The Optimal Page Replacement Algorithm-The Not Recently Used Page Replacement Algorithm- The First In First Out. 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, Directory operations.

Text Books

S.No	Authors	Title	Publishers	Year of Publication
1.	Andrew STanenbaum	"Modern Operating Systems"	Prentice Hall of India Pvt. Ltd	Fourth edition, 2003

REFERENCE BOOKS:

1.	Abraham Silberschatz Peter Baer Galvin and Greg Gagne	Operating System Concepts	John Wiley & Sons (ASIA) Pvt.Ltd	Sixth edition 2003
2.	Harvey M. Deitel	Operating Systems	Pearson Education Pvt. Ltd	Second Edition, 2002

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

SEMESTER – III

Programme code:	BCA	**Programme Title**	Bachelor of Computer Applications	
Course code:	19U3CACT08	**Core 8:** Java Programming	**Batch**	2019-2022
Hrs/Week	6 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 will 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 - 15)**

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 - 13)**

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 - 16)**

Classes and Objects: Creating Classes and objects, Memory allocation for objects, Constructor, Implementation of Inheritance, Implementation of Polymorphism, Method Overloading, Method Overriding, Nested and Inner classes.**Arrays and Strings:** Arrays, Creating an array, Types of Arrays, String class Methods, String Buffer methods.Multithreaded programming – Thread exceptions – Life cycle of Thread - Thread priority.

UNIT IV **(Hours - 15)**

Managing Errors and Exceptions Exception Handling: Exception types, Using try catch and multiple catch, Nested try, throw,throws and finally, Creating User defined Exceptions. **Applet Programming:** Introduction, Types of Applet, Applet Life cycle, Creating Applet, Applet tag.

UNIT V **(Hours - 16)**

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

S.No	Authors	Title	Publishers	Year of Publication
1	E.Bala Gurusamy	Programming with Java	Tata McGraw Hill	Third Edition,2011
2	Patrick Naughton Hebert Schildt	The Complete Reference Java 2	Tata McGraw Hill	Third Edition,2000

Reference Books

S.No	Authors	Title	Publishers	Year of Publication
1	John R.Hubbard	Programming with Java	Tata McGraw	Second Edition,1999
2	Herbert Schildt	The Complete Reference	McGraw Hill	Eleventh edition, 2018

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\
4. https://fresh2refresh.com/java-programming/

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

SEMESTER – III

Programme code:	BCA	**Programme Title**	Bachelor of Computer Applications	
Course code:	19U3CACT09	**Core 9:** Data Communications and Networks	**Batch**	2019-2022
Hrs/Week	5 Hrs		**Semester**	III
			Credits	3

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 thecourse, 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 : 12)**

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

UNIT II **(Hours:12)**

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:12)**

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:12)**

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 Adressing – The IPV6 Protocol – The ICMPv6 Protocol – Transition from IPV4 to IPV6.

UNIT V **(Hours:12)**

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

S.No	Author	Title of the Book	Publisher	Year of Publication
1	Behrouz A. Forouzan	Data Communications and Networking	McGraw Hill Education Pvt. Ltd	Fifth Edition, 2011

Reference Books

S.No	Author	Title of the Book	Publisher	Year of Publication
1	Achyut S Godbole	Data Communications and Networks	Tata McGraw Hill Education Pvt. Ltd	2002
2	Uyless d. Black	Data Communications and Networks	Tata McGraw Hill Education Pvt. Ltd	1993

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

SEMESTER – III

Programme code:	BCA	**Programme Title**	Bachelor of Computer Applications	
Course code:	19U3CACP10	**Core 10:** Java Programming - Practical	**Batch**	2019-2022
Hrs/Week	6 Hrs		**Semester**	III
			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:	BCA	**Programme Title**	Bachelor of Computer Application	
Course code:	19U3CAAT03	**Allied 3:** Operations Research	**Batch**	2019-2022
Hrs/Week	5 Hrs		**Semester**	III
			Credits	4

COURSE OBJECTIVES

To enable the Students

bb) To Know Operation Research and LPP, solving LPP
cc) To solve transportation and assignment problems
dd) To acquire knowledge of queueing theory, PERT and CPM

COURSE OUTCOMES

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:12)**

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

UNIT II **(Hours:12)**

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 **(12 Hrs)**

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

UNIT IV **(12 Hrs)**

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

UNIT V **(12 Hrs)**

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	Year/Publication
1	Prof. V. Sundaresan, K.S. Ganapathy Subramanian, K. Ganesan	Resource Management Techniques	A.R. Publications, Chennai.	2015

REFERENCE BOOK

S. No.	Author Name	Title of the Book	Publisher	Year /Publication
1	Kanti Swarup, P.K. Gupta and Man Mohan	Operation Research	Sultan Chand & sons, New Delhi	13th Edition, 2007.
2	Prof.V.Sundaresan, K.S.Ganapaty Subramanian, K. Ganesan	Resource Management Techniques	A.R. Publications, Chennai	6th Edition, 2012
3	Prem Kumar Gupta D.S, Hira S	Operation Research	Chand & Company Ltd, Ram Nagar, New Delhi	2007

WEBSITE REFERENCE

1.https://www.nptel.ac.in-courses-Webcourse-contents-OPTIMIZATION-METHODS-pdf-Module
2. https://www.mech.iitm.ac.in/nspch.pdf
3. 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 :	19U3SBST05	**Skill based subject 5:** Mathematics for competitive Examinations III	**Batch**	2019-2022
			Semester	III
Hrs/week	2		**Credits**	1

COURSE OBJECTIVES

To enable the Students

- ✓To make the students to know the concept of Pipes, Cistern and Probablity.
- ✓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 Number	**CO Statements**
CO1	Several tricks and formulas for pipes and cisterms are available which reduces the effort to solve the problem.
CO2	Solve the problems on time and distance train, boats and stream.
CO3	Apply the concept of Alligation and height & distance to solve problem.

MAPPING WITH PROGRAMME OUTCOMES

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

UNIT I **(6 Hrs)**

Pipes and cisterm – Probablity

UNIT II **(6 Hrs)**

Problems on trains

UNIT III **(6 Hrs)**

Problems on Boats and Streams

UNIT IV **(6 Hrs)**

Alligation or mixture

UNIT V **(6 Hrs)**

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	Year / Edition
1	R. S. Agarwal	Quantitative Aptitude (for Competitive Examinations)	S. Chand and Company Limited	2017

.

REFERENCE BOOKS

S. No.	Author Name	Title of the Book	Publisher	Year / Edition
1	R.V.Praveen	Quantitative Aptitude and Resoning,	PHI Learning pvt. Ltd	2012
2	Abhijit Guha	Quantitative Aptitude for Competitive Examinations	Tata Mc-Graw Hill Publishing Company	2019

WEBSITE REFERENCE

1.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:	19U3SBST06	**Skill Based Subject 6 :** Communication Skills- III	**Batch**	2019-2022
			Semester	III
Hrs/ Week	2		**Credits**	1

COURSE OBJECTIVES:

- To make the students to understand the barriers in their communication and the ways to over come the same
- To make the students to know various types of listening and the effect of enhancing the listining skills
- 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 will 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 listining and be a careful listener
CO3	To deal with different kinds of situations by conversing effectively and maintaining the etiquette required for such situations

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

1. Group Discussion
2. Speaking at Different Types of Interviews
3. Making Effective Telephone Calls
4. Telephone Etiquette

TEXT BOOKS:

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher	Year of publication
1	Meenakshi Raman and Sangeeta Sharma	Communication Skills	Oxford University Press	2009
2	Shalini Aggarwal	Essential Communication Skills	Ane Books Pvt.Ltd. New Delhi	First edition 2011

REFERENCE BOOKS:

S. No	Author Name	Title of the Book	Publisher	Year of Publication
1	Course team, Bharathiyar University	Communication Skills a multi- skill course	Macmillan Publishers India LTD.	2009
2	Krishna Mohan	Developing Communication Skills	Macmillan Publishers India LTD,	2013
3	Joyce Pereire	Techinical English – II	Vijay Nicole Imprints Pvt.Ltd.	2014

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

SEMESTER: III

Programme Code :	BCA	**Programme Title**	**Bachelor of Computer Applications**	
Course Code :	19U3NMET01	**Non Major Elective 1 :** Food Science and Nutrition	**Batch**	2019-2022
			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 andsources, 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	SURE Publishers, 2018

REFERENCE BOOKS:

S. No	Author Name	Title of the Book	Publisher
1	Guthrie Helen.	Introductory Nutrition	Mirror/ Mosby College Publishing Times,1986
2	Mudambi, S.R., Rajgopal, M.V.	Fundamentals of Foods and Nutrition	NewAge International Pvt. Ltd,1990

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

SEMESTER - III

Programme Code:	B.C.A	Programme Title	Bachelor of Computer Applications	
Course Code:	19U3SSCT01	Self Study Course 1: மனித வாழ்க்கையும் காந்தியடிகளும்மூழு	Batch	2019-2022
			Semester	3
Hours/ Week	-		Credits	1

நோக்கம்

1. மானிட வாழ்வில் பின்பற்ற வேண்டிய நடைமுறைச் செயல்பாடுகளை உணர்த்துதல்.
2. இன்றைய நவீன வாழ்க்கைச் சூழலில் ஏற்படும் சிக்கல்கள், பிரச்சனைகளை காந்திய தீர்வுகளை அறியச் செய்தல்.
3. மகாத்மாவின் வாழ்க்கை முறை, கல்வி, வாழ்வு பற்றிய கருத்துக்களை கற்று உணர்தல்.
4. நடைமுறை வாழ்வில் அகிம்சையைப் பின்பற்றுவதால் ஏற்படும் நன்மைகளைப் புரிந்து கொள்ளச் செய்தல்.
5. காந்தியடிகள் இந்திய விடுதலைக்காகப் பின்பற்றிய கொள்கைகளை மாணவர்கள் கற்று அறிதல்.

பாடப்பகுதி கற்றலின் வெளிப்பாடு - ஊழரசளந முரவஉழஅந (ஊழு)

CO Number	CO Statement
CO1	மானிட பிறப்பின் நோக்கம், வாழ்க்கை இரகசியம், தன்னலம் இல்லா வாழ்க்கை, இல்வாழ்க்கையின் சிறப்பு, உடலைப் பாதுகாத்தல் ஆகியவற்றை புரிந்து கொள்ளல்.
CO2	வாய்மையினால் இணைந்த மெய்யறிவு, இயற்கையுடன் இணைந்த மெய்யறிவு, சத்தியாகிரகிகளாக ஆத்ம சக்தியுடன் வாழ்ந்த பெரியோர்களின் வாழ்வை உணர்ந்துஅவர்கள் வழியில் வாழ முயற்சித்தல்.
CO3	குந்தியடிகள் வாழ்க்கை மூலம் கல்வி, இல்லறம், பெற்றோரைப் பேணல், தியாகம், இயற்கை வாழ்வு, செல்வம், உண்மை, அஞ்சாமை மாணவர்கள் அறிதல்.
CO4	இயற்கையின் நோக்கம், அகிம்சையை பின்பற்றுதல், ஊன் உண்ணாமை, தீண்டாமை, சுயராஜ்யத்தின் தன்மைகள், மக்களின் வாழ்க்கையில் சுதேசியம், சுதேசிய உரிமை, காந்தியடிகளின் வாழ்க்கை மூலம் மாணவர்கள் அறிதல்.
CO5	சத்தியாகிரகம் விளக்கம், காந்தியும் சத்தியாகிரகமும், காந்தியும் தென்னாப்பிரிக்கப் பயணம், ரௌலட் சட்டம், காந்தியின் சிறை வாழ்வு, சமய வாழ்வு, சமரச சன்மார்கம், சமரச வாழ்வின் பயன் போன்றவற்றை மாணவர்கள் அறிதல்.

MAPPING WITH PROGRAMME OUTCOMES

CO /PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	-	-	-	-	-	-	-	-	-	-	✓	-
CO2	-	-	-	-	-	-	-	-	-	✓	✓	-
CO3	-	-	-	-	-	-	-	✓	-	-	✓	-
CO4	-	-	-	-	-	-	-	✓	-	-	✓	-
CO 5	✓	-	-	-	-	-	-	✓	-	-	-	✓

பாடத்திட்டம் : மனித வாழ்க்கையும் காந்தியடிகளும்

அலகு 1 பக்க எண் (1 – 40)

மனிதன் - மனிதப் பிறவியின் விழுப்பம் - மக்கள் - மனிதன் எவன் - வாழ்க்கை – கீதா ரகசியம் - கருத்து வேற்றுமை – உரை கண்டவர் - போர்களத்தில் இல்லறத்தானுக்கு அறிவுறுத்தல் - பயன் கருதா அருளறம் - அருச்சுணன் தெளிவு - இரு பிறப்பு - இல்லற நோக்கம் - திருக்குறள் நுட்பம் - இல்லற மாண்பு – அருளறம் - நாட்டு அறநூல்கள் -சில முறைகள் உடலோம்பல் - ஞானிகள் நோக்கம் - உடம்பின் அருமை.

அலகு 2 பக்க எண் (41 – 73)

வாய்மை – வாய்மையில் பிற அறங்கள் - வாய்மை உயிர் மெய்யறிவு – விலங்கும் மனிதனும் - இயல்பு – மனச்சான்று - இயற்கை வாழ்வில் மெய்யறிவு – பொறுமை – நான்கு குணங்கள் - அடக்கம் - உள்ளநிறை – உண்மை – பொறுமை – பொறாமை ஆன்ம சக்தி – உள் ஒளி – ஆத்ம சக்தி – ஆத்ம சக்தியும் பூத சக்தியும் - சத்யாகிரகம் - இயல்பு – துராக்கிரகம் - அச்சுறுத்தல் - தியாகம் - சத்யாகிரகிகள் - ஊடல் - மார்க்கண்டேயர் - பிரகலாதன் - அரிச்சந்திரன் - வசிஷ்டன் - புத்தர் - ஸோக்ரதர்- கிருஸ்து – முகம்மது – கீதை – சாவித்திரி – திருநாவுக்கரசர் - மெய்பொருள் - பிரான்சிஸ் முனிவர் - தால்தாய் - தோரி – முதலியோர் - இயற்கையறம் சத்தியாகிரகம், சாதுநிலை – சாது எவன்.

