

RCS - 2023

NEHRU ARTS AND SCIENCE COLLEGE

(An Autonomous Institution Affiliated to Bharathiar University)

Reaccredited with “A+” Grade by NAAC, ISO 9001:2015 (QMS) Certified, Recognized by

UGC with 2(f) &12(B), Under Star College Scheme by DBT, Govt. of India)

Nehru Gardens, T. M. Palayam, Coimbatore - 641 105, Tamil Nadu

Regulations, Curriculum & Syllabus

B. Sc. Digital and Cyber Forensic Science



Effective From 2023 – 2024



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Nehru Gardens, Thirumalayampalayam, Coimbatore - 641 105, Tamil Nadu.



DEPARTMENT OF DIGITAL AND CYBER FORENSIC SCIENCE

PROGRAMME OUTCOMES

On successful completion of the programme, the graduates will have

PO1	Critical Thinking: Understand the fundamental concepts of Computers, Business environment and IT application and business.
PO2	Design/Development of Solution: Understand & analyze technical data to reach actionable conclusions, including technological solutions to the business.
PO3	Modern Tool Usage: Learn technologies & Programming languages in addressing problems.
PO4	The Social interaction: Develop competent technical writing skills so as to enable the graduate to have effective communication in business.
PO5	Environment and Sustainability: Gain the attitude of continuous learning and deriving innovative ideas.
PO6	Ethics : Apply ethical principle and commit to professional ethics responsibilities as per the norms of the IT industry
PO7	Individual and Team Work: Adopt team building environment and will be a good team player.
PO8	Communication: Create improved communication and business management skills, especially in providing technical support.



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DEPARTMENT OF DIGITAL AND CYBER FORENSIC SCIENCE

PROGRAMME SPECIFIC OUTCOMES (PSOs)

After the successful completion of the programme, the students are expected to

PSO1	To emphasize the importance of scientific methods in crime detection.
PSO2	To disseminate information on the advancements in the field of forensic science.
PSO3	To highlight the importance of forensic science for perseverance of the society.
PSO4	To review the steps necessary for achieving highest excellence in forensic science.
PSO5	To generate talented human resource, commensuration with latest requirements of forensic science.

Regulations

NEHRU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)
REGULATIONS FOR UNDERGRADUATE DEGREE COURSES

Choice Based Credit System blended with Outcome Based Education

Regulations with effect from the Academic Year 2023-2024

Definition

- a) Programme – A course of study leading to the award of a degree in a discipline.
(E.g.: B. Sc. / B. Com.)
- b) Branch – Discipline of study (e.g. B.Sc. Computer Science)
- c) Curriculum – The various courses (subjects) a student must study in a particular branch.
- d) Course – The Theory & Practical subject offered under each curriculum.
- e) Credit – A unit of measurement based on the duration of the contact hours, content and quality of the subject matter.

1. UG Curriculum

The UG Curriculum follows CBCS pattern and the medium of instruction is English.

2. Eligibility for Admission to the Course

Candidates for admission to the first year of the UG degree programmes are required to **have passed the higher secondary examination** (Academic or Vocational) conducted by the Govt. of Tamil Nadu in the relevant subjects or other examinations accepted as equivalent thereto by the Parent University, subject to such other conditions as may be prescribed thereof.

3. Duration of the Programme

The UG programme will comprise six semesters with two semesters per academic year, extending over a total duration of three years. Examination shall be conducted at the end of every semester for the respective courses. Each semester has 90 instructional days consisting of 5 teaching hours per working day. Thus, each semester has 450 teaching hours and the whole programme has 2700 teaching hours.

4. Choice Based Credit System (CBCS)

All Undergraduate Programmes offered by the University shall be under Choice Based Credit System (CBCS). Choice based credit system is introduced with the aim of offering flexibility in the choice of courses to the students.

Objectives of the Choice Based Credit System

- To facilitate the students to have greater flexibility in their choice of courses.
- To widen the spectrum of knowledge of students by means of Core, Allied, Project / Electives, Value Education, Environmental Studies and Skill Based Subjects.
- To revamp the curriculum which enables to impart entrepreneurial skills and placement potentials qualities.
- To incorporate need based knowledge in tune with the location and neighborhood of the Institution.
- To allocate credit points to each paper of the study based on the weightage of the contact hours, content and quality.
- To extend opportunities to fast learners in order to earn additional credit from advanced as well as additional courses.
- To maintain the total credit points of each programme on par with international standards.

5. Outcome Based Education (OBE)

OBE is an **educational** theory that bases each part of an **educational** system around goals (**outcomes**). By the end of the **educational** experience, each student should have achieved the goal.

Objectives of Outcome based curriculum

- The programme outcomes and Programme specific outcomes are clearly identified and unambiguously specified regarding the content, context and competence.
- The expected outcome should be defined by setting bench marks for each level of the programme. Benchmark should tackle and define specifically, the goals of the curriculum and verify ways to access whether the students have reached these goals at the level of study;
- OBE is driven by assessments that focus on well defined learning outcomes and not by other factors such as what is taught, the duration taken by the student to achieve the outcomes or which path the students take to achieve their targets. In OBE, assessment techniques must be with clear description of expected performance.

Definitions

Outcome: An outcome of an educational Programme is what the student should be able to do at the end of a Programme / Course / Instructional Unit.

Levels of Outcomes

- **Programme Outcomes:** POs are statements that describe what the students graduating from any of the educational Programmes should be able to do.
- **Programme Specific Outcomes:** PSOs are statements that describe what the graduates of a specific educational Programme should be able to do.
- **Course Outcomes:** COs are statements that describe what students should be able to do at the end of a course

Learning Outcomes: It describes levels of achievement that can be attained across the domains of learning. Here **K1** representing Remember; **K2** – Understanding; **K3** – Apply; **K4** – Analyze; **K5** – Evaluate, **K6** – Create are used to measure the levels of achievement in learning.

6. Course of Study

The Course of Study for the UG degree courses of all branches shall consist of the following:

6.1. Part I : Language : Tamil or any one of the modern / Classical languages i.e. Malayalam, French and Hindi.

It is absolutely obligatory for all the UG students to study a language under part I. A student can select and study any one of the languages offered under part I. The syllabus drafted would enable the students to communicate with the ease and effectiveness in that language. It shall be offered during the Semesters I to IV with one examination at the end of each semester.

6.2. Part II : Language : English

The study of English has been made mandatory for all UG students under part II. English being the window to the outer world in the context of the globalization scenario, the contents of the syllabus is tailored in a fashion suitable for imparting the classical and the modern facets of the language and literature, besides conferring a mastery of fluency and command over the language, providing a clout to compete for employment opportunities. The subject shall be offered during the Semesters I to IV with one examination at the end of each semester.

6.3. Part III : Core Subjects, Allied Subjects and Project or Elective Courses:

1) **Core Subjects :** Each programme has a group of Core courses arranged semester wise. The syllabi of the core courses will enlighten the students in the acquisition of the basic concepts of their respective disciplines, besides getting focused on to the recent trends. The core courses will span over six semesters and examination shall be conducted in the core subjects at the end of every semester.

2) **Allied Subjects :** In all disciplines, the UG students must study Allied courses along with the core courses, which would supplement, suit and support the major course of study. The Allied Subjects is to be studied during the first four semesters of the UG programmes and examination shall be conducted at the end of every semester.

3) **Project , Internships and Electives with three Courses :** In all disciplines, the UG student shall undergo a Project and Internships (if any) and he / she must study three Elective Courses.

Three Elective courses are to be offered one in the V semester and two in the VI Semester. Elective subjects are to be selected from the list of electives prescribed by the concerned Board of Studies during the fifth and Sixth Semester along with the Core Subjects.

A student shall take up a project work in addition to his elective subjects. The report of the study should be submitted at the end of course duly certified by the supervisor and forwarded by the Head of the Department / Principal of the College. The Head of the Department of the programme concerned shall assign a project supervisor, who in turn shall assign the topic and monitor the project work of the student.

A student shall complete Internship (if any) as per the recommendations of BoS concerned.

6.4. Part IV

1. a) Those who have not studied Tamil up to XII std and taken a Non-Tamil language under Part-I shall take Tamil Comprising of two Courses. The course content of which shall be equivalent to that prescribed for the 6th Standard by the Board of Secondary Education and they shall be offered in the third and fourth semesters.

b) Those who have studied Tamil up to XII std and taken a Non-Tamil language under Part-I shall take Advanced Tamil comprising of two Courses in the third and fourth semesters.