அலகு 3 பக்க எண் (75 – 200)

காந்தியடிகள் - பொருள் - மகாத்மா – மகான் - சில அடி கண்மார் புது உலகம் - காரல் மார்க்ஸ் - சிறியவுடலில் பெரிய ஒளி – பிறப்பு – கல்வி – பெற்றோர்ப் பேணல் - இல்லறம் - தியாகம் - இயற்கை வாழ்வு – செல்வம் நல்குரவு – வாழ்க்கைக் கூறுகள் - கிறிஸ்து மொழிகள் - உண்மையும் அஞ்சாமையும் - அடிகளின் அஞ்சா வினைகள் - மெய்யறிவு.

அலகு 4 பக்க எண் (200 – 257)

அஷிம்சை – அஷிம்சையும் சமயமும் - ஊன் எண்ணாமை – தீண்டாமை - இயற்கை அறம் அஷிம்சை – நவகாளி நிகழ்ச்சி – மார்க்ஸியம் - சுயராஜ்யமும் சுதேசியுமும் - பன்மையில் ஒருமை – பாரத மக்களும் சுதேசியமும் - சுதேசியமும் உரிமையும் - சுயராஜ்யம் கடவுள் படைப்பு நோக்கம் - சாதி சமயப்போர் - நாட்டுத்தொண்டு.

அலகு 5 பக்க எண் (257 – 364)

பொருள் - காலம் தோற்றம் - சத் விளக்கம் - சத்யாக்கிரகியார் - குறைபாடுகள் - உயிர் உடல் வாழ்வு – சத்யாகிரகமும் அடிகளும் - கூர்ஜரப் பாட்டு – தென்னாப்பிரிக்கா – சாம்யராண் - செய்தா – ரௌலட் சட்டம் - சத்யாகிரக நாள் - சட்டமும் அறமும் - சட்ட வரம்பு – சிறைப்பாகுபாடுகள் - சமயவாழ்வு – உண்மை மனிதன் - முழுமுதற் பொருளுண்மை – அஷிம்சையே சமயம் - சமயப்போர் - சமய வாழ்வின் இயல்பு – அடிகள் சமயம் சமரச சன்மார்க்கம் - சாதுநிலை – சமய வாழ்வின் பயன் சாதுநிலை – சாதுக்களால் உலகம் நடைபெறல் - பிறர்க்குரிய வாழ்வு – பெரியோர் வருகை – அடிகள் வாழ்வு நூலின் பெரும் பிரிவுகள் - அடிகள் அறவுரைச் சுருக்கம் - இன்பப்பேறு – வாழ்த்து.

பாடநூல்

வ. எண்	ஆசிரியர் பெயர்	நூலின் பெயர்	வெளியீடு	ஆண்டு – பதிப்பு
1	திரு. வி. கலியாணசுந்தரனார்	மனித வாழ்க்கையும் காந்தியடிகளும்	பூம்புகார் பதிப்பகம் சென்னை - 600013	ஏப்ரல் - 2004

பார்வை நூல்

வ. எண்	ஆசிரியர் பெயர்	நூலின் பெயர்	வெளியீடு	ஆண்டு – பதிப்பு
1	மோகன்தாசு கரம்சந்த் காந்தி (தமிழாக்கம் - ரா. வேங்கடராஜுலு)	மகாத்மா காந்தியின் சுய சரிதை	நவஜீவன் பிரசுராலயம் அகமதாபாத் - 380014	ஜுலை - 2000
2	தொகுப்பு – பேராசிரியர் முனைவர் மா.ரா.போ. குருசாமி	முகாத்மா நூல்கள் (காந்தி முன்னோடிகள்)	வர்த்தமானர் பதிப்பகம் -சென்னை - 17	2005
3	மோகன்தாசு கரம்சந்த் காந்தி (தமிழாக்கம் - தி.சு. ஆவினாசிலிங்கம்)	முகாத்மா நூல்கள் (தென்னாப்பிரிக்காவில் சத்தியாகிரகம்)	வர்த்தமானர் பதிப்பகம் -சென்னை - 17	2005

SEMESTER III

Programme Code :	12-ம் வகுப்பு வரை தமிழ் மொழிப்பாடம் பயிலாதவர்களுக்கு	**Programme Title**	Bachelor of Computer Applications	
Course Code :	**19U3BTLT01**	**Non Credit Course 1 :** Basic Tamil I :அடிப்படைத் தமிழ்	**Batch**	2019-2022
			Semester	III
Hrs/week	-		**Credits**	-

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 – ஊழரசளந ழுரவஉழஅந (ஊழு)

ஊழு ரேஅடிநச	**ஊழு ளுவயவநஅநவெ**
ஊழு1	தமிழ் எழுத்துக்களைத் தெளிவாக எழுதுதல்.
ஊழு2	சொற்கள் கொடுக்கப்பட்டால் அவைகள் எச்சொற்கள் என வகைகளைக் கூறுதல்.
ஊழு3	ஒரு சொற்றொடரில் எழுவாய், செயப்படுபொருள், பயனிலை எவை என கண்டறிந்து கூறுதல்.
CO4	thf;fpaq;fisg; gpioapd;wp vOJjy;.

நிரல் விளைவுகளைக் கொண்ட வரைபடம்

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

தமிழ் மொழியின் அடிப்படைக் கூறுகள்.

எழுத்துக்கள் : முதலெழுத்துக்கள் (உயிர் எழுத்து, மெய் எழுத்து, உயிர்மெய 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 :	12-ம் வகுப்பு வரை தமிழ் மொழிப்பாடம் பயின்றவர்களுக்கு	**Programme Title**	Bachelor of Computer Applications	
Course Code :	**19U3ATLT01**	Advanced Tamil I: சிறப்புத் தமிழ்	**Batch**	2019-2022
			Semester	III
Hrs/week	-		**Credits**	-

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 - ஊழரசளந ழுரவஉழஅந (ஊழு)

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.

நிரல் விளைவுகளைக் கொண்ட வரைபடம்

CO /PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	-	-	-	-	-	✓	-	-	-	-	-	-
CO2	✓	-	-	-	-	-	-	-	-	-	-	-
CO3	✓	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	✓	-	-	-
CO5	-	-	-	-	-	-	-	-	-	✓	-	-

பாடத்திட்டம்

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.

$W – 5 ghle;jOtpa tuyhW.

	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 IV

Programme code:	BCA	**Programme Title**	Bachelor of Computer Application	
Course code:	19U4CACT11	**Core 11:** Web Designing	**Batch**	2019-2022
Hrs/Week	5 Hrs		**Semester**	IV
			Credits	3

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 will 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 - 13)**

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 Liks – Table Handling – DHTML and Style sheets – frames.

UNIT II **(Hours - 11)**

Cascading Style sheets : Introduction to CSS – Creating Style Sheets- Commen Tasks with CSS - Colours-Links –Fonts and Icons: The Font Family – Assigning Classes – The Layer Tag – Css Tags.

UNIT III **(Hours - 11)**

Extensive Markup Language (XML) : Introduction – Features of XML – Support and usage – Compatability of XML with others:-CSS and XSL-XML with Style: XSL –Style Sheet Basics, XSL basics, XSL style sheets.Xlinks and Xpointers-URLs Verurs URIs-XMl and SGML .

UNIT IV **(Hours - 12)**

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 - 13)**

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

S.No	Authors	Title	Publishers	Year of Publication
1	C Xavier	World Wide Web Design with HTML	Tata McGraw Hill	2006
2	Ramesh Bangia	Web Technology (Including HTML, CSS, XML, ASP, JavaScript, VB Script)	Firewall Media	2008

Reference Books

S.No	Authors	Title	Publishers	Year of Publication
1	L.Mathu Krithigha Venkatesh	Web Technology	Margham	2006

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 Discussion, Seminar, Assignment, Case studies, Google classroom.

SEMESTER IV

Programme code:	BCA	**Programme Title**	Bachelor of Computer Application	
Course code:	19U4CACT12	**Core 12 :** SYSTEMS ANALYSIS AND DESIGN	**Batch**	2019-2022
Hrs/Week	6 Hrs		**Semester**	IV
			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 would 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 / POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	-	✓	✓	-	-	-	-	-	-	-	✓
CO2	-	✓	✓	-	-	-	-	-	-	-	✓
CO3	-	✓	✓	-	-	-	-	-	-	-	✓
CO4	-	✓	✓	-	-	-	-	-	-	-	✓
CO5	-	✓	✓	-	-	-	-	-	-	-	✓

SYLLABUS

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

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 : 16)**

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 : 14)**

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 : 15)**

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 : 15)**

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

S. No	Author Name	Title of the Book	Publisher	Year of Publication
1.	Elias M.Awad	Systems Analysis and Design	Galgotia.	Second Edition, 2001

REFERENCE BOOKS

S. No	Author Name	Title of the Book	Publisher	Year of Publication
1.	Jeffrey A. Hoffer	Modern System Analysis and Design	Pearson Education	Second edition 2002
2.	Charles S.Wasson	System Analysis, Design, and Development: Concepts, Principles, and Practices	John Wiley & Sons	Second Edition 2006

WEBSITE REFERENCES

1. *https://en.wikipedia.org/wiki/Systems_analysis_and_design*
2. *https://www.tutorialspoint.com/system_analysis_and_design*
3. *www.bcanotes.com/Sad.html*
4. *https://www.wisdomjobs.com › ... › System Analysis and Design*
5. *https://en.wikibooks.org/wiki/Systems_Analysis_and_Design/Introduction*

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

SEMESTER IV

Programme code:	BCA	Programme Title	Bachelor of Computer Application	
Course code:	19U4CACT13	Core 13 : E-Commerce	Batch	2019-2022
Hrs/Week	5 Hrs		Semester	IV
			Credits	4

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 will 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	To know about the ethical, social, and security issues of information systems
CO5	Examine the concept of E- Wallet operations.

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 - 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 - 12)**

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 - 11)**

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 - 13)**

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 - 11)**

Introduction to E-Wallet operation: What is an e-wallet-benifits of Wallet-risks-types of ewalet:paytm,MobiKwik,oxigenWallet,CitrusWallet,ItsCash,FreeCharge,AirtelMoney,Jiomoney,mRupee,SBI Buddy,Vodaphone M-Pesa.Advantages and disadvantages of digital Wallet.

Text books:

S.No	Authors	Title	Publishers	Year/Edition
1.	David Whitely	E-Commerce Strategy, Technologies, and Applications	McGraw Hill Education (India)	July 2017

Reference books:

S.No	Authors	Title	Publishers	Year/Edition
1.	Dr C.S. Rayudu	E-Commerce E-Business	SHimalaya Publishing House	Reprint 2013
2.	Nidhi Dhawan	E-Commerce Concepts and Applications	International Book House Pvt Ltd	First Edition 2011
3.	Efraim Turban , David King, Jae Kyu Lee, Ting-Peng Liang, Deborrah C. Turban	Electronic Commerce	Springer	Eighth Edition 2015

WEBSITE REFERENCE

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

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

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

SEMESTER IV

Programme code:	BCA	**Programme Title**	Bachelor of Computer Applications	
Course code:	19U4CACP14	CORE 14 : WEB DESIGINING PRACTICAL	**Batch**	2019-2022
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 :	19U4CAAT04	Allied 4:Business Accounting	**Batch**	2019-2022
			Semester	V
Hrs/week	5		**Credits**	4

COURSE OBJECTIVES:

- ✓ To make the students understand the basic accounting concept and conventions.
- ✓ To enlighten the students on the importance of cost ascertainment reductionand 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 :	19U4SBST07	Skill Based Subject 7: Mathematics for Competitive Examinations IV	**Batch**	2019-2022
			Semester	IV
Hrs/week	2 Hours		**Credits**	1

COURSE OBJECTIVES

To enable the Students

- To make the students to know the concept of Problems of Interest andVenn 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											

UNIT I **(6Hrs)**

Simple Interest-Compound Interest -Logcal 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	7th Revised Edition - 2007

REFERENCE BOOK

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

WEBSITE REFERENCE

1.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:	19U4SBST08	Skill Based Subject 8: Communication Skills- IV	Batch	2019-2022
			Semester	IV
Hrs/ Week	2 Hrs		Credits	1

COURSE OBJECTIVES:

1. To know clearly the use of various symbols for pronunciating 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 prounuce 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

1. Resume Preparation
2. Report Writing
3. Minutes of a Meeting
4. Data Representation and Interpretation
5. Memos

UNIT- II : SOUNDS & SYMBOLS

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

TEXT BOOKS:

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher	Year of publication
1	Meenakshi Raman and Sangeeta Sharma	Communication Skills	Oxford University Press	2011
2	Shalini Aggarwal	Essential Communication Skills	Ane Books Pvt.Ltd. New Delhi	Ane's Students First edition 2009

REFERENCE BOOKS:

S. No	Author Name	Title of the Book	Publisher	Year of Publication
1	Course team, Bharathiyar University	Communication Skills a multi- skill course	Macmillan Publishers India LTD.	2009
2	Krishna Mohan	Developing Communication Skills	Laxmi Publication.	Second edition , 2009
3	Joyce Pereire	Techinical English – II	Vijay Nicole Imprints Pvt.Ltd.	

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

SEMESTER IV

Programme Code :	BCA	**Programme Title**	**Bachelor of Computer Applications**	
Course Code :	19U4NMET02	Non Major Elective 2 : Floriculture	**Batch**	2019-2022
			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 propogate 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/Boutonnières, 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	Year /edition
1	Dr.S.N.Suresh	Introduction to Floriculture	Teachers Publishing House	2017

REFERENCE BOOKS:

S. No	Author Name	Title of the Book	Publisher	Year /edition
1	Jacob Varghese Kunthara	Know your Garden Plants	H & C Books	2009
2	Dr. B. Hemlanaik	Production Technology of Ornamental Crops and Landscape Gardening	-	2013

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

SEMESTER IV

Programme Code :	12-ம் வகுப்பு வரை தமிழ் மொழிப்பாடம் பயிலாதவர்களுக்கு	**Programme Title**	**Bachelor of Computer Applications**	
Course Code :	19U4BTLT02	Non Credit Course 2: Basic Tamil-II : அடிப்படைத் தமிழ் #	**Batch**	2019-2022
			Semester	IV
Hrs/week	-		**Credits**	-

அகமதிப்பீட்டுத் தேர்வு மட்டும் நோக்கம்:

ee) ஆத்திச்சூடி, கொன்றை வேந்தன், திருக்குறள் போன்ற நூல்களில் கூறப்பட்டுள்ள நீதிகளைத் தெரிந்து கொள்ளுதல்.

ff) தடையில்லாமல், பிழையில்லாமல் படிப்பதற்கு எளிமையான கதைகளைப் படித்துப் பழகுதல்.

gg) தமிழ் இலக்கியங்களின் வரலாறு மற்றும் சிறப்புகளை அறிந்து கொள்ளச்செய்தல்.

hh) தமிழக மக்களின் வாழ்க்கை முறை உணவுமுறை, கலாச்சாரம், பண்பாடு பற்றி அறிந்துகொள்ளச் செய்தல்.

பாடப்பகுதி கற்றலின் வெளிப்பாடு (Course Outcome)

CO Number	CO Statement
CO1	ஆத்திச்சூடி, கொன்றை வேந்தன், திருக்குறள் போன்ற நூல்களின் வழி அக்கால மக்கள் பின்பற்றிய நீதிகளை அறிந்து அதன்படி வாழ்தல்.
CO2	எளிமையான நூல்களைப் படிப்பதன் மூலம், பிழையில்லாமல், தெளிவான உச்சரிப்போடு கதைகளைப் படித்துப் பழகுதல்.
CO3	தமிழ் இலக்கியங்களின் வரலாறு மற்றும் அதன் சிறப்புகளை அறிந்து கொள்ளுதல்.
CO4	பழங்கால மக்களின் வாழ்க்ககை முறை, பண்பாடு, கலாச்சாரம் ஆகியவற்றை அறிந்து கொள்ளுதல்.

நிரல் விளைவுகளைக் கொண்ட வரைபடம்

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

நீதி நூல்கள் : ஆத்திச்சூடி (முதல் 12) ‘‘அறம் செய விரும்பு’’, முதல் ‘‘ஔவியம்
- பேசேல்’’ வரை.

கொன்றை வேந்தன் - ‘‘அன்னையும் பிதாவும் முன்னறி தெய்வம்’’ முதல் ‘‘எண்ணும் எழுத்தும் கண்ணெனத்தகும்’’ வரை (7)

திருக்குறள் (5)
1. அகர முதல... (1)
2. செயற்கரிய... (26)
3. மனத்துக் கண்... (34)
4. கற்க கசடறக்... (391)
5. எப்பொருள் யார் யார்... (423)

எளிய நீதிக் கதைகள் - (தெனாலிராமன் கதைகள், பீர்பால் கதைகள், கிராமியக் கதைகள், ஈசாப் கதைகள்)

✓ தமிழ் இலக்கியங்கள் : வரலாறு – குறிப்பு – அறிமுகம்
எடுத்துக்காட்டு : குறள் பற்றி எளிய தொடர்களில் அறிமுகம்
தமிழகம் - உணவுமுறை, விழாக்கள், கலைகள் பற்றியக் குறிப்புகள்

	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**
6	மொத்த மதிப்பெண்கள்	**50**

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

SEMESTER IV

Programme Code :	12-ம் வகுப்பு வரை தமிழ் மொழிப்பாடம் பயின்றவர்களுக்கு	**Programme Title**	**Bachelor of Computer Applications**	
Course Code :	19U4ATLT02	Advanced Tamil-II : சிறப்புத் தமிழ்	**Batch**	2019-2022
			Semester	IV
Hrs/week	-		**Credits**	-

அகமதிப்பீட்டுத் தேர்வு மட்டும் நோக்கம்:

- இளங்கலை பட்ட வகுப்பில் தமிழ் - பயிலாதவர்களுக்கு, தமிழ் இலக்கியத்தின் சிறப்பினை எடுத்துக்கூறுதல்.
- திருக்குறளின் சிறப்பை அறியச் செய்தல்.
- சொற்களைப் பயன்படுத்தும் முறைகளையும், வாக்கியப் பிழைகள் ஏற்படுவதைத் தவிர்க்கும் முறைகளையும் அறியச் செய்தல்.
- பேச்சு வழக்குகளில் நாம் பயன்படுத்தும் சொற்களையும், சொற்களில் உள்ள பிழைகளையும், சரியாகப் பயன்படுத்தும் சொற்களையும் தெரிந்து கொள்ளச் செய்தல்.
- மாணவர்களின் கற்பனைத்திறன், படைப்பாற்றல் திறமை மேம்படுத்த பயிற்சி அளித்தல்.

பாடப்பகுதி கற்றலின் வெளிப்பாடு (Course Outcome)

CO Number	CO Statement
CO1	தமிழ் இலக்கியங்களின் சிறப்பினை உணரச் செய்தல்
CO2	திருக்குறளின் வாயிலாக மக்களின் வாழ்க்கைமுறைகளை அறிதல்
CO3	வாக்கியங்களை பிழையில்லாமல் சரியான முறையில் எழுதுதல்.
CO4	பேச்சு வழக்கில் நாம் பேசும் போது ஏற்படும் மரபுபிழைகளைத் தவிர்த்தல் மற்றும் தகுதியான வழக்குச் சொற்களைப் பயன்படுத்துதல்.
CO5	திறமையான மாணவர்களை ஊக்குவித்து படைப்பாளர்களாக, கவிஞர்களாக உருவாக்குதல்.

நிரல் விளைவுகளைக் கொண்ட வரைபடம்

CO /PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	-	-	-	-	✓	-	-	-	✓	-	✓	✓
CO2	-	-	-	-	✓	-	-	-	-	-	-	-
CO3	-	-	-	-	✓	-	-	-	-	-	-	-
CO4	-	-	-	-	✓	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	✓	-	✓	✓	-	-

பாடத்திட்டம்

கூறு – 1 திருக்குறள் - ஒழிபியல் முதல் 5 அதிகாரங்கள் மட்டும்.

கூறு – 2 உரைநடை : (கட்டுரை)

(இளைஞர்களின் ஒளிமயமான எதிர்காலத்திற்கு - கு.வெ. பாலசுப்பிரமணியம்)

கூறு – 3 எழுத்துப்பிழை நீக்க வழிகள் - பிழையும் திருத்தமும், சொற்களைச் சரியாகப் பயன்படுத்தும் பாங்கு – வினைச்சொற்கள் துணை வினைகள்

(எடுத்துக்காட்டுகளுடன் விளக்குதல்)

கூறு – 4 வழக்கறிதல் : மரபு வழக்கு - இயல்பு வழக்கு – தகுதி வழக்கு அறிதல்

கூறு – 5 படைப்பாற்றல் பயிற்சி – கட்டுரை எழுதுதல்.

	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 – IV

Programme Code:	**B.Sc IT**	**Programme Title**	**Bachelor of Science (Information Technology)**	
Course Code:	**19U4SSCT02**	**Self Study Course 2: Women Rights****	**Batch**	**2019-2022**
			Semester	**IV**
Hours/ Week	**-**		**Credits**	**1**

COURSE OBJECTIVES :

- To make the women students understand the legal systems, constitutional frame work and human rights in India.
- To understand and appreciate the women's claims to land and their right to property.
- To make the women students to know fully about the laws enacted to protect women against violence, harassement sexual abuse and the loopholes in practice.
- To give a knowledge to the students about the various acts enacted relating to marriage validation, Hindu widow re- marriage, dowry prohibition, imortal traffic prevention, and women development and empowerment.

COURSE OUTCOMES (CO):

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

CO Number	CO Statement
CO1	Explain clearly about the legal systems costitutional frame work and human rights.
CO2	Tell about their claims to land and right to property.
CO3	To explain about the various laws and acts enacted for protection of women from various kinds of violence and abuse, and for validating their marriage
CO4	Explain various acts available for women development and empowerment.

SYLLABUS

UNIT I

Laws, Legal Systems and Change

Definition - Constitutional law, CEDAW and International Human Rights – Laws and Norms – Laws and Social Context – Constitutional and Legal Framework.

UNIT II

Politics of land and gender in India

Introduction – Faces of Poverty – Land as Productive Resources – Locating Identities – Women's Claims to Land – Right to Property - Case Studies.

UNIT III

Women's Rights: Access to Justice

Introduction – Criminal Law – Crime Against Women – Domestic Violence – Dowry Related Harassment and Dowry Deaths – Molestation – Sexual Abuse and Rape – Loopholes in Practice – Law Enforcement Agency.

UNIT IV

Women's Rights

Violence Against Women – Domestic Violence - The Protection of Women from Domestic Violence Act, 2005 - The Marriage Validation Act, 1982 - The Hindu Widow Re-marriage Act, 1856 - The Dowry Prohibition Act, 1961

UNIT V

Special Women Welfare Laws

Sexual Harassment at Work Places – Rape and Indecent Representation – The Indecedent Representation (Prohibition) Act, 1986 - Immoral Trafficking – The Immoral Traffic (Prevention) Act, 1956 - Acts Enacted for Women Development and Empowerment -Role of Rape Crisis Centers.

REFERENCE BOOKS:

S. No	Author Name	Title of the Book	Publisher	Year /Edition
1	Nitya Rao	Good Women do not Inherit Land	Social Science Press and Orient Blackswan	2008
2	Monica Chawla	Gender Justice	Deep and Deep Publications Pvt Ltd.	2006
3	Preeti Mishra	Domestic Violence Against Women	Deep and Deep Publications Pvt Ltd.	2007
4	P.D.Kaushik	Women Rights	Bookwell Publication	2007
5	Aruna Goal	Violence Protective Measures for Women Development and Empowerment	Deep and Deep Publications Pvt	2004

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

SEMESTER – V

Programme Code :	BCA	**Programme Title**	Bachelor of Computer Applications	
Course Code :	19U5CACT15	**Core 15**. ASP.Net and C# Programming	**Batch**	2019-2022
			Semester	V
Hrs/week	5		**Credits**	3

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	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 - 12)**

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 - 12)**

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, and 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, Functions, Strings, File I/O.

TextBooks

Recent editions of the following books only are recommended

S. No	Author Name	Title of the Book	Publisher/Year
1.	Dave Marcer	ASP .NET – A Beginner's Guide	Third Edition, McGraw Hill Education India Private Limited.2002
2.	E. Balagurusamy	Programming in C# - A Primer	Third Edition, Tata McGraw Hill Pvt Ltd.2010

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.2010

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:	19U5CACT16	Title: Core 16: Relational Database Management System	**Batch**	2019-2022
Hrs/week:	5 Hrs		**Semester**	V
			Credits	3

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.

TextBooks

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

Reference Books

S.No.	Author Name	Title of the Book	Publishers
1	Majumdar & Bhattacharya	Database Management Systems	TMH
2	Bill Pribyl, Steven Feuerstein	Oracle pl/sql programming	O'Reilly Media, Inc.
3	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/..
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 :	19U5CACP17	Core 17 : ASP .NET AND C# - PRACTICAL	**Batch**	2019-2022
			Semester	V
Hrs/week	6		**Credits**	3

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 PROGRAM OUTCOMES

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

Syllabus

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

- www.codingfusion.com/Asp--Net-Practice-Questions
- www.corporatebpl.com/cistuploads/DotNetMEAssignment.pdf
- tusharkant.com/2013/04/asp-net-lab-manual-programs.html
- https://www.sanfoundry.com/csharp-programming-examples/
- 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 :	19U5CACP18	**CORE 18 : WEB TECHNOLOGY PRACTICAL**	**Batch**	2019 – 2022
			Semester	5
Hrs/week	6 Hours		**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 Program 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 simple page introducing yourself how old you are, what you do, what you like and dislike. Modify the introduction to include a bullet list of what you do and put list the 5 things you like most and dislike as numbered lists. Create another page about your favourite hobby, and link it to (and from) your main page. Centre something, and put a quote on one of your pages
2	Put an existing image on a web page. Create a table, use a heading and at least one use of row span/column span. Colour a page and some text within the page. Link to another site

3	Create a new file called index. html. * Put the normal HTML document structure tags in the file. * Give it a title. * At the bottom of the page (i.e. the last thing between the body tags) put the following: * A horizontal rule. A link to your email address (with your name between the tag); remember to put the link to your email address within address tags. * A line break. *The date. (I have this same structure at the bottom of this page). * Above this block (which is called the footer), put a title in heading tags. * Add some text describing yourself (you can split this into multiple headings and paragraphs if you wish
4	A) Write a script to create an array of 10 elements and display its contents. B) Write a function in Javascript that takes a string and looks at it character by character.
5	Create a simple calculator using form fields. Have two fields for number entry & one field for the result. Allow the user to be able to use plus, minus, multiply & divide.
6	Create a document and add a link to it. When the user moves the mouse over the link, it should load the linked document on it's own. (User is not required to click on the link).
7	Create a document, which opens a new window without a toolbar, address bar, or a status bar that unloads itself after one minute
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(), evaI(), Parselnt() 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 :	BCA	**Programme Title**	Bachelor of Computer Applications	
Course Code :	19U5NCCT01	**Non Credit Course 1 :** Aptitude and Soft Skills I	**Batch**	2019-2022
			Semester	V
Hrs/week	3 Hours		**Credits**	-

COURSE OBJECTIVES

To enable the Students

- ✓ 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 OUTCOME (CO)

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

CO NO	CO Statements
C01	Apply the inter personal and problem solving skills in the placement drive.
C02	To apply the behavioural skills required for promoting individual competence by implementing the principles of interpersonal communication and value – based living to meet the market expectations.
C03	Grasp the approaches and strategies to solve problems with speed and accuracy.
C04	Ability to reason critically by analyzing , elevating and extending arguments.
C05	Explain the concepts deal with graphs, tables, number sequence and texts.