(OR)

c) Others who do not come under the above a + b categories can choose the following Non-major electives (NME) comprising of two courses with 2 credits each (4 credits) in the **third and fourth semesters.**

- 1) Consumer Affairs / Gender Sensitization / Women's Rights (**III semester.**)
- 2) General Awareness (**IV semester.**)

Note: The assessment for the category in Part IV – 1 b and 1 c subjects shall be through End Semester examination (ESE) for the total marks prescribed. There shall be no Continuous Internal Assessment (CIA).

2. Skill Based Subjects : For UG degree, four skill based subjects are to be offered one each in III, IV, V and VI Semesters based on the skill based courses recommended in Naan Muthalvan scheme of Govt. of Tamilnadu. The examination shall be conducted in the skill based subjects at the end of the semesters where they are offered.

3. Ability Enhancement Compulsory Course – Human Rights and Constitution of India:

It is a course to impart the knowledge about the basic Human rights, Classification of human rights, Human Rights Commission and Constitution of India. The total mark is 50 for 2 credits. One Internal Examination shall be conducted for 25 marks in the II semester during CIA III and there is no ESE. The learning outcomes are further measured by various assessment criteria for 25 marks by the course teacher concerned.

4. Ability Enhancement Compulsory Course – Environmental Studies : It is a course on Environmental Science which underlines the importance of environment apart from sensitizing students to the dimensions of Environmental problems. The total mark is 50 for 2 credits. One Internal Examination shall be conducted for 25 marks in I semester during CIA III and there is no ESE. The learning outcomes are further measured by various assessment criteria for 25 marks by the course teacher concerned.

5. Human Values and Yoga Practice: It is a course to inculcate human values among students to develop physical, mental, social and spiritual health which will enhance personality of the students and also improve the institutional climate in the campus. Human Values and Yoga Practice is offered during Semesters I and II with one hour of Yoga and one hour of Human values to be handled alternatively in a week. This course carries a total of 50 marks comprising 25 marks of Internal Practical Assessment for Yoga and 25 marks of written Examination for Human values during CIA III of Semester II.

6. Skill Based Open Elective Courses (Extra Departmental Courses): Any student studying any programme can do course except the course offered by his / her Department. All the UG programmes shall offer two skill based courses as **Extra department Courses**, during semester III with 2 credits each. The students can choose one among the courses offered by other departments. The examination will be conducted at the end of the semester. There shall be no continuous Internal Assessment (CIA).

7. Value Based Open Elective Courses (Intra School Courses) : During Semester IV, list of Open Elective Courses are offered to Students. These Courses are value based and help to inculcate the values and positive attitude among the Students. Each School will offer a list of courses and the Students shall choose any one open Elective Course they prefer and appear for the Examination to earn 2 mandatory credits. The examination will be conducted at the end of the Semester. There shall be no continuous Internal Assessment (CIA). However the NCC Cadets will appear for theory paper in NCC to earn these credits.

6.5. Part V : Extension Activities : Every student shall participate compulsorily for period of not less than two years (4 semesters) in any one of the programmes. (**NSS / Sports and Games / YRC / RRC**)

Each student must choose any one of the courses offered during the first four semesters. The object of the slot is to build- up the ethics, awareness and involvement in social service, acquisition of knowledge and training in discipline leading to national integration and patriotism, and feeling fit and fine through participation in games and athletics.

The student's performance shall be examined by the staff in-charge of extension activities along with the Head of the respective departments and a senior member of the Department on the following parameters.

- 20% of marks for Regularity of attendance
- 60% of marks for Active Participation in classes / camps / games / special camps / programmes in the College / District / State / University activities.
- 10% of marks for Exemplary Awards / Certificates / Prizes.
- 10% of marks for other Social components such as Blood Donations, Fine Arts, etc.

The grades will be awarded at the end of the Fourth Semester. The mark sheet shall carry the gradation relevant to the marks awarded to the candidates. The marks shall be sent to the Controller of Examinations before the commencement of the final semester examinations.

Table 1 : Grades for Extension Activity

Range of Marks	Grade Point	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	AVERAGE
40-49	4.0-4.9	C	SATISFACTORY
00-39	0.0	U	RE-APPEAR
ABSENT	0.0	AAA	ABSENT

This grading shall be incorporated in the mark sheet to be issued at the end of the semester. (Handicapped students who are unable to participate in any of the above activities shall be required to take a test in the theoretical aspects of any one of the above fields and be graded and certified accordingly)

7. Additional Credit Course

Students are given the opportunity to undertake optional papers, additional to their compulsory papers, in order to gain additional credit that would boost their grades. These are not mandatory. Students can earn to a maximum of 10 credits.

Table 2: Regulations for Additional Credits

S. No.	Subject	Credit / course	Total credits
1	Presentation / Publication of Research papers in International Conferences / Journals.	1	1
2	Completion of Diploma / Certificate Courses	1	1
3	Self Study Papers	1	2
4	MOOC Courses prescribed by the Departments	1	2
5	Achievements - Sports / Social Activities / Co curricular / Extracurricular Activities at University / District / State / National / International levels	1	1
6	Swachh Bharath Summer Internship Programme	2	2
7	Visits Abroad for Participation in International Academic events	1	1
Total			10

Rules: The Students can earn additional credits only if they complete the above during the course period (II to V Sem.) and based on the following criteria. Proof of Completion must be submitted to the Office of Controller of Examinations to award additional credits.

1. Students can earn an additional credit if they present / publish research papers in International conferences / reputed Journals
2. Students can complete Diploma / Certificate Courses for a minimum of 30 hrs (II to V Sem. only) from reputed centres and the same certificate shall be produced to earn a credit. They shall be guided by the Department if needed.
3. Students can earn one credit, if they complete One Self Study Paper prescribed by the Department. The Departments shall offer two Self Study Papers.
4. Students can earn one Credit, if they complete any one MOOC courses prescribed by the Department. Students shall earn a maximum of 2 Additional Credits by completing 2 online courses.
5. Award Winners in Sports / Social Activities / Co curricular / Extra Curricular Activities at University / District / State / National / International levels can earn one Extra Credit by producing the Certificate.
6. As per the direction of Ministry of Human Resource Development, Swachh Bharath Summer Internship Programme is introduced to the students as an optional paper. Students interested to join the internship programme are required to register and report the activities conducted during the internship period on the website <https://sbsi.mygov.in>. They shall gain 2 credits if they produce Swachh Bharath Internship Certificate provided by MHRD on completion of their internship.
7. **Extra Credit for NCC Cadets :** NCC Cadets shall gain Extra credits as mandated by UGC and Bharathiar University apart from 2 credits to be added for Part V-Extension Activity during Semester VI. The regulations for the Extra credits shall be communicated to the Cadets through the NCC Officer of the College.

Regulations for Awarding credits to NCC Cadets

Semester	Credits Allocated		Remarks
	Camp	Theory	
III	2		Credits if 1st camp merged with 3 rd Semester
IV		2	Under Value based Open Elective course (Mandatory credit)
V	2		Credits if 2 nd camp merged with 5 th Semester
Total	6 credits		

8. Value Added Course

Each Department shall conduct a Value Added Course to their students during III and IV Semesters for 50 to 60 hours. The MoU with the Industry shall be signed and the Classes shall be conducted without affecting the regular class hours. The Examination and the Valuation shall be conducted by the Industry. The HoD of concerned department shall forward the marks to the Examination section during the end of IV semester and the Grade shall be awarded by the CoE. This is based on the Naan Muthalvan scheme of Govt. of Tamilnadu.

9. Scheme of Examination

Table 3: Summary: CBCS for Undergraduate programmes with language for Four Semesters

Components of Study	No. of Subjects	Credit per Subject #	Total Credits	Marks	Total Marks
Part-I: Tamil / Other Languages	2 + 2 = 4	3	12	75	300
Part-II : English	2 + 2 = 4	3	12	75	300
Part-III					
Core subjects	14 -18	2/ 3 / 4	64-66	50 / 75 / 100	2300
Allied subjects	4 – 6	2/ 3 / 4	14 -16	50 / 75 / 100	
Electives	3	4	12	100	
Part-IV 1. (a) Those who have not studied Tamil up to XII std. and taken a non-Tamil language under part-I shall take basic Tamil comprising of two courses(level will be at 6 th std.) (b) Those who have studied Tamil up to XII std and taken a non –Tamil language under part-I shall take Advance Tamil comprising of two courses. I others who do not come under a + b can choose non-major elective comprising of two courses.(NME)	2	2	4	50	100
2. Skill based subjects	4	3	12	75	300
3. Human Rights and Constitution of India	1	2	2	50	50
4. Environmental Studies	1	2	2	50	50
5. Human Values and Yoga Practice	1	2	2	50	50

6. Value Added Course	1	-	-	-	Grade
7. EDC (Extra Departmental Course)	1	2	2	50	50
8. Open Elective Courses	1	2	2	50	50
Part V: Extension activities	1	2	2	50	50
		Total	144		3600
Additional Credits	II – V Semesters			10 credits	

- No CIA marks for Additional Credit
- No CIA Tests or ESE for Extension Activities.
- For Value added course, Examination shall be conducted by the Industry for 100 marks for a duration of 3 hours.

10. Requirement to appear for the Examinations

Attendance Requirements for the Students appearing for ESE

- The guidelines of attendance requirement issued by Bharathiar University are adopted by the College. Attendance shall be considered semester- wise (not annually).
- A candidate shall be permitted to appear for the Semester Examinations in any semester, if he / she secures not less than 75% of attendance in the total number of working days during the semester and if his / her progress has been satisfactory, and his / her conduct has been satisfactory.
- Those who have obtained below 75% and above 65% of attendance shall pay condonation fee and shall write the examination in the same semester with due permission from the Principal.
- Those who have below 65% and above 50% of attendance are not eligible to write the examination in current semester subjects but are permitted to continue their studies in the next semester provided that this is the first time that the candidate earned attendance between 50% and 65%. Else the candidates have to discontinue the course and re-join in the same semester subjects in the next year with proper approval of the Principal. However, the candidates are eligible to write arrear subjects if any.
- Those who have below 50% of attendance have to redo the semester.

11. Restrictions to appear for the examinations

- a) Any candidate having arrear paper(s) shall have the option to appear in any arrear paper along with the regular semester papers.
- b) Candidates who fail in any of the course of Part I, II, III, IV & V of UG degree examinations shall complete the course concerned **within 5 years** from the date of admission to the said programme, and if they fail to do so, they shall take the examination in the texts / revised syllabus prescribed for the immediate next batch of candidates. If there is no change in the texts / syllabus they shall appear for the examination in that course with the syllabus in vogue until there is a change in the texts or syllabus. In the event of removal of that course consequent to change of regulation and / or curriculum after 5 year period, the candidates shall have to take up an equivalent course in the revised syllabus as suggested by the Chairman of the concerned board of studies and fulfill the requirements as per the regulations for the award of the degree.

12. Medium of Instruction and Examinations

The Medium of instruction and Examinations for the courses of Part I, II & IV shall be in the language concerned. For part III courses, the medium of instruction and the medium of Examination are English.

13. Distribution of Marks

The following are the distribution of marks for Examination & Evaluation pattern:

Table 4 : Distribution of Marks between End Semester Exam (Theory) and Internal Assessment is 75 : 25

Total Marks	External		Internal	Overall Passing Minimum for Total Marks (Internal + External)
	Max. Marks	Passing Minimum for External alone	Max. Marks	
100	75	30	25	40
75	55	22	20	30
50	40	16	10	20

Table 5 : The following are the Distribution of marks for the Continuous Internal Assessment in the theory papers of UG programmes

S. No.	For Theory - UG courses	Distribution of Marks		
01.	CIA I	5	4	2
02.	CIA II (Online Test)	5	4	2
03.	CIA III	6	5	4
04.	OBE Evaluation – Tool 01	3	2	1
05.	OBE Evaluation – Tool 02	3	2	1
06.	OBE Evaluation – Tool 03	3	3	-
	TOTAL MARKS	25	20	10

14. Continuous Internal Assessment (CIA)

Three CIA's shall be conducted at regular Intervals. CIA I shall be a 2 hours written test for a maximum of 50 marks and CIA II shall be conducted as Computer Based test (MCQ's) for 50 marks. CIA III shall be conducted as Model Examination for ESE.

15. OBE Evaluation - Assignment / Seminar / Role play, etc.

Three OBE Assessment parameters are decided for each course to evaluate the achievement of course outcomes which shall be assessed by the concerned course teacher. The marks allotted to this component will be awarded based on the performance of the candidate. The Rubrics for awarding the marks shall be maintained by the Course Teacher concerned.

Table 6 : Distribution of Marks between End Semester Exam (Practical) and Internal Assessment is 60:40.

Total Marks	External		Internal	Overall Passing Minimum for total marks (Internal + External)
	Max. Marks	Passing Minimum for External alone	Max. Marks	
100	60	24	40	40
75	45	18	30	30
50	30	12	20	20

**Table 7 : Distribution of marks for the Continuous Internal Assessment in
UG practical courses**

S. No.	For - UG practical Courses	Distribution of Marks		
		01.	Laboratory Performance - Assessment Tool 01*	5
02.	Laboratory Performance - Assessment Tool 02*	5	4	3
03.	Laboratory Performance - Assessment Tool 03*	5	4	3
04.	Test 1 : During Mid semester	10	7	4
05.	Test 2 : As model test at the end of the semester	10	7	4
06.	Observation Note Book	5	4	3
Total Marks		40	30	20

* For measuring the Course Outcomes

16. Observation Notebook & Regularity

The marks allotted for observation notebook & regularity are awarded based on the performance of students in writing procedure, results of the practical done during every practical class, regularity in attending practical class, which will be accounted based on the attendance maintained separately for practical class, and punctuality in the submission of observation notebook.

Table 8 : Distribution of marks for the External Assessment in UG Practical courses

S. No.	For - UG practical courses	Distribution of Marks		
1.	Experiment – I	20	15	10
2.	Experiment – II	20	15	10
3.	Record	10	10	5
4.	Viva Voce	10	5	5
TOTAL MARKS		60	45	30

**Table 9 : Distribution of marks for Project and Viva Voce examinations /
Industrial Training of UG programmes**

Total Marks	External		Internal	Overall Passing Minimum for Total Marks (Internal + External)
	Max. Marks	Passing Minimum for External alone	Max. Marks	
100	60	24	40	40
75	45	18	30	30

Table 10 : Distribution of marks for the Continuous Internal Assessment in UG Project / Industrial Training Courses.

S. No.	For - UG Project courses / Industrial Training	Distribution of Marks	
		1.	Review – I
2.	Review – II	10	7
3.	Review – III	10	7
4.	Document, Preparation and Implementation	10	9
	TOTAL MARKS	40	30

Table 11 : Distribution of marks for the External Examination in UG Project / Industrial Training courses

S. No.	For - UG Project / Industrial Training courses	Distribution of Marks	
		1.	Record Work and Presentation
2.	Viva Voce	20	15
	TOTAL MARKS	60	45

Table 12 : The courses which have only Continuous Internal Assessment and no End Semester Examinations (ESE)

S. No.	Subject	Total Marks
1.	Environmental Studies	50
2.	Human Rights and Constitution of India	50
3.	Basic Tamil I	50
4.	Basic Tamil II	50
5.	Human Values and Yoga Practice	50
	TOTAL	250

For the above mentioned subjects, the examinations shall be only Continuous Internal Assessment (CIA) as prescribed in the syllabus. The marks shall be furnished to the CoE.

Table 13 : The courses which have only End Semester Examinations (ESE) and no Continuous Internal Assessment

S. No.	Subject	Total Marks
1.	Non – Major Electives / Advanced Tamil I	50
2.	General Awareness / Advanced Tamil II	50
3.	Skill Based Open Elective Courses	50
4.	Value Based Open Elective Courses	50
	TOTAL	200

17. Passing Minimum

A candidate who secures **not less than 40%** in the End Semester Examination and 40% marks in the External Examination and Continuous Internal Assessment put together in any theory course of Part I, II, III & IV shall be declared to have passed the examination in the subject (Theory and Practical). Thus the minimum pass mark for theory subject is 30 out of 75 in ESE and also 40 marks out of 100 (CIA+ESE).

A candidate who passes the examination in all the courses of Part I, II, III, and IV & V shall be declared to have passed, the whole examination. Thus to obtain UG degree a student should pass in all the courses prescribed in the concerned programme and also he / she should earn 144 credits.

18. Marks & Grade

Once the marks of the CIA and End Semester Examinations for each of the course are available, they shall be added. The mark thus obtained shall then be converted to the relevant letter grade as per the details given below to indicate the performance of the candidate.

Table 14 : Conversion of Marks to Grade Points & Letter Grade(Performance in a course / paper)

Range of Marks	Grade Point	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	Average
40-49	4.0-4.9	C	Satisfactory
00-39	0.0	U	Re-Appeal
ABSENT	0.0	AAA	Absent

19. Grade Point Average (GPA)

Grade point average (GPA) is calculated for each part taking into account all the courses studied under each part. Calculation of grade point average semester-wise and part-wise is as follows:

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

$$\text{GPA} = \frac{\sum_i (C_i * G_i)}{\sum_i C_i}$$

Where C_i = Credit earned for course i in any semester.

G_i = Grade points obtained for course i in any semester.