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	-	✓	✓	✓	-	✓	✓	-	-	✓	-	✓
CO2	-	✓	✓	✓	-	✓	✓	-	-	✓	-	✓
CO3	-	✓	✓	✓	-	✓	✓	-	-	✓	-	✓
CO4	-	✓	✓	✓	-	✓	✓	-	-	✓	-	✓
CO5	-	✓	✓	✓	-	✓	✓	-	-	✓	-	✓

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 (P) Ltd
2	R. S. Aggarwal	Quantitative Aptitude for Competitive Examinations,	English, Paperback

REFERENCE BOOK

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

WEBSITE REFERENCE

1.http://www.indiabix.com
2.http://placement.freshersworld.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 :	19U5SSCT03	**Self Study Course 3 :** General Awareness	**Batch**	2019-2022
			Semester	V
Hrs/week	-		**Credits**	1

COURSE OBJECTIVES:

- It aims at testing the candidates' general awareness and knowledge of current affairs occurring around the world and in India.
- Develops a commitment to citizenship, through the ability to make informed decisions about public issues.
- Create an awareness of the achievements and perspectives of people of different nations and cultures, and of different races, genders and ethnicities.

COURSE OUTCOMES (CO):

On Successful Completion of the course the students will be able to:

CO Number	CO Statement
CO1	get familiar with general awareness of the environment around him and its apply it to the society.
CO2	reason logically, abstractly and understand numerical data comprehend arguments and positions that depend on numbers and statistics.
CO3	have a critical understanding of one's own values and of others, and of their role in making ethical choices.

MAPPING WITH PROGRAMME OUTCOMES

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

SYLLABUS

Unit I

- Verbal Aptitude
- History and Freedom Struggle

Unit II

- Abstract Reasoning
- Tamil and other Literature

Unit III

- General Science and Technology
- Computer

Unit IV

- Economics and Commerce
- Social Studies

Unit V

- Sports
- Current Affairs

TEXT BOOKS:

S. No	Author Name	Title of the Book	Publisher	Year /Edition
1	Compiled By Faculty, Department of English	General Awareness, Question Bank	KovaiKalaimagal College of Arts and Science, Coimbatore- 09	First Edition: 2021

Means of Curriculum Delivery : The students can study by themselves with the prescribed material.

SEMESTER VI

Programme Code :	BCA	**Programme Title**	**Bachelor of Computer Applications**	
Course Code :	19U6CACT19	Core 19: SOFTWARE TESTING	**Batch**	2019-2022
			Semester	VI
Hrs/week	5		**Credits**	3

Course Objectives

- To make the students to undertstand Software Testing principles.
- To discuss the distinctions between types of testing.
- To understand the essential charactersitics 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 statergies 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 Program Outcomes

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

Syllabus

UNIT I **Hours:13**

Software Development Life Cycle models: Phases of Software project – Quality, Quality Assurance, Quality control – Testing, Verification and Validation – Process Model to represent Different Phases - Life Cycle models. White-Box Testing: Static Testing – Structural Testing –Challenges in White-Box Testing.

UNIT II **Hours:12**

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

UNIT III **Hours:11**

System and Acceptance Testing: system Testing Overview – Why System testing is done? – Functional versus Non-functional Testing - Functional testing - Non-functional Testing – Acceptance Testing – Summary of Testing Phases.

UNIT IV **Hours:13**

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

UNIT V **Hours:11**

Test Planning, Management, Execution and Reporting: Test Planning – Test Management – Test Process – Test Reporting –Best Practices. Test Metrics and Measurements: Project Metrics – Progress Metrics – Productivity Metrics – Release Metrics.

TextBooks

Recent editions of the following books are only recommended

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

Reference Book s

S.NO	Author Name	Title of the Book	Publisher	Year
1.	William E Perry	Effective Methods of Software Testing	Wiley India	2015
2.	Renu Ranjani, Pradeep Oak	Software Testing	TMH	2007

Website References

1.*https://www.softwaretestingmaterial.com/software-testing/*

2.*https://www.guru99.com/software-testing-introduction-importance.html*

3.https://en.wikipedia.org/wiki/Software_testing

4.https://www.tutorialspoint.com/software_testing

5.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 :	19U6CACP20	Core 20: Software Testing-Practical	**Batch**	2019-2022
			Semester	VI
Hrs/week	5		**Credits**	3

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 -VI

Programme Code	BCA	**Programme Title**	Bachelor of Computer Applications	
Course Code	19U6CACP21	CORE 21 : PHP AND MY SQL - PRACTICAL	**Batch**	2019-2022
			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.

Mapping With Programme Outcomes

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

Program list

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 Books

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.	VikramVaswani	PHP: A Beginners guide	TataMcgraw Hill,2009.
2.	Lawpoint	Guide to PHP	LP Computer series 2007.
3.	Larry Ullman	PHP 6 and MySQL 5	Pearson Education,2000

Website References

1. **https://www.phpexercises.com**
2. **https://www.w3resource.com/php-exercises/**
3. **https://www.geeksforgeeks.org/php/**

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

SEMESTER VI

Programme Code :	BCA	**Programme Title**	Bachelor of Computer Applications	
Course Code :	19U6SBST04	Non Credit Course 4 : Aptitude and Soft Skills II	**Batch**	2019-2022
			Semester	VI
Hrs/week	3 Hrs.		**Credits**	-

COURSE OBJECTIVES

To enable the students

- ✓ 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, students should be able to

CO NO	**Statements**
C01	Apply the inter personal and problem solving skills in the placement drive.
C02	To apply the behavioural skills required for promoting individual competence by implementing the principles of interpersonal communication and value – based living to meet the market expectations.
C03	Grasp the approaches and strategies to solve problems with speed and accuracy.
C04	Ability to reason critically by analyzing , elevating and extending arguments.
C05	Explain the concepts deal with graphs, tables, number sequence and texts.

MAPPING WITH PROGRAMME OUTCOMES

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	-	✓	✓	✓	-	✓	✓	-	-	✓	-	✓
CO2	-	✓	✓	✓	-	✓	✓	-	-	✓	-	✓
CO3	-	✓	✓	✓	-	✓	✓	-	-	✓	-	✓
CO4	-	✓	✓	✓	-	✓	✓	-	-	✓	-	✓
CO5	-	✓	✓	✓	-	✓	✓	-	-	✓	-	✓

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 Book:

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 (P) 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.

WEBSITE REFERENCE

1.http://www.indiabix.com
2.http://placement.freshersworld.com

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

SEMESTER- VI

Programme Code :	BCA	**Programme Title**	Bachelor of Computer Applications	
Course Code :	**19U6CACV22**	**CORE 22: PROJECT VIVA-VOCE**	**Batch**	2019-2022
			Semester	VI
Hrs/week	6 Hrs.		**Credits**	4

Objective: To enable the students to apply practically in a specific area using any specific domain knowledge he/she posses 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

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:	**19U5CAET1A**	Elective 1: Software Engineering	**Batch**	2019-2021
			Semester	V
Hrs/week	4 Hrs		**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**	Bachelor of Computer Applications	
Course Code	**19U5CAET1B**	ELECTIVE 1: DATA MINING AND WAREHOUSING	**Batch**	2019-2022
			Semester	**V**
Hrs/week	4		**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 application.
CO3	To solve problems for multi-core or distributed, concurrent/Parallelenvironments.
CO4	To survey and use latest trends and advances in data mining and warehousing.

MAPPING WITH PROGRAMME OUTCOMES

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

Syllabus

UNIT I **(Hours: 10)**

Introduction –what Data mining – definition-KDD VS data mining DBMS VS Data mining-DM Techniques-Issues and challenges in data mining DM Application Area-DM Applications.

Association rules: Introduction –What is association rules-Methods for discovering association rules-A-priori algorithm-partition algorithm-Rapid association rule mining-incremental algorithm.

UNIT II **(Hours: 10)**

Classification: Introduction –statistical based algorithm-distance based algorithm-decision tree based algorithm-neural network based algorithm**.**

UNIT III **(Hours: 10)**

Clustering – Introduction-similarity and distance measures-outliers-hierarchical algorithms-Partition algorithms**.**

Decision Trees – What is Decision Tree – Tree construction principal – Best Split – Splitting Indices – Splitting Criteria.

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.	Margaret H.dunhum	Data mining	Pearson publisher
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
2	Jiwei Han, Michelien Kamber	"Data Mining Concepts and Techniques"	Morgan Kaufmann Publishers an Imprint of Elsevier

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**	Bachelor of Computer Applications	
Course Code	**19U5CAET1C**	Elective 1: Computer Graphics	**Batch**	2019-2022
			Semester	**V**
Hrs/week	4		**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 Viewng 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 BOOKS

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 Harringhton	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	19U5CAET2A	ELECTIVE 2: Embedded Systems	**Batch**	2019-2022
			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	**19U5CAET2B**	ELECTIVE 2: Client Server Technology	**Batch**	2019-2022
			Semester	**V**
Hrs/week	4		**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 - 8)**

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-8)**

Components of Client/Server Applications –The Client: Role of a Client –Client Services – Request for Service-RPC- Fax/Print services, Window services, Remote Boot Services, Remote services, Utility Services, Message services, Network services, Application services, Database services, Dynamic Data Exchange (DDE), Object Linking and Embedding (OLE), Common Object Request Broker Architecture (CORBA).

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

Components of Client/Server Applications –The Server: The Role of a Server –Server Functionality in Detail –The Server Operating system- Server functionality, Request processing, file services, Fax/Print/Image services, Database services, Communication services, Security services, Network Operating System, platforms, Server operating system, Distributed Computing Environment (DCE), System Application Architecture (SAA).

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

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

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

Components of Client/Server Applications–Software: Factors, Costs, Technology improvement, Platform migration, Common interface across platforms, Client/Server systems development technology, Project management, Architecture development, systems development environment, productivity measures, OOP. **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.

TEXT BOOK

Recent editions of the following books only are recommended

S.No	Author	Title of the Book	Edition and Publisher
1	Patrick N.Smith with Steve L.Guengerich	Client /Server Computing	Second Edition, SAMS Publishers
2	Robert Orfali, Dan Harkey, Jeri Edwards	The Essential Client/Server Survival Guide	Van Nostrand Reinhold,
3	Dewire and Dawanatravis	Client/ Server Computing	Tata Mcgraw Hill Pub

WEBSITE REFERENCES

1.https://en.wikipedia.org/wiki/Client%E2%80%93server_model
2.https://www.eukhost.com/blog/webhosting/client-server-technology/
3.https://www.lifewire.com/introduction-to-client-server-networks-817420
4.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**	Bachlor of Computer Applications	
Course Code	**19U5CAET2C**	**ELECTIVE 2: Web Technology And Its Applications**	**Batch**	2019-2022
			Semester	**V**
Hrs/week	4		**Credits**	3

COURSE OBJECTIVES

On completion of this course,

- A student will be able to develop a web application using java technologies.
- The students will gain the skills and project-based experience needed for entry into web application and development careers.

COURSE OUTCOMES (CO)

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

CO Number	CO Statement
CO1	Design a static webpage by applying HTML elements.
CO2	Apply CSS concepts for designing HTML web pages.
CO3	Develop DHTML pages by using JavaScript
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 1 **(HOURS: 12)**

Introduction to WWW : Protocols and programs, secure connections, application and development tools, the web browser, What is server, choices, setting up UNIX and Linux web servers, Logging users, dynamic IP.

UNIT II **(HOURS: 12)**

Web Design: Web site design principles, planning the site and navigation, Introduction to HTML : The development process, Html tags and simple HTML forms, web site structure ,Introduction to XHTML : XML, Move to XHTML, Meta tags, Character entities, frames and frame sets, inside browser

UNIT III **(HOURS: 12)**

Style sheets : Need for CSS, introduction to CSS, basic syntax and structure, using CSS, background images, colors and properties, manipulating texts, using fonts, borders and boxes, margins, padding lists, positioning using CSS, CSS2.

UNIT IV **(HOURS: 12)**

Javascript : Client side scripting, What is Javascript, How to develop Javascript, simple Javascript, variables, functions, conditions, loops and repetition

UNIT V **(HOURS: 12)**

XML : Introduction to XML, uses of XML, simple XML, XML key components, DTD and Schemas, Well formed, using XML with application.XML,

Text Books

S.NO	Author Name	Title of the Book	Publisher
1.	Craig D. Knuckles	Web Applications : Concepts and Real World Design	Wiley-India

Reference Books

Recent editions of the following books only are recommended

S.No.	Author Name	Title of the Book	Publisher
1.	Steven Holzner	”HTML Black Book”	Dremtech press.
2.	Kogent Learning Solutions Inc	Web Technologies, Black Book	Dreamtech Press

WEBSITE REFERENCES

1.*https://www.juet.ac.in/Department/CSE/WTechLab.php*
2.https://www.ntnu.edu/studies/courses/IT2805
3.vignan.ac.in/subjectspg/CS652.pdf
4.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**	Bachlor of Computer Applications	
Course Code	**19U6CAET3A**	Elective 3 : Artificial Intelligence and Expert System	**Batch**	2019-2022
			Semester	**V**
Hrs/week	4		**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

Understand the strengths and limitations of various state-space search algorithms and choose the appropriate algorithms for a problem.

Course Outcomes (CO)

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

CO Number	**CO Statement**
CO1	Explain 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 decision making.
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**	**PO11**	**PO12**
CO1	-	✓	✓	-	-	-	-	-	-
CO2	-	✓	✓	-	-	✓	✓	✓	✓
CO3	-	✓	✓	✓	-	✓	✓	✓	✓
CO4	-	✓	✓	✓	-	✓	✓	✓	✓
CO5	-	✓	✓	✓	-	✓	✓	✓	✓

SYLLABUS

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

Artificial Intelligence : The AI Problems, What is an AI Technique, Criteria for success, Problem Characteristics, Issues in the design of search programs, Components of AI, AI Evolution, Application areas of AI, History of AI, The Turing Test, The Revised Turing Test.

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

Knowledge Representation: Knowledge Representation Issues, Representations and Mappings, Approaches to Knowledge Representation, Issues in Knowledge Representation, The Frame problem, Procedural versus Declarative Knowledge, Matching, Control Knowledge.