20. Cumulative Grade Point Average (CGPA)

For the entire program CGPA is calculated in the following manner:

$$\text{CGPA} = \frac{\sum_n \sum_i C_{ni} * G_{ni}}{\sum_n \sum_i C_{ni}}$$

$$\text{CGPA} = \frac{\text{Sum of the multiplication of grade points by the credits of the entire programme under each part}}{\text{Sum of the Credits of the Courses of the entire programme under each part}}$$

21. Classification of CGPA

A candidate who has passed all the examinations under different parts (Part-I to Part V) is eligible for the following part wise computed final grades based on the range of CGPA.

Table 15 : Classification of performance of Students based on the Cumulative Grade Points Average

CGPA	Grade	Classification of Final Result
9.5-10.0	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-appear

A candidate who passes all the examinations in Part I to Part V securing following CGPA and Grades shall be declared as follows **for Part I or Part II or Part III:**

- a) A candidate who has passed all the Part-III subjects examination in the first appearance within the prescribed duration of the UG programmes and secured a CGPA of 9 to 10 and equivalent grades “O” or “O+” in part III comprising Core, Electives and Allied subjects shall be placed in the category of “**First Class – Exemplary**”.
- b) A candidate who has passed all the Part-III subjects examination in the first appearance within the prescribed duration of the UG programmes and secured a CGPA of 7.5 to 9 and equivalent grades “D” or “D+” or “D++” in part III comprising Core, Electives and Allied subjects shall be placed in the category of “**First Class with Distinction**”.
- c) A candidate who has passed all Part-III subjects examination of the UG programmes and secured a CGPA of 6 to 7.5 and equivalent grades “A” or “A+” or “A++” shall be declared to have passed that part in “**First Class**”.

- d) A candidate who has passed all Part-I or Part-II subjects examination of the UG programmes and secured a CGPA of 6 and above and equivalent grades “A” or “A+” or “A++” shall be declared to have passed that parts in “**First Class**”.
- e) A candidate who has passed all the Part-I or Part-II or Part-III subjects examination of the UG programmes and secured a CGPA of 5.0 to 6 and equivalent grades “B” or “B+” shall be declared to have passed that parts in “**Second Class**”.
- f) A candidate who has passed all the Part-I or Part-II or Part-III subjects examination of the UG programmes and secured a CGPA of 4.0 to 5 and equivalent grades “C” or “C+” shall be declared to have passed that parts in “**Third Class**”.
- g) There shall be no classifications of final results for Part IV and Part V. However, those parts shall be awarded with final grades in the End semester statements of marks and in the Consolidated statement of marks.

22. Improvement of Marks in the subjects already passed

Candidates desirous of improving the marks awarded in a passed subject in their first attempt shall reappear in the subsequent semester only. 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.

23. Conferment of the Degree

No candidate shall be eligible for conferment of the Degree unless he / she

- i. Has undergone the prescribed course of study for a period of not less than six semesters in an institution approved by / affiliated to the University or has been exempted from in the manner prescribed and has passed the examinations as have been prescribed therefore.
- ii. Has completed all the components prescribed under Parts I to Part V in the CBCS pattern to earn 144 credits.
- iii. Has successfully completed the prescribed Field Work/ Institutional Training (if any) as evidenced by certificate issued by the concerned authorities.

24. Ranking

A candidate who qualifies for the UG degree course passing all the examinations in the first attempt, within the minimum period prescribed for the course of study from the date of admission to the course and secures I or II class shall be eligible for ranking and such ranking shall be confined to 10 % of the total number of candidates qualified in that particular branch of study or maximum of Three Ranks whichever is lower. However the Programmes will be considered for ranking only when there are minimum of 10 students completing that Programme. The improved marks shall not be taken into consideration for ranking.

25. Question Paper Pattern

The question paper pattern for CBCS pattern syllabi for the candidates admitted from the Academic year 2023-24 are as follows:

A. Question Paper Pattern for Part I/Part II/Core /Allied/Elective/Skill Based Subjects**Time : 3hrs****Marks : 75**

Knowledge Level		Section	Marks	Description
K1, K2, K3	1– 10	A(Answer all the questions)	10 x 1 = 10	MCQ
K2, K3	11 – 15	B (Either or pattern)	5 x 5 = 25	Short Answers
K3, K4	16 – 21	C (Answer 3 out of 6)	3 x 10 = 30	Descriptive/ Detailed
K3, K4	22	D (Compulsory Question)	1 x 10 = 10	Application Based/ HOTS

B. Question Paper Pattern for Part I/Part II/Core /Allied/Elective/Skill Based Subjects**Time : 3hrs****Marks : 55**

Knowledge Level		Section	Marks	Description
K1, K2, K3	1– 10	A(Answer all the questions)	10 x 1 = 10	MCQ
K2, K3	11 – 15	B (Either or pattern)	5 x 4 = 20	Short Answers
K3 , K4	16 – 21	C (Answer 3 out of 6)	3 x 6= 18	Descriptive/ Detailed
K3, K4	22	D (Compulsory Question)	1 x 7 = 7	Application Based/ HOTS

C. Question Paper Pattern –Advanced Tamil , Open Elective Courses and Self Study Papers**Time: 3 Hours****Max Marks: 50**

Knowledge Level		Section	Marks	Description
K2, K3	1 – 10	A (Answer all the questions)	10 x 2 = 20	Short Answers / Define
K3 , K4	11 – 15	B (Either or pattern)	5 x 6 = 30	Descriptive/ Detailed

For self study papers, Open Book Examination will be followed.

D. Question Paper Pattern for Part IV subjects

For Part IV papers like Environmental Studies, Human Rights and Constitution of India, Human Values & Yoga Practice, Examination time shall be **2 hours with maximum of 25 marks**. The pattern shall be 5 out of 10 Questions each carrying 5 marks.

NOTE: The questions should be numbered continuously running through the Sections A, B and C.

Questions should be evenly distributed among the unit in the syllabus in all the sections of the question paper. While framing questions with internal choice, the questions must be identified as (a) or (b). (e.g. 11. a or b). Further, the internal choice must be from the same unit.

ESE for General Awareness shall be conducted online with 100 multiple choice questions (with four options) to be evaluated online. (100 x 0.5 = 50 marks)

For other courses in Part IV of UG programmes namely, **Consumer Affairs, Gender Sensitization, and Women's Rights** the question paper pattern shall be 5 out of 10.

The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies.

26. Syllabus

The syllabus for various courses shall be clearly demarcated into five viable units in each course.

27. Revision of Regulations and Curriculum

The above Regulation and Scheme of Examinations shall be in vogue without any change for a minimum period of three years from the date of approval. The College may revise / amend / change the Regulations and Scheme of Examinations, if found necessary.

§ § § § § §

NEHRU ARTS AND SCIENCE COLLEGE
(AUTONOMOUS)
REGULATIONS FOR POSTGRADUATE DEGREE COURSES

Choice Based Credit System blended with Outcome based Education

Regulations with effect from the Academic Year 2022-2023

Definition

- a) Programme – A course of study leading to the award of a degree in a discipline.
(E.g.: M. Sc. / M. Com.)
- b) Branch – Discipline of study (e.g. M.Sc. Microbiology)
- c) Curriculum – The various courses (subjects) a student must study in a particular branch.
- d) Course – The theory & practical subject offered under each curriculum.
- e) Credit – A unit of measurement based on the duration of the contact hours, content and quality of the subject matter.

1. PG Curriculum

The PG Curriculum follows CBCS pattern and the medium of instruction is English.

2. Eligibility for Admission to the Course

A candidate who has passed the Degree Examination as main subject of study of this University or an examination of some other University accepted by the Syndicate as equivalent thereto shall be eligible for admission to the Master Degree of this College.

3. Duration of the Programme

This Course of Study shall be based on Semester System. This Course shall consist of four Semesters covering a total of two Academic years. For this purpose, each academic year shall be divided into two Semesters; the first and third Semesters; July to November and the second and the fourth Semesters; December to April. The Practical Examinations shall be conducted at the end of odd / even Semester. Each semester have 90 working days consists of 5 teaching hours per working day. Thus, each semester has 450 teaching hours and the whole programme has **1800 teaching hours**.

4. Choice Based Credit System (CBCS)

All Postgraduate Programmes offered by the University shall be under Choice Based Credit System (CBCS). Choice based credit system is introduced with the aim of offering flexibility in the choice of courses to the students.

Objectives of the Choice Based Credit System :

- To facilitate the students to have greater flexibility in their choice of courses.
- To revamp the curriculum, to impart entrepreneurial skills and placement potentials qualities.
- To incorporate need based knowledge in tune with the location and neighborhood of the institution.
- To allocate credit points to each paper of the study based on the weightage of the contact hours, content and quality.
- To extend opportunities to fast learners in order to earn Extra credit from advanced as well as additional courses.
- To maintain the total credit points of each programme on par with international standards.

5. Outcome Based Education (OBE)

OBE is an **educational** theory that bases each part of an **educational** system around goals (**outcomes**). By the end of the **educational** experience, each student should have achieved the goal.

Objectives of Outcome based curriculum :

- The programme outcomes and Programme specific outcomes are clearly identified and unambiguously specified regarding the content, context and competence.
- The expected outcome should be defined by setting bench marks for each level of the programme. Benchmark should tackle and define specifically, the goals of the curriculum and verify ways to access whether the students have reached these goals at the level of study;
- OBE is driven by assessments that focus on well defined learning outcomes and not by other factors such as what is taught, the duration taken by the student to achieve the outcomes or which path the students take to achieve their targets. In OBE, assessment techniques must be with clear description of expected performance.

Definitions

Outcome : An outcome of an educational Programme is what the student should be able to do at the end of a Programme/ course/ instructional unit.

Levels of Outcomes

- Programme Outcomes: POs are statements that describe what the students graduating from any of the educational Programmes should be able to do.
- Programme Specific Outcomes: PSOs are statements that describe what the graduates of a specific educational Programme should be able to do.
- Course Outcomes: COs are statements that describe what students should be able to do at the end of a course

Learning Outcomes : It describes levels of achievement that can be attained across the domains of learning. Here **K1** representing Remember; **K2** -Understanding; **K3** - Apply; **K4** - Analyze; **K5**- Evaluate, **K6** – Create are used to measure the levels of achievement in learning.

6. CBCS Curriculum

6.1. Part A : Core Components:

Core Courses : Each programme has a group of core courses. The syllabus of the core courses will facilitate the students in the acquisition of the basic concepts of their respective disciplines, besides getting exposure to the recent developments. This exposure will suitably guide the students towards their vertical mobility in their higher studies. Core courses will last till the fourth semester. **It is mandatory for all PG students to complete an online course under SWAYAM / NPTEL platform between 2nd and 3rd semester.**

6.2. Part B: Optional Courses - Advanced Learner's Courses : (ALC)

Students are offered the opportunity to undertake optional papers, additional to their compulsory papers, in order to gain additional credit that would boost their grades. These are not mandatory. The course will be a self study nature and the concerned departments will offer guidance. Other Advanced Learner's Courses shall be decided during the conduct of Board of Studies. The Examination will be of Open Book Examination model.

7. Requirement to appear for the examinations

Attendance Requirements for the Students appearing for ESE

- The guidelines of attendance requirement issued by Bharathiar University are adopted by the College. Attendance shall be considered semester- wise (not annually).
- A candidate shall be permitted to appear for the Semester Examinations in any semester, if he / she secures not less than 75% of attendance in the total number of working days during the semester and if his / her progress has been satisfactory, and his / her conduct has been satisfactory.

- Those who have obtained below 75% and above 65% of attendance shall pay condonation fee and shall write the examination in the same semester with due permission from the Principal.
- Those who have below 65% and above 50% of attendance are not eligible to write the examination in current semester subjects but are permitted to continue their studies in the next semester provided that this is the first time that the candidate earned attendance between 50% and 65%. Else the candidates have to discontinue the course and re-join in the same semester subjects in the next year with proper approval of the Principal. However, the candidates are eligible to write arrear subjects if any.
- Those who have below 50% of attendance have to redo the semester.

8. Restrictions to appear for the examinations

- a) Any candidate having arrear paper(s) shall have the option to appear in any arrear paper along with the regular semester papers.
- b) Candidates who fail in any of the course of PG degree examinations shall complete the course concerned **within 5 years** from the date of admission to the said programme, and if they fail to do so, they shall take the examination in the texts / revised syllabus prescribed for the immediate next batch of candidates. If there is no change in the texts / syllabus they shall appear for the examination in that course with the syllabus in vogue until there is a change in the texts or syllabus. In the event of removal of that course consequent to change of regulation and / or curriculum after 5 year period, the candidates shall have to take up an equivalent course in the revised syllabus as suggested by the Chairman of the concerned board of studies and fulfill the requirements as per the regulation curriculum for the award of the degree.

9. Medium of Instruction and examinations

The medium of Instruction and the medium of Examination is English.

10. Distribution

The following are the distribution of marks for examination & evaluation pattern. Distribution of Marks between End Semester Exam (Theory) and Internal Assessment is 75:25. The following table gives the distribution.

PG - PROGRAMMES (CBCS)**Table 16: Total credit points and tenure of study for M.A., M.Com, M. Sc. and MSW**

Part	Courses	Semesters	Credit Points	Marks / Grade
III	Components Core / Electives / Internship / Project / Online course	I to IV	94	2350

11. Additional Credits

Students are given the opportunity to undertake optional papers, additional to their compulsory papers, in order to gain additional credit that would boost their grades. These are not mandatory. Students can earn to a maximum of 15 credits.

S. No.	Subject	Credit / Course	Total Credits
1.	Presentation of Research papers in International Conferences	1	1
2.	Publication of Research Papers in reputed Journals	1	1
3.	Advanced Learners Course	2	4
4.	MOOC Courses / Swayam prescribed by the Departments	2	4
5.	Visits Abroad for Participation in International Academics events	1	1
6.	Representation - Sports / Social Activities / Co curricular / Extracurricular Activities at University / District / State / National / International levels	1	2
7.	Swachh Bharath Summer Internship Programme	2	2
Total			15

12. Continuous Internal Assessment (CIA)

Three CIA's shall be conducted at regular Intervals. CIA I and II shall be a 2 hours written test for a maximum of 50 marks each and CIA III shall be conducted as Model Examination for ESE.

13. OBE Evaluation - Assignment / Seminar / Role play, etc.

Three OBE Assessment parameters are decided for each course to evaluate the achievement of course outcomes which shall be assessed by the concerned course teacher. The marks allotted to this component will be awarded based on the performance of the candidate. The Rubrics for awarding the marks shall be maintained by the Course Teacher concerned.

14. Distribution of Marks**Table 17 : Distribution of marks for External and Internal for theory papers of PG courses**

Total Marks	External		Internal	Overall Passing Minimum for Total Marks (Internal + External)
	Max. Marks	Passing Minimum for External alone	Max. Marks	
100	75	38	25	50
75	55	28	20	38
50	40	20	10	25

Table 18 : Distribution of Internal marks for theory papers of PG courses

S. No.	For Theory - PG courses	Distribution of Marks		
01.	CIA I	5	4	2
02.	CIA II	5	4	2
03.	CIA III	6	5	4
04.	OBE Evaluation – Tool 01	3	2	1
05.	OBE Evaluation – Tool 02	3	2	1
06.	OBE Evaluation – Tool 03	3	3	-
	TOTAL MARKS	25	20	10

Table 19 : Distribution of marks for External and Internal for Practical papers of PG Courses

Total Marks	External		Internal	Overall Passing Minimum for total marks (Internal + External)
	Max. Marks	Passing Minimum for External alone	Max. Marks	
100	60	30	40	50
75	45	23	30	38
50	30	15	20	25

Table 20 : Distribution of Internal marks for PG practical papers

S. No.	For PG Practical Courses	Distribution of Marks		
01.	Laboratory Performance - Assessment Tool 01*	5	4	3
02.	Laboratory Performance - Assessment Tool 02*	5	4	3
03.	Laboratory Performance - Assessment Tool 03*	5	4	3
04.	Test 1 : During Mid semester	10	7	4
05.	Test 2 : As model test at the end of the semester	10	7	4
06.	Observation Note Book	5	4	3
Total Marks		40	30	20

Table 21 : Distribution of External marks for PG practical papers

S. No.	For - UG practical courses	Distribution of Marks		
1.	Experiment-I	20	15	10
2.	Experiment-II	20	15	10
3.	Record	10	10	5
4.	Viva Voce	10	5	5
TOTAL MARKS		60	45	30

Table 22 : Distribution of marks for Project and Viva Voce examinations and Continuous Internal Assessments and passing minimum marks for the Project / Industrial Training courses of PG programmes

Total Marks	External		Internal	Overall Passing Minimum for Total Marks (Internal + External)
	Max. Marks	Passing Minimum for External alone	Max. Marks	
250	150	75	100	125
200	120	60	80	100
150	90	45	60	75
100	60	30	40	50

Table 23 : Distribution of marks for the Continuous Internal assessment in PG Project / Industrial Training Courses

S. No.	For - PG Project courses	Distribution of Marks			
		1.	Review-I	20	15
2.	Review-II	20	15	10	10
3.	Review-III	20	15	10	10
4.	Document, Preparation and Implementation	25	20	15	10
5.	Research Paper Publication in Journals**	15	15	15	-
	TOTAL MARKS	100	80	60	40

**Wherever it is not possible, an equivalent Assessment tool shall be prescribed by the Board Chairperson.

Table 24 : Distribution of marks for the External Examination in PG Project / Industrial Training courses

S. No.	For - PG Project courses	Distribution of Marks			
		1.	Record Work and Presentation	100	80
2.	Viva Voce	50	40	30	20
	TOTAL MARKS	150	120	90	60

15. Passing Minimum:

A candidate who secures **not less than 50%** in the End Semester Examination and 50% marks in the External examination and Continuous Internal Assessment put together in any courses shall be declared to have passed the examination in the subject (Theory and Practical). Thus the minimum pass mark is 38 out of 75 in ESE and 50 marks out of 100 (CIA+ESE).