UNIT -III **(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 -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 are only recommended

S. No	Author Name	Title of the Book	Publishers
1.	Elaine Rich,Kevin Knight, Shivashankar B Nair	Artificial Intelligence	Tata McGraw Hill , 3rd Edition
2.	Stuart Russell, Peter Norvig	Artificial Intelligence A Modern Approach	Tata McGraw Hill , 2nd Edition

Reference Books

S. No	Author Name	Title of the Book	Publishers
1.	V S Janakiraman K Sarukesi P Gopalakrishnan	Artificial Intelligence and Expert Systems	Macmillan India Ltd, 2001
2.	Elaine Rich, Kevin Knight,	Artificial Intelligence	Tata McGraw Hill , 2nd Edition

WEBSITE REFERENCES

1. *https://www.techopedia.com/definition/190/artificial-intelligence-ai*
2. *https://en.wikipedia.org/wiki/Artificial_intelligence*
3. *https://www.techopedia.com/definition/190/artificial-intelligence-ai*
4. *https://www.tutorialspoint.com/artificial_intelligence/artificial_intelligence_overview.h*
5. *https://www.britannica.com/technology/artificial-intelligence*

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

SEMESTER – V

Programme code:	BCA	Programme Title	Bachelor of Computer Application	
Course Code:	19U5CAET3B	ELECTIVE :3 MOBILE COMPUTING	Batch:	2019-2022
			Semester:	V
Hrs/Week:	4 Hrs		Credits:	3

COURSE OBJECTIVES

- Enable the students
- To introduce the mobile communication fundamentals.
- To enable the students to know about GSM and GPRS Technologies.
- To make the students learn and understand 3G, 4G and 5G Technologies.

COURSE OUTCOMES

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

CO Number	CO Statement
CO1	Explain the fundamentals of mobile computing.
CO2	Describe Mobile Computing through Telephony.
CO3	Enumerate the Emerging Technologies with GSM.
CO4	Elucidate on GPRS and WAP Technologies.
CO5	Determine CDMA and 3G Concepts and Implementation.

MAPPING WITH PROGRAMME OUTCOMES

CO/ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	-	✓	✓	-	-	✓	-	✓	-	-	✓	✓
CO2	-	✓	✓	-	-	✓	-	✓	-	-	✓	✓
CO3	-	✓	✓	-	-	✓	-	✓	-	-	✓	✓
CO4	-	✓	✓	-	-	✓	-	✓	-	-	✓	✓
CO5	-	✓	✓	-	-	✓	-	✓	-	-	✓	✓

SYLLABUS

UNIT I **Hours: 12**

Mobile Communication An Overview : Mobile Communication – Mobile Computing – Mobile Computing Architecture - Mobile Devices - Mobile System Networks – Data Dissemination – Mobility Management

UNIT II **Hours: 12**

Mobile Devices and Systems : Cellular Networks and Frequency reuse – Mobile Smart phones , Smart Mobiles and Systems – Hand held Pocket Computers - Handheld Devices - Smart Systems – Limitations of Mobile Devices – Automative Systems.

UNIT III **Hours:12**

GSM and Other 2G Architetures: GSM Service and System Architecture – Protocols of GSM – Localization – Call Handling – Handover.

UNIT IV **Hours: 12**

Wireless medium Access Control, CDMA,3G and 4G Communication : Modulation – Multiplexing – Controlling the Medium Access – Frequency Hopping Spread Spectrum – 4G Networks- Mobile Satelite Comminication Networks.

Databases and Mobile Computing : Data Organization – Databse Transactional Models- Query Processing – Data Recovery Process- Database Hoaring Techniques – Data Caching

UNIT V **Hours:12**

Mobile Wireless Short Range Network and Mobile Internet : Wireless Lan,802.11 Architeture,Protocol Layers – Wireless Application Protocol(WAP) - Wireless Application Protocol WAP 2.0 - Bluetooth enabled device Network.

Mobile Application Languages : Mobile Application Development – XML – JAVA – Java 2 Micro Edition – Java Card.

TEXT BOOKS

(Recent Edition of the following books are only recommended)

S.No	Authors	Title	Publishers
1.	Raj Kamal	Mobile Computing	Second Edition

REFERENCES BOOKS

S.No	Authors	Title	Publishers
1.	J.Schiller.	Mobile Communications,	Second Edition, Second Impression, Pearson Education Limited
2.	Asoke K Talukder , Roopa R Yavagal	MOBILE COMPUTING	TMH, 2005 , 2nd Edition.

WEBSITE REFERENCE

1. https://www.tutorialpoint.com/mobile computing.
2. https://www.mobilecomputing.com.ar
3. https://www.cebsworldwide.com/mobile computing.

Means Of Curriculum Delivery: Lecture, Group Discussion, Seminar, Assignment, Case studies and Google Classroom.

SEMESTER-VI

Programme code:	BCA	Programme Title	Bachelor of Computer Applications	
Course code:	**19U6CAET3C**	Elective 3 : Cloud Computing	**Batch**	2019-2022
Hrs/Week	4 Hrs		**Semester**	V
			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 History and Benifits in cloud computing
CO2	Analyse the Cloud Computing Architecture and Models
CO3	Identify the cloud data center and visualization technologies.
CO4	Analyse the visualization technology and security issues of cloud Computing
CO5	Evaluate various advanced cloud computing platforms

MAPPING WITH PROGRAMME OUTCOMES

CO /POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	-	✓	✓	-	-	-	-	-	-	-	-	-
CO2	-	✓	✓	-	-	✓	✓	-	-	✓	✓	✓
CO3	-	✓	✓	-	-	✓	✓	-	-	✓	✓	✓
CO4	-	✓	✓	-	-	✓	✓	-	-	✓	✓	✓
CO5	-	✓	✓	-	-	✓	✓	-	-	✓	✓	✓

SYLLABUS

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

Overview of the computing-History of Cloud Computing- Benifits of Cloud Computing-How to develop Cloud Infrastructure-Vendors of Cloud Computing-Elastic Computing-Social Networking-Enterprise Cloud Computing.

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

Cloud Computing Architecture: Introduction-Grid Framework Overview-Grid Architecture-Cloud Computing Architecture-Key Design aspects of Cloud Architecture, Cloud Services and Cloud Applications-Similarities and Difference between Grid and Cloud Computing-Characteristics of Cloud Computing. **Models of Cloud Computing** :Introduction-Cloud Service Models-Cloud Computing Sub Service Models-Cloud Deployment Models-Alternative Deployment Model.

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

Cloud Data Center: Introduction- Cloud Data Centre core elements-Storage Network Technologies and Virtualization-Object Based Storage Technology-Cloud Backup-Information Life Cycle Management-Cloud Analytics-Computing on Demand. **Virtualization Technologies** :Introduction-Virtualization Reference Model-Advantages of Virtualization- Server/Compute Virtualization-Need of Server/Compute Virtualization-Virtual Clusters-Advantages of Server/Compute Virtualization-Virtual Machine and Hardware Components-Types of Virtualization.

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

Virtualization Technology at Desktop and Application: Introduction-Understanding Desktop Virtualization -Drivers used in Virtualization -Techniques used for desktop virtualization-Components for Desktop Virtualization-Application Virtualization-Hardware Virtual Machine-Understanding Machine Imaging-Porting Applications-Virtual Machine Provisioning. **Security Issues of Cloud Computing**: Introduction-Security concerns of Cloud Computing-Cloud Information security objectives-Cloud security design principles-Security services-Secure Cloud Software Testing-Software Requirement Practices-Risk Issues-VM Security.

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

Cloud Computing Platforms-Advanced Technologies in Cloud Computing: Introduction-Cloud Computing Trends-Understanding Cloud Computing Tools-Security Cloud-Green Computing-Intercloud-Bigtable-Cloud Usage for Big Data Analytics and Internet of Things.

.

TEXT BOOKS

S. No	Author Name	Title of the Book	Publisher	Year/Edition
1.	Shailendra Singh	Cloud Computing	Oxford Univeristy Press	2018-First Edition

REFERENCE BOOKS

S. No	Author Name	Title of the Book	Publisher	Year/Edition
1.	Arshdeep Bahga	Cloud Computing: A Hands-On Approach	Paperback-Import,	9 Dec 2013.
2	Anthony T. Velte	Cloud Computing A Practical Approach	Tata Mcgraw Hill Education Private Limited	1st Edition 2009

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*

SEMESTER – VI

Programme code:	**BCA**	**Programme Title**	**Bachelor of Computer Applications**	
Course Code:	**19U6CAET4A**	ELECTIVE 4: COMPILER DESIGN	**Batch**	2019-2022
			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

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

SYLLABUS

UNIT I **(Hours – 15)**

LEXICAL ANALYSIS : Introduction to Compiling- Compilers-Analysis of the source program-The phases- Cousins-The grouping of phases-Compiler construction tools. A Simple One-Pass Compiler. The role of the lexical analyzer- Input buffering-Specification of tokens-Recognition of tokens-A language for specifying lexical analyzer.

UNIT II **(Hours – 12)**

SYNTAX ANALYSIS AND RUN-TIME ENVIRONMENTS: Syntax Analysis- The role of the parser-Context-free grammars-Writing a grammar-Top- down parsing-Bottom-up Parsing-LR parsers-Constructing an SLR(1) parsing table. Type Checking- Type Systems-Specification of a simple type checker- Equivalence of type expressions- Type Conversions. Run-Time Environments-Source language issues-Storage organization-Storage-allocation strategies – Parameter passing – Symbol tables.

UNIT III **(Hours – 9)**

INTERMEDIATE CODE GENERATION : Intermediate languages-Declarations-Assignment statements - Boolean expressions- Case statements- Backpatching-Procedure calls.

UNIT IV **(Hours – 12)**

CODE GENERATION: Issues in the design of a code generator- The target machine-Run-time storage management-Basic blocks and flow graphs- Next-use information-A simple code generator-Register allocation and assignment-The dag representation of basic blocks - Generating code from dags.

.

UNIT V **(Hours – 12)**

CODE OPTIMIZATION :Introduction-The principle sources of optimization-Peephole optimization- Optimization of basic blocks-Loops in flow graphs- Introduction to global data-flow analysis-Code improving transformations.

TEXT BOOKS

Recent editions of the following books are only recommended

S. No	Author Name	Title of the Book	Publisher
1.	Alfred V. Aho, Jeffrey D.Ullman,	"Compilers- Principles, Techniques, and Tools"	Pearson Education Asia, 2007

REFERENCE BOOKS

S. No	Author Name	Title of the Book	Publisher
1.	David Galles,	Modern Compiler Design	Pearson Education Asia, 2007.
2.	Steven S. Muchnick,	Advanced Compiler Design & Implementation	Morgan Kaufmann Pulishers, 2000
3.	C. N. Fisher and R. J. LeBlanc	Crafting a Compiler with C	Pearson Education, 2000

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:	**19U6CAET4B**	ELECTIVE 4: MOBILE OPERATING SYSTEM	Batch	2019-2022
			Semester	VI
Hrs/Week:	4 Hrs		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/ POs	**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)*
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	**19U6CAET4C**	Elective 4: PHP & MySQL	Batch	2019-2022
			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

COs/ 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 anddirectories: 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 withdirectories. 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**

Extra Credit Course

Programme Code :	ALL UG	**Programme Title**		
Course Code :	**2019ECC001**	Title : சுற்றுலா வளர்ச்சி	**Batch**	2019-2022
			Credits	2

பாடத்திட்டம் :

அலகு I

1. சுற்றுலா □ ஒரு விளக்கம்
2. உலக நாடுகளில் சுற்றுலா வளர்ச்சி
3. பாரதத்தில் சுற்றுலா வளர்ச்சி

அலகு II

1. தமிழ்நாட்டில் சுற்றுலா வளர்ச்சி
2. பன்னாட்டு பலவகைப் பயணிகள்
3. சுற்றுலாவின் சமுக பொருளாதார விளைவுகள்

அலகு III

1. சுற்றுலாப் பயணிகள் பற்றிய புள்ளி விவரங்கள்
2. சுற்றுலாவைத் திட்டமிடுதலும் மேம்படுத்தலும்
3. சுற்றுலா விடுதிகள்

அலகு IV

1. சுற்றுலாப் பயணிகளின் பல்வேறு போக்குவரத்துகள்
2. சுற்றுலாக் கழகங்கள்
3. சுற்றுலாப் பயண முகவர்கள்

அலகு V

1. சுற்றுலாவின் வணிகச் சந்தைகள்
2. சுற்றுலாவின் வழிகாட்டிகள்
3. தமிழ் இலக்கியத்தில் பயணநூல்கள்

பாடநூல் : சுற்றுலா வளர்ச்சி

ஆசிரியர் - வெ. கிருட்டிணசாமி

மணிவாசகர் பதிப்பகம்

சென்னை, ஆகஸ்டு – 2009

Extra Credit Course

Programme Code :	ALL UG	**Programme Title**		
Course Code :	**2019ECC002**	Title : இதழியல் கலை	**Batch**	2019-2022
			Credits	2

பாடத்திட்டம் :

அலகு I இதழியல் - இயல்பும் பரப்பும்

1. இதழியல் விளக்கம்.
2. இதழ்களின் பணிகள், கடமைகள், பொறுப்புகள்.
3. இதழ்கள் வகைகளும் இயல்புகளும்.
4. மக்களாட்சியில் இதழியல்.
5. இதழ்களின் சுதந்திரம்.
6. இதழியல் நடத்தையறக் கட்டளைகள்.
7. இதழியல் தொழில் வாய்ப்புகள்.

அலகு II இதழியல் தோற்றமும் வளர்ச்சியும்

1. இதழியல் வளர்ச்சி
2. தமிழகத்தில் இதழியல் வளர்ச்சி
3. பத்திரிக்கைச் சட்டங்கள்
4. பத்திரிக்கை மன்றம்

அலகு III இதழ்களின் அமைப்பு முறை

1. இதழ்கள் தொடங்குவதற்கான வழிமுறைகள்
2. செய்தித்தாள் நிர்வாக அமைப்பு

அலகு IV செய்திகள், சேகரித்தல், எழுதுதல்

1. செய்தியாளர்
2. செய்தி
3. செய்தியின் உள்ளடக்கங்கள்
4. செய்தி திரட்டுதல்
5. செய்தி நிறுவனங்கள்
6. பேட்டி
7. குற்றச் செய்திள்
8. பல்வேறு வகையான செய்திகள்
9. செய்திகளும் சிறப்புத்தனி இயல்புகளும்
10. படங்களும் இதழ்களும்

அலகு V செப்பனிடுதல் (பதிப்பித்தல்)

1. செய்திகளைச் செப்பனிடுதல் - நுட்பங்கள்
2. ஆசிரியர்
3. செய்தி ஆசிரியர்
4. துணை ஆசிரியர்
5. செய்தியின் கட்டமைப்பு
6. பக்க வடிவமைப்பு
7. அச்சுப்படி திருத்துதல்
8. இதழியல் கலைச் சொற்கள்

பாடநூல் : இதழியல் கலை

ஆசிரியர் : டாக்டர் மா.பா. குருசாமி

ஸ்ரீ சக்தி ∴பைன் ஆர்ட்ஸ், சிவகாசி, ஜனவரி □ 2009.