A candidate who passes the examination in all the courses shall be declared to have passed, the whole examination. Thus to obtain PG degree, a student should pass in all the courses prescribed in the concerned programme and also he / she should earn 94 credits.

16. Grade:**Table 25 : Classification of Grade for PG Students based on the Percentage of marks**

Range of Marks	Grade Point	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	AVERAGE
00 – 49	0.0	C	RE-APPEAR
ABSENT	0.0	AA	ABSENT

17. Grade Point Average (GPA)

Grade point average (GPA) is calculated for each part taking into account all the courses studied. Calculation of grade point average semester-wise and part-wise is as follows:

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

$$\text{GPA} = \frac{\sum_i (C_i * G_i)}{\sum_i C_i}$$

Where C_i = Credit earned for course i in any semester.

G_i = Grade points obtained for course i in any semester.

18. Cumulative Grade Point Average (CGPA)

For the entire program CGPA is calculated in the following manner.

$$\text{CGPA} = \frac{\sum_n \sum_i C_{ni} * G_{ni}}{\sum_n \sum_i C_{ni}}$$

$$\text{CGPA} = \frac{\text{Sum of the multiplication of grade points by the credits of the entire programme under each part}}{\text{Sum of the Credits of the Courses of the entire programme under each part}}$$

19. Classification of CGPA

A candidate who has passed all the examinations under different parts is eligible for the following part wise computed final grades based on the range of CGPA.

Table 26 : Classification of performance of PG Students based on the Cumulative Grade Points Average

CGPA	Grade	Classification of Final Result
9.5 – 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	

- A candidate who has passed all the subjects examinations in the first appearance within the prescribed duration of the PG programmes and secured a CGPA of 9 to 10 and equivalent grades “O” or “O+” in Core and Electives subjects shall be placed in the category of “First Class – Exemplary”.
- A candidate who has passed all the subjects examinations in the first appearance within the prescribed duration of the PG programmes and secured a CGPA of 7.5 to 9 and equivalent grades “D” or “D+” or “D++” in Core and Electives subjects shall be placed in the category of “First Class with Distinction”.
- A candidate who has passed all the subjects examinations of the PG programmes and secured a CGPA of 6 to 7.5 and equivalent grades “A” or “A+” or “A++” shall be declared to have passed in “First Class”.
- A candidate who has passed all the subjects examination of the PG programmes and secured a CGPA of 5.0 to 6 and equivalent grades “B” or “B+” shall be declared to have passed in “Second Class”.

20. Ranking

A candidate who qualifies for the PG Degree programme passing all the Examinations in the first attempt, within the minimum period prescribed for the programme from the date of admission to the programme and secures First or Second Class shall be eligible for ranking and such ranking will be confined to 10% of the total number of candidates qualified in that particular subject to a maximum of 10 ranks. However the Programmes will be considered for ranking only when there are minimum of 10 students completing that Programme. The improved marks will not be taken into consideration for ranking.

21. Improvement of Marks in the subjects already passed

Candidates desirous of improving the marks awarded in a passed subject in their first attempt shall reappear in the subsequent semester only. 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.

22. Conferment of the Degree

No candidate shall be eligible for conferment of the Degree unless he / she has undergone the prescribed programme of Study for a period of not less than four Semesters in the Institution or has been exempted there from in the manner prescribed and has passed the Examinations as have been prescribed.

23. Question Paper Pattern

A: Question Paper Pattern

Time: 3 Hours

Max Marks: 75

Knowledge Level	Q. No.	Section	Marks	Description
K1, K2, K3	1 – 10	A(Answer all the questions)	10 x 1 = 10	MCQ
K2, K3	11 – 15	B (Either or pattern)	5 x 5 = 25	Short Answers
K3, K4	16 – 21	C (Answer 3 out of 6)	3 x 10 = 30	Descriptive/ Detailed
K4, K5	22	D (Compulsory Question)	1 x 10= 10	Application Based/ HOTS

B. Question Paper Pattern**Time: 3 Hours****Max Marks: 55**

Knowledge Level	Q. No.	Section	Marks	Description
K1, K2, K3	1 – 10	A(Answer all the questions)	10 x 1 = 10	MCQ
K2, K3	11 – 15	B (Either or pattern)	5 x 4 = 20	Short Answers
K3, K4	16 – 21	C (Answer 3 out of 6)	3 x 6 = 18	Descriptive/ Detailed
K4, K5	22	D (Compulsory Question)	1 x 7 = 7	Application Based/ HOTS

C. Question Paper Pattern –Advanced Learners Course**Time: 3 Hours****Max Marks: 50**

Knowledge Level	Q. No.	Section	Marks	Description
K2, K3	1 – 5	A (Answer all the Questions)	5 x 4 = 20	Short Answers
K3 , K4	6 – 10	B (Either or pattern)	5 x 6 = 30	Descriptive/ Detailed

NOTE: The questions should be numbered continuously running through the Sections A, B and C.

Questions should be evenly distributed among the unit in the syllabus in all the sections of the question paper. While framing questions with internal choice the questions must be identified as (a) or (b). (e.g. 11. a or b). Further, the internal choice must be from the same unit.

The Controller of the Examinations shall arrange for the setting of question papers on the basis the syllabus and the pattern of question paper duly certified by the Chairpersons of the respective Board of Studies.

24. Revision of Regulations and Curriculum

The above Regulation and Scheme of Examinations will be in vogue without any change for a minimum period of three years from the date of approval of the Regulations. The Board may revise / amend / change the Regulations and Scheme of Examinations, if found necessary.



Curriculum



NEHRU ARTS AND SCIENCE COLLEGE
(An Autonomous Institution affiliated to Bharathiar University)
(Reaccredited with "A+" Grade by NAAC, ISO 9001:2015 & 14001:2004 Certified
Recognized by UGC with 2(f) &12(B), Under Star College Scheme by DBT, Govt. of India)
Nehru Gardens, Thirumalayampalayam, Coimbatore - 641 105, Tamil Nadu.



Scheme of Examination

Programme Name : B. Sc., Digital and Cyber Forensic Science

Programme Code : UDF

(Applicable to the students admitted during the year 2023-2024 onwards)

Semester	Part	Sub. Code	Name of the Subject	Instruction hours / week	Duration of Examination	Examination Marks			Credits	
						CIA	ESE	Total		
I	I	23U1TAM101/ 23U1HIN101 / 23U1MAL101/ 23U1FRN101	Elanthamizh Rachnathmak Hindi Kadhayum Samskaaravum Le Français Fondamental - I	4	3	20	55	75	3	
	II	23U2ENG101	Professional English I	4	3	20	55	75	3	
	III		23U3CKC101	Core Paper I: Python Programming	5	3	25	75	100	4
			23U3DFC102	Core Paper II: Basics of Cyber Law	5	3	25	75	100	4
			23U3DFP101	Core Paper III: Practical in Python Programming	4	3	40	60	100	4
			23U3MIA101	Allied Paper I: Mathematics for Computer Science	5	3	25	75	100	4
	IV		21U4ENV101	*@ Ability Enhancement Compulsory Course Environmental Studies	2	3	50	-	50	2
			22U4HVY201	@ Value Education : Human Values and Yoga Practice	1	-	-	-	-	-
					30	-	-	-	600	24
	II	I	23U1TAM202/ 23U1HIN202/ 23U1MAL202/ 23U1FRN202	Pynthamizh Sanchar Hindi Novalum Bhashaapadanavum Le Français Fondamental - II	4	3	20	55	75	3
II		23U2ENG202	Professional English II	4	3	20	55	75	3	
III			23U3DFC204	Core Paper IV: Information Security	5	3	25	75	100	4
			23U3CJC203	Core Paper V: Operating Systems	5	3	25	75	100	4
			23U3DFP202	Core Paper VI: Practical in Operating System Forensics	4	3	40	60	100	4
			23U3MIA202	Allied Paper II: Discrete Mathematics	5	3	25	75	100	4
IV			21U4HRC202	*@ Ability Enhancement Compulsory Course Human Rights and Constitution of India	2	3	50	-	50	2
			22U4HVY201	@ Value Education : Human Values and Yoga Practice	1	2	50	-	50	2
				30	-	-	-	650	26	
III	I	23U1TAM303/ 23U1HIN303 / 23U1MAL303/ 23U1FRN303	Arunthamizh Sahityak Hindi Kavithayum Smarannayum Le Français General - III	4	3	20	55	75	3	