Extra Credit Course

Programme Code :	ALL UG	**Programme Title**		
Course Code :	**2019ECC003**	Title : இதழியல் கலை	**Batch**	2019-2022
			Credits	2

பாடத்திட்டம் :

அலகு I

நாட்டுப்புற இயல் என்றால் என்ன?

நாட்டுப்புற இயலின் வரலாறு

நாட்டுப்புற அயல் கல்வி □ ஒரு விளக்கம்

அலகு II

நாட்டுப்புற ஆடல்கள்

நாட்டுப்புற கூத்துகள்

நாட்டுப்புற கைவினைக் கலைகள்

அலகு III

நாட்டுப்புற விளையாடல்கள்

நாட்டுப்புற மருத்துவம்

நாட்டுப்புற நம்பிக்கைகள்

அலகு IV

நாட்டுப்புற வழிபாடுகள்

நாட்டுப்புறக் கதைகள்

நாட்டுப்புறப் பாடல்கள்

கதைப்பாடல்கள

அலகு V

விடுகதைகள்

பழமொழிகள்

புராணங்கள்

பாடநூல் : நாட்டுப்புறவியல்

ஆசிரியர் : சு. கண்முக சுந்தரம்

காவ்யா பதிப்பகம்,

ஏப்ரல் - 2017.

Extra Credit Course

Programme Code :	ALL UG	**Programme Title**		
Course Code :	**2019ECC004**	Title : கணிப்பொறியில் தமிழ்	**Batch**	2019-2022
			Credits	2

பாடத்திட்டம் :

அலகு I

கணிப்பொறியில் தமிழ்

விசைப்பலகை அமைப்பு முறைகள்

எழுத்துருவின் வகைகள்

அலகு II

தமிழ் எழுத்துருக்கள்

எழுத்துரு / விசைப்பலகை இயக்கியை நிறுவுதல்

அலகு III

தமிழில் தட்டச்சு செய்யும் முறை

சிக்கல்களும் தீர்வுகளும்

அலகு IV

இணையத்தில் தமிழ்

தமிழ் இணையப் பல்கலைக்கழகம்

மின்னஞ்சல்

அலகு V

யூனிக்கோடு

விண்டோஸ் எக்ஸ்பீயில் தமிழ்

தமிழ் இணையதளங்கள்

ஆசிரியர் : த. பிரகாஷ்

பெரிகாம் நூல் வெளியீடு மற்றும் விற்பனை

ஆகஸ்டு □ 2007.

Extra Credit Course

Programme Code :	ALL UG	**Programme Title**		
Course Code :	**2019ECC005**	Title : தமிழக வரலாறும் மக்கள் பண்பாடும்	**Batch**	2019-2022
			Semester	-
Hrs/week	-		**Credits**	2

பாடத்திட்டம் :

அலகு I

1. தமிழக வரலாற்றுக்கான அடிப்படை ஆதாரங்கள்
2. தமிழகத்தின் இயற்கை அமைப்புகள்.
3. வரலாற்றுக் காலத்துக்கு முந்திய தமிழகம்.
4. சிந்து வெளி அகழ்வாராய்ச்சி.

அலகு II

1. பண்டைய தமிழரின் அயல்நாட்டு தொடர்புகள்
2. தமிழ் வளர்த்த சங்கம்
3. சங்க இலக்கியம்
4. பண்டைய தமிழரின் வாழ்க்கை

அலகு III

1. களப்பிரர்கள்
2. பல்லவர்கள்
3. தமிழகத்தில் நான்காம் நூற்றாண்டு முதல் ஒன்பதாம் நூற்றாண்டு வரையில் சமூக நிலை.

அலகு IV

1. சோழப் பேரரசின் தோற்றம்.
2. சோழப் பேரரசின் வளர்ச்சியும் வீழ்ச்சியும்.
3. சோழர் காலத்தில் தமிழரின் சமுதாயம்.
4. பாண்டியரின் ஏற்றமும் வீழ்ச்சியும்.

அலகு V

1. மதுரை நாயக்கர்கள்.
2. தமிழகத்தில் 13 முதல் 18 ஆம் நூற்றாண்டு வரை சமூகநிலை
3. ஐரோப்பியரின் வரவு.
4. 19 ஆம் நூற்றாண்டின் அரசியலும் தமிழகத்தின் சமூக நிலையும்.
5. 20 ஆம் நூற்றாண்டில் தமிழகம் மேற்கோள் நூல்கள்.

பாடநூல் : தமிழக வரலாறும் மக்கள் பண்பாடும்

ஆசிரியர் - கே. கே. பிள்ளை.

உலகத் தமிழாராய்ச்சி நிறுவனம். செப்டம்பர் - 2016.

Extra Credit Course

Programme Code :	ALL UG	**Programme Title**		
Course Code :	**2019ECC006**	Title : தமிழ் இலக்கிய வரலாறு	**Batch**	2019-2022
			Semester	-
Hrs/week	-		**Credits**	2

பாடத்திட்டம் :

அலகு I

1. காலப்போக்கில் கன்னித்தமிழ் ஒரு கண்ணோட்டம்
2. தமிழ்ச்சங்கம் 3. அகத்தியர்
4. தொல்காப்பியர் 5. சங்க இலக்கியம்
6. பதினெண் கீழ்கணக்கு

அலகு II

1. இரட்டைக் காப்பியங்கள் 2. நாயன்மார்கள் 3. ஆழ்வார்கள்
4. சமயமும் தமிழும் (பௌத்தம், சமணம், சைவம், வைணவம்)
5. கன்னித் தமிழ் காப்பிய வளர்ச்சி 6. புராணங்களும் பிறவும்.

அலகு III

1. சிற்றிலக்கியங்கள். 2. பதினெண் சித்தர்கள். 3. உரையாசிரியர்கள்.
4. பிற்காலப் புலவர்கள். 5. கிருத்துவமும் தமிழும். 6. இஸ்லாமியமும் இன்தமிழும்.

அலகு IV

1. சோழப் பேரரசின் வளர்ச்சியும் வீழ்ச்சியும். 2. கவிஞர் பெருமக்கள்.
3. புதக்கவிதை. 4. உரைநடை இலக்கியம், சிறுகதை இலக்கியம்.

அலகு V

1. தமிழ் நாவல் இலக்கியம். 2. தாளிகைகள்.
3. இசைத்தமிழ் வரலாறு. 4. நாடகத் தமிழ் வரலாறு
5. 20 ஆம் நூற்றாண்டில் இன்தமிழ் வளர்ச்சி. 6. பிற நாடுகளில் பைந்தமிழ்

பாடநூல் : தமிழ் இலக்கிய வரலாறு

ஆசிரியர் : பேராசிரியர் மது.சா. விமலானந்தம்
முல்லைநிலையம்,
சென்னை, 2018

EXTRA CREDIT COURSE

NEW MEDIA

Course Code: 2018ECC007 **No. of Credits: 2**

Course Objectives :

To enable the students to understand the new age media sources.

UNIT I:

Spread of Internet; Salient features and advantage over traditional media;
History and spread of internet in India, reach and problem of access; Internet and Knowledge Society; Convergence and Multi-media: Print, radio, TV, internet and mobile.

UNIT II:

Online journalism; Earlier websites of newspapers, E-books and E-publishing
Status of online journalism today.

UNIT III:

Digital storytelling: Tools of multimedia journalists; Learn to report, write and produce in a manner that is appropriate for online media; Feature writing for online media: Story idea, development and news updates.

UNIT IV:

Open source journalism: Responding to the audience, Annotative reporting; Citizen Journalists, Problem of verification, accuracy and fairness.

UNIT V:

Use of blogs, tweets, etc. for story generation and development; Protecting copyright, Exploring Cyberspace: Individual Blog; Group weblog

TEXT BOOKS:

Recent editions of the following books only are recommended

1.Jagdish Chakravarthy, Net, Media and the Mass Communication,Authors press, New Delhi,2004.

2. Gopal Bhargava ,Mass Media and Information Revolution,Isha Books, New Delhi ,2004.

REFERENCE BOOKS:

1.Nath, Shyam ,Assessing the State of Web Journalism ,Authors Press, New Delhi,2002.

2.Narayana Menon, The Communication Revolution.National Book Trust ,1976.

EXTRA CREDIT COURSE

PROOFREADING AND COPYEDITING

Course Code: 2019ECC008 **No. of Credits: 2**

Course Objectives

To enable the students to proofread and edit texts.

UNIT I:

Introduction to Proofreading and Copyediting, The use of style sheets and style guides in Proofreading and copyediting, finding the appropriate style guides, how to create and use a style sheet.

UNIT II:

Proofreaders' marks and how they are used to copyedit and proofread, your job as a proofreader.

UNIT III:

How to proofread, Proofreading practice.

UNIT IV:

The job of copyediting, how to copyediting, copyediting practice.

UNIT V:

How to copyedit or proofread one's own Work, copyediting or proofreading as a career.

TEXT BOOKS:

Recent editions of the following books only are recommended

1. Laura Anderson ,Proofreading Handbook ,McGraw-Hill ,2nd Edition2006.
2. Elsie Myers Stainton, The Fine Art of Copyediting ,Columbia University Press ,2002.

REFERENCE BOOKS:

1. Suzanne Gilad ,Copyediting and Proofreading For Dummies ,1st Edition 2011
2. Peter Ginna ,What Editors Do: The Art, Craft, and Business of Book Editing (Chicago Guides to Writing, Editing, and Publishing) ,University of Chicago Press ,2017

EXTRA CREDIT COURSE

PERSONALITY DEVELOPMENT

Course Code: 2019ECC009 **No. of Credits: 2**

Course Objectives :

To make students groom their personality and prove themselves as good Samaritans of the society

UNIT I:

Introduction to Personality Development ; The concept of personality, Theories of Freud & Erickson, Significance of personality development; The concept of success and failure: What is success-Hurdles, What is failure- Causes of failure.

UNIT II:

Attitude & Motivation, Factors affecting attitudes-Positive attitude, Advantages, Negative attitude Disadvantages - Concept of motivation - Significance – Internal and external motives -Importance of self- motivation-Factors leading to de-motivation

UNIT III:

Term self-esteem, Symptoms, Advantages - Do's and Don'ts to develop positive self-esteem, Low selfesteem, Symptoms - Personality having low self esteem - Positive and negative self esteem. Interpersonal Relationships.

UNIT IV:

Other Aspects of Personality Development, Body language - Problem-solving - Conflict and Stress Management - Decision-making skills -Leadership and qualities of a successful leader – Character building -Team-work – Time management - Work ethics –Good manners and etiquette.

UNIT V:

Employability Quotient , Resume building- The art of participating in Group Discussion – Facing the Personal (HR & Technical), Interview, Psychometric Analysis, Mock Interview Sessions.

TEXT BOOKS:

Recent editions of the following books only are recommended

1.E.B. Hurlock ,Personality Development ,Tata McGraw Hill ,28th Reprint. New Delhi: 2006

2. Stephen P. Robbins and Timothy A. Judge ,Organizational Behavior ,Prentice Hall. 16th Edition, 2014.

REFERENCE BOOKS:

1. Sudhir Andrews , How to Succeed at Interviews, New Delhi.Tata McGraw-Hill ,21st (rep.) 1988

2. Heller, Robert., Effective leadership, Essential Manager series. Dk Publishing,2002.

EXTRA CREDIT COURSE

TECHNICAL WRITING

Course Code: 2019ECC010 **No. of Credits: 2**

Course Objectives :

- To enable the students to practice professional writing.

UNIT I:
Technical Writing Basics, Technical Communication: Definition & Purpose.

UNIT II:
Characteristics of Technical Communication, Audience, Centered Communication.

UNIT III:
Legal and Ethical Communication: Description & Importance, Implicit and Explicit Rules of Communication: Definitions & Examples.

UNIT IV:
Types of Technical Documents.

UNIT V:
The Technical Writing Process: Prewriting, Writing & Rewriting, Spread of Internet; Salient features and advantage over traditional media.

TEXT BOOKS:

Recent editions of the following books only are recommended

1. Kieran Morgan , Technical Writing Process: The simple, five-step guide that anyone can use to create technical documents such as user guides, manuals, and procedures , Better on paper publications ,2015

2. Thomas Arthur Rickard ,A Guide to Technical Writing ,Bibliolife, 2008.

REFERENCE BOOKS:

1. Gerald J. Alred, Charles T. Brusaw & Walter E. Oliu , Handbook of Technical Writing ,Bedford/St. Martin's ,2008.

2. Mike Markel, Technical Communication, Palgrave MacMillan ,2012

EXTRA CREDIT COURSE

AN INTRODUCTION TO PSYCHOLOGY

Course Code: 2019ECC011 **No. of Credits: 2**

Course Objectives :

- To enable the students to articulate how psychological research adheres to ethical and scientific principles, and communicate the difference between personal views and scientific evidence in understanding behavior.

UNIT I:
Introducing Psychology, Psychological Science, Brain, Body and Behavior.
UNIT II:
Sensing and Perceiving Remembering and Judging, Intelligence and Language.
UNIT III:
States of Consciousness, Growing and Developing, Learning.
UNIT IV:
Emotions and Motivation, Personality
UNIT V:
Defining Psychological Disorders, Treating Psychological Disorders, Psychology in Our Social Lives.

TEXT BOOKS:

Recent editions of the following books only are recommended

1. David Myer , David Myer's Psychology , Worth Publishers ,(7th ed.) 2004.
2. Daniel Kahneman, Thinking Fast and Slow , Farrar , Straus and Giroux , 2011

REFERENCE BOOKS:

1. Roger R. Hock, Forty Studies That Changed Psychology , Prentice hall ,2008.

2. Robert Feldman, Understanding psychology, McGraw Hill Education, 2017

3.Thomas E. Ludwig , Psychsims ,WortSh Publishers ,2004

EXTRA CREDIT COURSE

ASTRONOMY

Course Code: 2019ECC012 **No. of Credits: 2**

Course Objectives:

- On successful completion of this course the students should gain knowledge about Astronomy.

UNIT I:

General description of the Solar system. Comets and meteorites – Spherical trigonometry.

UNIT II:

Celestial sphere – Celestial co – ordinates – Diurnal motion – Variation in length of the day.

UNIT III:

Dip – Twilight – Geocentric parallex.

UNIT IV:

Refration – Tangent formula – Cassinis formula.

UNIT V:

Kepler's laws – Relation between true eccentric and mean anamolies.

TEXT BOOK

Recent editions of the following books only are recommended

"ASTRONOMY" by S.Kumaravelu and Susheela Kumaravelu.

EXTRA CREDIT COURSE

FUZZY MATHEMATICS

Course Code: 2019ECC013 **No. of Credits: 2**

Course Objective:

- To know the basic concepts of fuzzy stes and its characteristics.
- To understand the concept of various operations on fuzzy sets.
- To learn the concept of fuzzy relations and its applications.

UNIT 1

From classcal sets to Fuzzy sets: Introduction-Crisp Sets: An over vieww-Fuzzy set: Basic types-Fuzzy sets: Basic Concepts-Characteristics and significance of the paradigm Shift

UNIT 2

Fuzzy sets of versus crisp sets: Addtional properties of □- Cuts- Representations of fuzzy sets- Extension Principle of Fuzzy sets.

UNIT 3

Operations on fuzzy sets: Types of Operations-Fuzzy complements-Fuzzy Intersections: t-Norms- Fuzzy unions: t-conorms

UNIT 4

Fuzzy Arithmetic: Fzzy Numbers-Lnguistic Variables-Arithmetic Operations on intervals

UNIT 5

Fuzzy Relations: Crisp versus Fuzzy Relations-Projections and Cylndric Extensions-Binary Fuzzy Relations-Binary relations on a single set-Fuzzy Equvalence Relations-Fuzzy Compatibility Relations.

TEXT BOOK:

Fuzzy Sets Uncertanity and Information, George, J.Klir and Tina A, Folger, Printice Hall of India Pvt Ltd, New Delh, 2006

UNIT 1: Page no: 1-30

UNIT 2: Page no: 35-48

UNIT 3: Page no: 50-96

UNIT 4: Page no: 97-102

UNIT 5: Page no: 119-135

Reference Book:

1. Fuzzy Logic Intellegence, Control and information, John Yuan, Reza Langari, Pearson Education, New Delh, 1999
2. Fuzzy logc and Neural Networks, M.Amirthavalli, Scitech Publications Pvt Ltd, Chennai and Hydrabad, 2007
3. Fuzzy Lgic with Engineering Applications, Timothy , Jo Ross, McGraw-Hill INC, New York, 1996.

EXTRA CREDIT COURSE

OPERATION RESEARCH

Course Code: 2019ECC014 **No. of Credit :2**

Course Objectives:

- To understand the basic concepts of Operations Research and Solving LPP
- To solve Transportation and Assignment problems
- To understand the concept of Game theory , Queuing theory PERT and CPM.

UNIT I

Introduction to Operations Research - Meaning - Scope – Models - Limitation. Linear Programming - Formulation – Graphical method only.

UNIT II

Transportation (Non- degenerate only) - Assignment problems - Problems.

UNIT III

CPM - Principles - Construction of Network for projects – Types of Floats – Slack- crash programme.

UNIT IV

PERT - Time scale analysis - critical path - probability of completion of project - Advantages and Limitations.

UNIT V

Game Theory: Graphical Solution – mx2 and 2xn type. Solving game by Dominance property fundamentals - problems . Replacement problem – Replacement of equipment that deteriorates gradually (value of money does not change with time).

Text Book:

Recent editions of the following books only are recommended

Prof. V. Sundaresan., K.S. Ganapathy Subaramanian ., K.Ganesan: Resource Management Techniques (Operations Research) A.R.Publications- 2002

Unit I : Chapter 1 – Section 1.1,1.2,1.4,1.9, Chapter 2 – Section 2.1- 2.5
Unit II : Chapter 7 – Section 7.1- 7.2, Chapter 8 – Section 8.1 ,8.2,8.4,8.5
Unit III : Chapter 15 – Section 15.1,15.2,15.5,15.8
Unit IV : Chapter 15 – Section 15.6
Unit V : Chapter 16 – Section 16.6, 16.7, Chapter 11 – Section 11.1, 11.2

ReferenceBook :

1. Kanti Swarup, Gupta P.K, Man Mohan : Operations Research, Sultan Chand & Sons- 1997
2. P.R. Vittal and V.Malini : Operations Research, Margham Publications -2011.
3.P.K.Gupta.,ManMohan: Problems in Operations Research,Sultan Chand &sons-2004
4.V.K.Kapoor: Operations research, Sultan Chand&sons-2007

EXTRA CREDIT COURSE

MATHEMATICS FOR PROFESSIONAL COURSES

Course Code: 2019ECC015 **No. of Credits: 2**

COURSE 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 BOOKS:

Recent editions of the following books only are recommended

1. Discrete Mathematics, B.S. Vatssa, Wishwa Prakashan Private Limited, 3rd Edition.
2. Business Mathematicsc and Statistics, P.A. Navanitham, Jai Publisher, June 2004.

Reference Book:

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

MULTIMEDIA AND ITS APPLICATIONS

Course Code: 2019ECC016 **No.of Credits: 2**

Course 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

MANAGEMENT INFORMATION SYSTEM

Course Code: 2019ECC017 **No. of Credits: 2**

Course 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:

Recent editions of the following books only are recommended

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

THEORY OF COMPUTATION

Course Code: 2019ECC018 **No. of Credits: 2**

CourseObjectives:

- 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-Defininig Language-Recursive Definition of Language-Arithmetic Expression-Grammar-Classification of Grammar and Language-Language and their Relation-Operations On Language-Chomsky Hierrachy.

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 Stock, From Empty Stock to Final State and Vice versa-Deterministic Pushdown Automata and Non deterministic Pushdown Automata-Language-Problems.

TEXT BOOKS:

Recent editions of the following books only are recommended

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:

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

OOPS WITH JAVA PROGRAMMING

Course Code: 2019ECC019 **No. of Credits: 2**

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 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 Persistance – 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 Expresions.

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:

Recent editions of the following books only are recommended

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.

EXTRA CREDIT COURSE

PROGRAMMING IN C

Course Code: 2019ECC020 **No. of Credits: 2**

Course 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. Funtions: 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:

Recent editions of the following books only are recommended

1. E. Balagurusamy: **"**Programming in ANSI C" **,** Tata Mc. Graw Hill, 5th Edition (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 .

EXTRA CREDIT COURSE

INTERNET OF THINGS

Course Code: 2019ECC021 **No. of Credits: 2**

Course Objectives:

- To get the vision and introduction to IoT .
- To Understand IoT Market perspective, Data and Knowledge Management and use of devices in IoT Technology.
- To understand state of the art IoT architecture,real world IoT deisgn constraints,industrial automation and commercial building automation in IoT.

UNIT I

Introduction- Concepts behind the Internet of Things- The IoT Paradigm- Smart Objects- Creative Thinking Techniques – Modifications- Combination Scenarios- Breaking Assumptions- Solving Problems.

UNIT II

M2M to IoT – A Market Perspective– Introduction, Some Definitions, M2M Value Chains, IoT Value Chains, An emerging industrial structure for IoT, The international driven global value chain and global information monopolies.

UNIT III

M2M and IoT Technology Fundamentals- Devices and gateways, Local and wide area networking, Data management, Business processes in IoT, Everything as a Service(XaaS), M2M and IoT Analytics, Knowledge Management Introduction, Technical Design constraints-hardware is popular again.

UNIT IV

Introduction, State of the art, **Architecture Reference Model-** Introduction, Reference Model and architecture, IoT reference Model-**IoT Reference Architecture-** Introduction, Functional View, Information View, Deployment and Operational View, Other Relevant architectural views. **Real-World Design Constraints.**

UNIT V

Service-oriented architecture-based device integration, SOCRADES: realizing the enterprise integrated Web of Things, IMC-AESOP: from the Web of Things to the Cloud of Things, Commercial Building Automation- Introduction, Case study: phase one-commercial building automation today.

TEXT BOOKS:

Recent editions of the following books only are recommended

1. Jan Holler, Vlasios Tsiatsis, Catherine Mulligan, Stefan Avesand, Stamatis Karnouskos, David Boyle: **"From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence", First** Edition, Academic Press, 2014.

REFERENCE BOOKS:

1. Vijay Madisetti and Arshdeep Bahga: **"Internet of Things (A Hands-on-Approach)", First** Edition, VPT, 2014.

2. Francis daCosta: "Rethinking the Internet of Things: A Scalable Approach to Connecting Everything", First Edition, Apress Publications, 2013.

3.Hakima chaouchi,"The Internet Of Things Connecting Objects,2010.

EXTRA CREDIT COURSE

WEB TECHNOLOGY AND ITS APPLICATIONS

CourseCode: 2019ECC022 **No. of Credits: 2**

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.

UNIT I

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

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

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

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

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 BOOK:

Recent editions of the following books only are recommended

1. Achyut Godbole and Atul Kahate :"Web Technologies – TCP / IP, Web / Java Programming and Cloud Computing", Third Edition, McGraw Hill Education India Private Limited.

REFERENCE BOOKS:

1. Behrouz A. Forouzan : "TCP / IP – Protocol Suite", McGraw Higher Education, Sixth Edition.
2. Paul Deitel, Harvey Dietel and Abbey Dietel: "Internet & World Wide Web – How to Program", Fifth Edition, Tata McGraw Hill.

EXTRA CREDIT COURSE

NETWORK SECURITY

Course Code: 2019ECC023 **No. of Credits: 2**

Course Objectives: To enable the students

- To know about cryptography and its various functions.
- To understand the concepts of hashes and public key algorithm.
- To have a knowledge on different types of authentication.
- To know about the standards, IP security and their applications**.**

UNIT I

Cryptography - Introduction – Primer on Networking –Active and Passive Attacks –Layers and Cryptography – authorization Viruses, worms, Trojan Horses – The Multi level Model of Security. Cryptography – Breaking an Encryption Scheme – Types of Cryptographic functions – secret key Cryptography – Public key Cryptography – Hash algorithms.

UNIT II

Secret Key Cryptography **-** Secret Key Cryptography – Generic Block Encryption – Data Encryption Standard – International Data Encryption Algorithm (IDEA) – Advanced Encryption Standard.

UNIT III

Hashes and Public Key Algorithms **-** Hashes and Message Digests: Introduction – Things to do with hash – MD2 – MD4 – MD5. Public Key Algorithms: Modular arithmetic – RSA – Diffie-Hellman – Digital Signature Standard – Elliptic Curve Cryptography.

UNIT IV

Authentication - Overview of Authentication Systems: Password-Based Authentication – Address-Based Authentication – Cryptographic Authentication Protocols –Eavesdropping and Server Database Reading – Trusted Intermediaries – Session Key Establishment.

UNIT V

Standards, IP Security and Applications - Standards: Kerberos V4: Introduction – Tickets and Ticket-Granting Tickets – Configuration – Logging into the Network – Replicated KDCs. IP Security: Overview of IPSec – IP and IPv6 – Authentication Header – ESP.

Reference Books:

1.Charlie Kaufman, Radia Perlman and MikeSpeciner : "Network Security Private Communication in a Public World", Pearson Education, New Delhi, 2nd Edition,2008 .

2.Stallings William : "Cryptography and Network Security Principles and Practices", Prentice Hall India, New Delhi, 4th Edition 2007.

3.Stallings William : " Network Security Essentials Applications and Standards " Prentice Hall India, New Delhi, 2004.

4.Atul Kahate : "Cryptography and Network Security " Tata Mc.Graw Hill , 2nd Edition, 2008.

EXTRA CREDIT COURSE

MOBILE AND WIRELESS TECHNOLOGY

Course Code: 2019ECC024 **No. of Credits: 2**

Course Objectives:

- 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.

UNIT - I

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

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

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

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

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

1. Asoke K Talukder and Roopa R Yavagal ,Mobile Computing,Tata McGraw-Hill,,Eleventh Reprint 2009.
2.John Schiller , Mobile communication, Pearson Edition ,2 nd Edition.

EXTRA CREDIT COURSE

CLOUD COMPUTING

Course Code: 2019ECC025 **No. of Credits: 2**

Course Objective:

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

UNIT - I **(12 Hours)**

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 **(12 Hours)**

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 schedulesm managing projects, presenting on road.

UNIT -III **(12 Hours)**

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 **(12 Hours)**

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 **(12 Hours)**

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

1. Michael Miller, Cloud Computing, Pearson Education, New Delhi, 2009.
2.Anthony T. Velte, Cloud Computing A Practical Approach, Tata Mcgraw HillEducation Private Limited,1st Edition2009

REFERENCE BOOKS:

1. Arshdeep Bahga, Cloud Computing: A Hands-On Approach, Paperback-Import,,Dec 2013..

EXTRA CREDIT COURSE

CROSS CULTURE MANAGEMENT

Course Code: 2019ECC026 **No. of Credits: 2**

Course Objectives:

- To provide a thorough understanding
- The impact of an international context on management practices based on culture.
- Frameworks for guiding cultural and managerial practice in international business.

UNIT-I

Basic framework of Cross Cultural Management: Factors influencing Decision Making – Using Culture – Cross Cultural and International Management – Implications for the Manager. Comparing Cultures. Shifts in the Culture – Organizational Culture – Culture and Communication –Needs and Incentives – Dispute Resolution and Negotiation.

UNIT-II

Structure of Cross Cultural Management: Formal Structures – Functions – Bureaucracy – Culture and Bureaucracy – Implications. Informal Systems – Informal Relationships – Patronage, Society and Culture –Government-Business Patronage – Guanxi – Managing Informal Systems – Implications.

UNIT-III

Globalization & Cross Cultural Management: Planning Change: Meaning – Planning for Change – Planning in Different Culture – Planning in an Unstable Environment – Implications. International Strategies –Globalization and Localization – Defining Globalization – Roots – Global-Local Contradictions – Implications.