	II	23U2ENG303	Communicative English - I	4	3	20	55	75	3	
	III	23U3CJC304	Core Paper VII: Computer Networks	4	3	20	55	75	3	
		23U3CKC306	Core Paper VIII: Java Programming	4	3	20	55	75	3	
		23U3DFP304	Core Paper IX: Practical in Java Programming	4	3	20	30	50	2	
	III	23U3DFA303	Allied Paper III: Data Structures	3	3	25	75	100	4	
	IV	23U4DFZ301	Skill Based Paper I: Practical in Computer Networks	3	3	30	45	75	3	
		22U4NM3BT1 / 22U4NM3AT1 / 22U4NM3CAF / 22U4NM3GST / 22U4NM3WRT	# @Basic Tamil - I / ##Advanced Tamil- I / * NME: Consumer Affairs / Gender Sensitization / Women's Rights	2	2	50	50	50	2	
		SBOEC	Skill Based Open Elective Courses - Extra Departmental Course	2	3	-	50	50	2	
		23U4CDVALC	Skill Enhancement- Add on Course – Institute Industry Linkage	-	-	-	-	-	-	
				30				625	25	
IV	I	23UITAM404/ 23U1HIN404 / 23U1MAL404/ 23U1FRN404/	Muththamizh Prayogik Hindi Drisykala Sahithyam Le Français General - IV	4	3	20	55	75	3	
		II	23U2ENG404	Communicative English-II	4	3	20	55	75	3
		III	23U3DFC406	Core Paper X: Database Security	4	3	20	55	75	3
			23U3DFC407	Core Paper XI: Cyber Forensic	4	3	20	55	75	3
	23U3DFP405		Core Paper XII: Practical in Cyber Forensic	4	3	40	60	100	4	
	III	23U3DFA404	Allied Paper IV: Cyber Security	3	3	20	55	75	3	
	IV	23U4DFZ402	Skill Based Paper – II: Practical in BASH Scripting	3	3	30	45	75	3	
		22U4NM4BT2 / 22U4NM4AT2 / 21U4NM4GEN	# @Basic Tamil- II / ##Advanced Tamil- II / General Awareness	2	3	50	50	50	2	
		VBOEC	Value Based Open Elective Courses – Intra School Course	2	3	-	50	50	2	
		23U4CDVALC	Skill Enhancement Add on Course – Institute Industry Linkage	-	-	-	-	-	Grade	
		30				650	26			
V	III	23U3DFC508	Core Paper XIII: Cloud Security	5	3	20	55	75	3	
		23U3DFC509	Core Paper XIV: Vulnerability Assessment and Penetration Testing	5	3	20	55	75	3	
		23U3DFC510	Core Paper XV: Cryptography and Network Security	6	3	25	75	100	4	
		23U3DFP506	Core Paper XVI: Practical in Vulnerability Assessment and Penetration Testing	4	3	30	45	75	3	
		23U3DFE501/ 23U3DFE502/ 23U3DFE503/ 23U3DFE504	Discipline Specific Elective I	6	3	25	75	100	4	
		23U3DFV511	In-Plant Training	-	-	50	-	50	2	

	IV	23U4DFZ503	Skill Based paper –III: Practical in Cryptography and Network Security	4	3	30	45	75	3
				30				550	22
VI	III	23U3DFC611	Core Paper XVII: Ethical Hacking	6	3	25	75	100	4
		23U3DFV613	Project and Viva-Voce	6	-	40	60	100	4
VI	III	23U3DFE605/ 23U3DFE606/ 23U3DFE607/ 23U3DFE608	Discipline Specific Elective II	6	3	25	75	100	4
		23U3DFE609/ 23U3DFE610/ 23U3DFE611/ 23U3DFE612	Discipline Specific Elective III	6	3	25	75	100	4
	IV	23U4DFZ604	Skill Based Paper – IV: Practical in Ethical Hacking	6	3	30	45	75	3
	V	22U5EXT601	Extension Activities	-	-	50	-	50	2
				30				525	21
Total								3600	144
Additional Credit (Optional)			Semester II - VI						10 \$

Basic Tamil -Students who have not studied Tamil upto 12th standard.

##**Advanced Tamil** – Students who have studied Tamil language upto 12th standard and chosen other languages under part I of the programme but would like to advance their Tamil language skills.

* **NME** – Student shall choose any one course out of three courses.

@ No End Semester Examinations. Only Continuous Internal Assessment (CIA)

\$ - Not included in Total marks & CGPA Calculation

List of Elective papers (Choose any one of the paper)

Elective	Subject Code		Name of the Subject
Discipline Specific Elective – I	23U3DFE501	A	Mobile and Network Forensic
	23U3DFE502	B	Malware Analysis and Cyber Threat
	23U3DFE503	C	System Administration
	23U3DFE504	D	Cloud Infrastructure and Services
Discipline Specific Elective – II	23U3DFE605	A	Web Application Security
	23U3DFE606	B	Information Technology for Management
	23U3DFE607	C	Intellectual Property Rights and Privacy Laws
	23U3DFE608	D	Cyber Attacks
Discipline Specific Elective - III	23U3DFE609	A	Cyber Policing
	23U3DFE610	B	M-Commerce
	23U3DFE611	C	Network Security and Management
	23U3DFE612	D	Cyber Crime

Extra Departmental Course offered by the Department to other Department Students

S.No.	Subject Code	Name of the Subject
1	22U4IT3ED1	Practical in Libreoffice Suite
2	22U4IT3ED2	GIMP

- Students need to opt a Course other than the Course offered by their Department.

Intra School Course offered by the Department to other Department Students (within the School)

S. No.	Subject Code	Name of the Subject
1.	22U4VBOE01	Design Ecosystem
2.	22U4VBOE02	Design Thinking
3.	22U4VBOE03	Disaster Management
4.	22U4VBOE04	Environmental Pollution and Waste Management (EMS)
5.	22U4VBOE05	History of Ancient India
6.	22U4VBOE06	Indian Knowledge System
7.	22U4VBOE07	Principles of Intellectual Property Rights
8.	22U4VBOE08	Science, Society and Culture
9.	22U4VBOE09	Community Engagement
10.	22U4VBOE10	Emotional Intelligence
11.	22U4VBOE11	Fundamentals of Tourism
12.	22U4VBOE12	Health Education
13.	22U4VBOE13	Media and Politics
14.	22U4VBOE14	Positive Psychology and Work Life
15.	22U4VBOE15	Professional Ethics
16.	22U4VBOE16	The Science of Happiness
17.	NCC	

- Students shall opt any course within their Schools.
- NCC – Students who qualify NCC B Certificate Examination need not appear for these open Electives. The Credits shall be transferred.

Self Study Paper offered by Department of Information Technology

S. No.	Semester	Course code	Course Title
1	Semester II to V	23UCJSS01	Practical in Word Press
2		23UCJSS02	Quantitative Aptitude

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Nehru Arts and Science College
Coimbatore