UNIT-IV

Models of Cross Cultural Management: Family Companies: The Anglo Model: Environment, Culture and Management. The Chinese Model: Environment and Culture. The Chinese Model: Management. Changes in the Chinese model – Implications.

UNIT-V

Strategy of Cross Cultural Management: Designing and Implementing Strategy: Formal Strategy Planning – Analyzing Resources and the Competition – Positioning the Company – Implementation – Emergent Strategy – Implications. Head Quarters and Subsidiary: Risk for the Multinational – Control – Implications.

TEXT BOOK:

Recent editions of the following books only are recommended

Jean-Francois Chanlat, Cross Culture Management, T&F publication, Edition-2013.

REFERENCE BOOKS:

1. Neal Mark, The Culture Factor: Cross-national Management and Foreign Venture, Macmillan, Edition-1998.
2. Prashant Faldu, Cross Culture Management, Presence Institute of Image Consulting Pvt.Ltd., Edition-2015.
3.Dipak Kumar, Cross Culture Management: Text and Case, PHI Publication, Edition-2010.
4.Richard R.Gesteland, Cross-Culture Business Behaviour, Copenhagen Business School Press, Edition-1999.

EXTRA CREDIT COURSE

INDIAN ECONOMY AND TRADE DEPENDENCIES

Course Code: 2019ECC027 **No. of Credit :2**

Course Objectives: On successful completion of the course, the students should have understood

- The diversity of issues prevalent in the Indian Economy.
- Trade related issues of the Indian Economy.
- The importance of trade in the present globalized era.

UNIT- I

Introduction to Indian Economy : Alternative Development Strategies – Trends in National Income, Growth and Structure since 1991 - New Industrial Policy 1991 – Recent changes in Trade Policy - Competition Policy - Public Sector Reform - Privatization and Disinvestments – Progress of Human Development in India.

UNIT-II

Planning and Economic Development : Redefining the Role of the State –Human Capital Formation in India – Problem of Foreign Aid – Economic Reforms and Reduction of Poverty –Measures to Remove Regional Disparities.

UNIT-III

Indian Industries : Review of Industrial Growth under 10^{th} and 11^{th} Five year plan - Growth and present state of IT industry in India – Outsourcing, Nationalism and Globalization – Small Sector Industrial Policy.

UNIT-IV

Foreign Trade: Trends of Exports and Imports of India – Composition of India's Foreign Trade - Direction of India's Foreign Trade – Growth and Structure of India's Foreign Trade since 1991 – Balance of Payments since the New Economic Reforms of 1991. Foreign Capital : Need for Foreign Capital – Foreign Investment Inflows –Role of Special Economic Zones (SEZ)

UNIT-V

India in the Global Setting : India in Global Trade – Liberalization and Integration with the Global Economy – Globalization Strategies – India's Foreign Exchange Reserves –Convertibility of the Rupee – WTO and India.

TEXT BOOK:

Recent editions of the following books only are recommended

1.Ramesh Singh, Indian Economy, Mcgraw Hill Education, Edition-7, 2015.

REFERENCE BOOKS:

1.P.Arunachalam-Indian Economy and Trade, Serial Publication, Edition-1,2011.

2.Sankarganesh,Indian Economy Key concepts, Kavin Mukhil Publications, Edition-4,2016
3.Gaurav Kumar, Indian Economy, Kd Publication, Edition-1, 2016.
4.Puri Misra, Indian Economy, Himalaya Publication, Edition-26, 2008.

EXTRA CREDIT COURSE

EXPORT MARKETING

Course Code: 2019ECC028 **No. of Credits: 2**

Course 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 Finanace- 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

INTERNATIONAL TRADE & FOREX

Course Code: 2019ECC029 **No. of Credits: 2**

Course 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- Challanges- 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 Promation Schemes- SEZs , EOU- Deemed Export- Export Promotion Council

UNIT IV

Import Policy and Procedure- Import of Gifts- Import on Import basis- Procedure for customer clearance- Warehousing- Canalised import

UNIT V

Introduction to FEMA- Forex Management-Nature- Forex Manager- Foreign Exchanfge Market- Foreign Exchange Rate- Types- Present status of Foreign exchange Market in India

TEXT BOOKS:

Recent editions of the following books only are recommended

1. Francis cherunilam -International trade-Himalaya publication House 2010

EXTRA CREDIT COURSE

BRAND MANAGEMENT

Course Code: 2019ECC030 **No. of Credits: 2**

Course 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 BOOKS:

Recent editions of the following books only are recommended

1.Keller/ Parameswaran & Jacob, Strategic Brand Management: Building, Measuring, and
2.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

STRESS MANAGEMENT

Course Code: 2019ECC031 **No. of Credits: 2**

Course 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:

Recent editions of the following books only are recommended

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.
Barun Mitra, Personality Development and Soft Skills, Oxford University Press, Second Edition 2017.

EXTRA CREDIT COURSE

RISK AND INSURANCE IN INTERNATIONAL TRADE

Course Code: 2019ECC032 **No. of Credit :2**

Course Objective: On successful completion of this course, the students should have understood basic principles of insurance and risk management

- Understanding contemporary issues related to insuranance

UNIT-I

Nature and History of Insurance Business - Insurance Business in India Europe, UK and USA – insurance Act 1938 -General insurance business -Nationalisation - Insurance as a social security tool – Insurance and economic development - IRDA- Entry of private players into Insurance business – Actuarial profession -Global Trends and developments in Insurance Business

UNIT-II

Principles of Legal aspects of Insurance - Principles of Insurable Interest – Principles of Utmost Good Faith – Principles of Indemnity - Principles of Subrogation -Doctrine of Proximate Clause - Tariff Advisory Committee – Legal Aspects of Life Assurance - Global Insurance Regulatiory Frame work.

UNIT-III

Global Non-life Insurance: Principles & Practices Fire insurance – Standard fire policy; Marine -Cargo and Hull insurance – Types; Motor insurance – Liability insurance, Types of policies;Engineering insurance – Electronic equipment insurance, Burglary insurance – Underwriting Practices – Claims settlement in International Perspectives.

UNIT-IV

Risk management process – Risk identifications: perception of risk, Threat analysis, Even analysis, Safety Audit – Risk evaluation – Concept of probability –Statistical methods of risk evaluation – Value at Risk (VaR)

UNIT-V

Risk Management Methods – Contingency Planning – Risk Transfer – Captive Insurance agreements – Reinsurance – Catastrophe covers – Legal Aspects of Reinsurance – Reinsurance Markets – Lloyds Markets – Risk Management techniques for global insurance market players.

TEXT BOOK:

Recent editions of the following books only are recommended

1.Mishra, M.N,Insurance principles and practices, S. Chand and Co, Delhi, Edition 4, 2007 .

REFERENCE BOOKS:

1.Tripathy N.P,Insurance principles and practices,Prentice Hall India Learning Private Limited Edition 3, 2009

2.Ghanashyam Panda & Monika Mahajan,Principles and Practice of Insurance,Kalyani Publishers Edition 4, 2011.

3.Insurance Regulatory and Development Authority Act, 1999 ,Universal Law Publishing - An imprint of LexisNexis Edition 1, 2016.

4.S K Sarvaria,Commentary on the Insurance Regulatory and Development ,Universal Law Publishing - An Imprint of Lexis Nexis; Edition 1, 2016

EXTRA CREDIT COURSE
RETAIL MARKETING

Course Code: 2019ECC033 **No.of Credits: 2**

Course 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:

Recent editions of the following books only are recommended

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
EXPORT AND IMPORT PROCEDURES

Course Code: 2019ECC034 **No.of Credits: 2**

Course Objective:

- To enable the students to understand about export and import procedures
- To provide adequate knowledge on export and import documentation.
- To impact 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 star ting 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:

Recent editions of the following books only are recommended

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 COURSE

LOGISTICS AND SUPPLYCHAIN MANAGEMENT

Course Code : 2019ECC035 **No. of Credits: 2**

Course 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 andevolution 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 BOOKS:

Recent editions of the following books only are recommended

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 COURSE

QUALITY MANAGEMENT

Course Code : 2019ECC036 **No. of Credits: 2**

Course 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:

Recent editions of the following books only are recommended

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 learing, 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 COURSE

MANAGEMENT OF SMALL AND NEW ENTERPRISES

Course Code : 2019ECC037 **No. of Credits: 2**

Course 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:

Recent editions of the following books only are recommended

1.Prof.Nirali Pandt, Management of new and small Enterprise, Dotcom Publications, 5th Edition,2016.

REFERENCE BOOKS:

1.C.S.Prasad, Small and Mdium 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 COURSE

TOURISM MANAGEMENT

CourseCode : 2019ECC038 **No. of Credits: 2**

Course 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 BOOKS:

Recent editions of the following books only are recommended

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 COURSE

EVENT MANAGEMENT

Course Code: 2019ECC039 **No. of Credits: 2**

Course 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 BOOKS:
Recent editions of the following books only are recommended

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 COURSE

HOSPITALITY MANAGEMENT

CourseCode: 2019ECC040 **No. of Credits: 2**

Course 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 BOOKS:

Recent editions of the following books only are recommended

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

EXTRA CREDIT COURSE

CONSUMER BEHAVIOUR

Course Code : 2019ECC041 **No. of Credits: 2**

Course 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 BOOKS:

Recent editions of the following books only are recommended

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

HUMAN RESOURCE MANAGEMENT

Course Code : 2019ECC042 **No. of Credits: 2**

Course 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:

Recent editions of the following books only are recommended

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

PRINCIPLES AND PRACTICE OF MARKETING SERVICES

CourseCode: 2019ECC043 **No. of Credits: 2**

Course 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

CONSUMER MARKETING

Coursecode: 2019ECC044 **No. of Credits: 2**

Course 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- Theries 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 Loyality- Brand Extention- Conditioning Theories- Cognitive Learning Theory- Attitude and Attitribute theory- Cognitive Dissonance- Self Concept- Development of Self- Fashion – Cosmetics- and Conspicious Consumption

UNIT IV

Perception- Thershold of perception- Sublinieal 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 Buiding- Ethics in Advertisement

TEXT BOOKS:

Recent editions of the following books only are recommended

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

MARKETING OF HEALTH SERVICES

CourseCode: 2019ECC045 **No. of Credits: 2**

Course 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

INTERNATIONAL BANKING

Course Code: 2019ECC046 **No. of Credits: 2**

Course Objectives:

- The course aims to provide the students with a sound grasp of the practices of modern international banking the central themes and issues will be examined in an international and comparative context.

UNIT-I

Global trends and development in international banking – Outline of international banking and finance. Wholesale banking – Retail banking – Private banking – Interbank business – Regulatory framework – BASEL-II.

UNIT-II

International financial centers – Offshore banking units – Special Economic Zones – Foreign exchange management control – International loan agreements – International debt management.

UNIT-III

Asset liability management – Profitability of international banking operations – Investment banking – Correspondent banking – Bank Regulation: Regulation and prudential supervision of banks in the UK and EU. International regulatory and supervisory convergence. Regulating the multifunctional bank.

UNIT-IV

International financial institutions – IMF, IBRD, BIS, IFC, ADB, WTO – international competitiveness – implications and effectiveness and country risk.

UNIT-V

Treasury and risk management – bank risk management – letters of credit mechanism – buyers and sellers credit – bilateral and counter trade.

TEXT BOOKS:

Recent editions of the following books only are recommended

1.Indian Institute of Banking and Finance, International Banking, Macmillan, Edition-2011.

REFERENCE BOOKS:

1.Ruonarayan Bose, Fundamentals of International Banking, Laxmi Publications, Edition-2014.
2.Indaian Institute of Banking and Finance, International Banking Operations, Macmillan, Edition-2017.
3.Yoon S. Park, International Banking and Financial Centers, Springer Publications, Edition-2011.
4.Emmanuel N Roussakis, International Banking, Greenwood Press, Edition-1983.

EXTRA CREDIT COURSE

E-COMMERCE

Course Code: 2019ECC047 **No. of Credits: 2**

Course 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:

Recent editions of the following books only are recommended

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 COURSE

INTERNATIONAL ACCOUNTING

CourseCode: 2019ECC048 **No. of Credits: 2**

Course Objective: To make the students understand

- the concept and nuances of international accounting standards and practices for international business firms
- the importance of financial reporting in international environment.

UNIT-I

Objective of International Financial Reporting – Concept International Accounting Practices, introduction to inter corporate investments – inter company transaction – Global Joint Venture Accounting, Foreign Currency Translation accounting

UNIT-II

Financial instruments – Presentation and disclosure – Convertible securities – recognition and measurement of financial instruments –comprehensive income – settlement Date Vs Trade Date Accounting.

UNIT-III

Inter corporate investment – Temporary and Portfolio investments –Business combination and reporting methods – consolidation procedures –Financial statements disclosure.

UNIT-IV

Global mergers & acquisitions accounting – consolidating wholly, non wholly owned subsidiary under equity and cost recording – Inter company revenue, expenses & inter company profile profit & expenses.

UNIT-V

Financial reporting in an international environment – Integrated Vs Self Sustaining foreign subsidiary – GAAP for public sector organizations.

TEXT BOOKS:

Recent editions of the following books only are recommended

1. A. K. Das Mohapatra,International Accounting,Prentice Hall India Learning Private Limited , Edition 2, 2012.

REFERENCE BOOKS:

1. Med ,Accounting and Finance for Bankers,Macmillan Education Edition 3, 2012.
2. Timothy Doupnik,International Accounting,McGraw-Hill Higher Education; Edition 3, 2011
3. Frederick D.S. Choi,International Accounting,Pearson Education; Edition 5, 2007
4. Shirin Rathore ,International Accounting,PHI, Edition 2,2011.

EXTRA CREDIT COURSE

CORPORATE SOCIAL RESPONSIBILITY AND GOVERNANCE

Course Code: 2019ECC049 **No. of Credits: 2**

Course 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

ENTERPRISE RESOURCE PLANNING

Course Code: 2019ECC050 **No.of Credits: 2**

Course Objectives:

- To enable the students undrstand 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 1

ERP: Introduction : Define – Functional Module in ERP System – Evolution of ERP Systems - Characteritics 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 sucess / 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:

Recent editions of the following books only are recommended

1. Ashim raj singla – Enterprise Resource Planning – Cengage Learning india Pvt . Ltd 2008