Syllabus

Course Code	Title		
23U1TAM101	Part - I : Elanthamizh (இளந்தமிழ்)		
Semester: I	Credits: 3	CIA: 20 Marks	ESE: 55 Marks
Course Objective	மொழி இலக்கியத்தின் வாயிலாக அறம் சார் பண்பு மற்றும் ஆளுமைமிக்க மாணவர்களை உருவாக்குதல்.		
Course Category	Skill Development (மாணவர்களின் மொழித்திறனை ஊக்குவித்தல்)		
Development Needs	Regional (உலக அளவில் தமிழ் மொழியின் அவசியத்தை உணர்த்துதல்)		
Course Description	மாணவர்களின் மொழித்திறனை ஊக்குவித்தல் மற்றும் உலக அளவில் தமிழ் மொழியின் அவசியத்தை உணர்த்துதல்		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	சங்க இலக்கியங்கள் வாயிலாக சமூகச் சீர்திருத்தச் சிந்தனைகள் பெறப்படும்.	விரிவுரை/ காணொளிப்பட விளக்கம்	ஒப்படைவு
CO 2	அற இலக்கியங்களின் வழி தமிழர்களின் வாழ்வியல் பண்புகளைக் கற்று அறிதல்.	விரிவுரை	குழுத்திட்டம்
CO 3	பெண்ணியக் கவிஞர்களின் படைப்புத்திறனை மாணவர்களுக்கு உணர்த்துதல்	விரிவுரை/ காணொளிப்பட விளக்கம்	கருத்தரங்கு
CO 4	சிறுகதைகளின் வழி சமூக கருத்துகளை மாணவர்களுக்கு அறிவுறுத்தல்	விரிவுரை / குழு விவாதம்	ஒப்படைவு
CO 5	தமிழ் இலக்கிய வரலாற்றுத் திறனை வளர்த்தல்	விரிவுரை/ குழு விவாதம்	கருத்தரங்கு
Offered by தமிழ்த்துறை			
Course Content : Elanthamizh (இளந்தமிழ்)			Instructional Hours / Week : 4
Unit	Description	Text Book	Chapters
I	சங்க இலக்கியம்	1. ஐங்குறுநாறு 2. பதிற்றுப்பத்து 3. பத்துப்பாட்டு - முல்லைப்பாட்டு 4. சிறுபாணாற்றுப்படை	கிள்ளைப்பத்து (281-290) பாடல்கள் இரண்டாம் பத்து (11-15 ஐந்து பாடல்கள்) முல்லைப்பாட்டு முழுவதும் (1-103 வரிகள்) சேரநாட்டின் வளமை
Instructional Hours			12 Hours
Suggested Learning Methods: நாடக முறையில் கலந்துரையாடல்			
II	அற இலக்கியம் நீதிநூல்கள்	1. அறன் வலியுறுத்தல் 2. புகழ் 3. வாய்மை 4. நாலடியார்-பொருட்பால் 5. நான்மணிக்கடிகை	31 - 40 குறட்பாக்கள் 231 - 240 குறட்பாக்கள் 291 - 300 குறட்பாக்கள் 11 ஆவது அதிகாரம் (கூடா நட்பு 1-10) முதல் ஐந்து பாடல்கள்
Instructional Hours			12 Hours
Suggested Learning Methods : கலந்துரையாடல்			
III	பெண்ணியக் கவிதைகள்	1. ஆண்டாள் பிரியதர்ஷினி 2. கவிஞர் இளம்பிறை 3. சுகிர்தராணி 4. அ. வெண்ணிலா	பூச்சி வாழ்க்கை- சுயம் பேசும் கிளி தொட்டிச்செடி அம்மா நீரில் அலையும் முகம்
Instructional Hours			12 Hours
Suggested Learning Methods : புதுக்கவிதை எழுதும் திறன் பெற்றமை			

IV	சிறுகதைகள்	1. குட்டி ரேவதி 2. ஜெயமோகன் 3. ச.தமிழ்ச்செல்வன் 4. வண்ணநிலவன் 5. உமாமகேஸ்வரி	நிறைய அறைகள் உள்ள வீடு யானை டாக்டர் வெயிலோடு போய் எஸ்தர் மரப்பாச்சி										
Instructional Hours			12 Hours										
Suggested Learning Methods : சிறுகதை படைக்கும் திறன் பெற்றமை													
V	தமிழ் இலக்கிய வரலாறு	1. புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும் 2. சிறுகதையின் தோற்றமும் வளர்ச்சியும் 3. படிமம், குறியீடு பற்றிய – விளக்கம்	தமிழ் இலக்கிய வரலாறு										
Instructional Hours			12 Hours										
Suggested Learning Methods : குழு விவாதம்													
Total Hours			60 Hours										
Text Books	இளங்கலை முதலாம் ஆண்டுத்தமிழ் மாணவர்களுக்குரிய பாடநூல்”இளந்தமிழ்” தொகுப்பு: தமிழ்த்துறை ,நேரு கலை மற்றும் அறிவியல் கல்லூரி, கோயம்புத்தூர்.												
Reference Books	சங்க இலக்கியம் - உரையாசிரியர் ஓளவை. துரைசாமிப்பிள்ளை, பதிப்பாசிரியர்கள் இரா.இளங்குமரனார், முனைவர்.பி.தமிழ்மகன், தமிழ்மண் அறக்கட்டளை, சென்னை.17. நிறைய அறைகள் உள்ள வீடு - குட்டிரேவதி எழுத்து பிரசுரம், 11மாடல் நகர், 10-ஆவது வீதி, சென்னை.												
Web. URLs	https://youtu.be/2SMM5LvZY0												
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Seminar	Assignment	Group Project	Total							
4	4	5	2	2	3	20							
Mapping													
PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	-	H	-	H	H	M	H					
CO2	-	-	M	-	H	L	H	H					
CO3	-	-	L	-	M	M	H	H					
CO4	-	-	H	-	H	M	M	L					
CO5	-	-	H	-	H	L	H	H					
H-High; M-Medium; L-Low													
Course designed by							Verified by						
Dr. S. Satheesh kumar							Dr. A. Sridevi						

Course Code			
23U1HIN101	Part - 1 - Rachnathmak Hindi (रचनात्मक हिंदी)		
Semester: I	Credits: 3	CIA: 20 Marks	ESE: 55 Marks
(Common to all UG Programmes)			
Course Objective	हिंदी भाषा का अच्छा ज्ञान प्राप्त करने के लिए।		
Course Category	Skill Development		
Development Needs	Regional		
Course Description	Improves Accuracy & Quality, Improves Communication Skills		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	नाटक से रचनात्मकता का विकास होता है। यह हमारे आसपास की दुनिया को समझने में भी मदद करता है।	Lecture / Video Methods	Assignment
CO 2	कहानियाँ छात्रों की कल्पना और जिज्ञासा को जगाने में मदद करती हैं।	Case Studies	Group Project
CO 3	व्याकरण हिंदी भाषा को सही ढंग से बोलने, लिखने और समझने में मदद करता है। विज्ञापन लेखन और कहानी लेखन छात्रों को उनके रचनात्मक लेखन और कल्पना शक्ति को विकसित करने में मदद करेगा।	Lectures / Video Lessons	Seminar
CO 4	अनुवाद सभी लोगों के बीच प्रभावी संचार को सक्षम बनाता है।	Lecture / Video Methods	Assignment
CO 5	गद्यांश लेखन लिखित पाठ के सार को समझने और संदर्भ के आधार पर आपके निष्कर्षों का अनुमान लगाने में आपकी बुद्धिमत्ता का आकलन करता है।	Lecture / Dumb Charades	Seminar
Offered by	Hindi		
Course Content		Instructional Hours / Week : 4	
Unit	Description	Text Book	Chapters
I	नाटक लड़ाई - 1979 - सर्वेश्वर दयाल सक्सेना	1	All
Instructional Hours			12
Suggested Learning Methods : Visual Learning			
II	कहानी - 1. मजबूरी - मन्नू भंडारी 2. ठाकुर का कुआँ - मुंशी प्रेमचंद 3. चीफ की दावत - भीष्म साहनी 4. भोलाराम का जीव - हरिशंकर परसाई	1	1 to 4
Instructional Hours			12
Suggested Learning Methods : Auditory			
III	1. अनुप्रयुक्त व्याकरण - संज्ञा, सर्वनाम, क्रिया और विशेषण की पहचान करना। 2. विज्ञापन लेखन 3. दिए गए संकेतों से कहानी लेखन।	1	1,2,3

			Instructional Hours		12								
Suggested Learning Methods : Comprehensive writing													
IV	अनुवाद : अंग्रेज़ी से हिंदी (अनुवाद अभ्यास - 3) 1 - 10 अनुच्छेद			3	1,2								
			Instructional Hours		12								
Suggested Learning Methods : Auditory, Visual													
V	पारिभाषिक शब्दावली , गद्यांश लेखन			5	1,2								
			Instructional Hours		12								
Suggested Learning Methods : Comprehensive writing													
			Total Hours		60								
Text Books		1. नाटक लड़ाई - 1979 - सर्वेश्वर दयाल सक्सेना 2. कहानी संग्रह 3. अनुवाद अभ्यास - 3 दक्षिण भारत हिंदी प्रचार सभा , चेन्नई -17 4. Bharatdarshan.co.nz 5. भाषाशास्त्र का पारिभाषिक शब्द कोश - राजेंद्र द्विवेदी 6. श्री रामदेव , व्याकरण प्रदीप, लोक भारती प्रकाशन, इलाहाबाद											
Reference Books		संदर्भ ग्रंथ 1. हिंदी नाटक और रंगमंच - डॉ राम कुमार वर्मा 2. हिन्दी अलोचना की पारिभाषिक शब्दावली - पेपरबैक 3. आधुनिक हिंदी व्याकरण और रचना - डॉ. वासुदेव नंदन प्रसाद											
Web. URLs													
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Group project	Total							
4	4	5	2	2	3	20							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	-	H	M	M	L							
CO2	-	-	H	L	L	H							
CO3	-	-	-	L	M	H							
CO4	-	-	M	M	H	L							
CO5	-	-	L	M	H	L							
H-High; M-Medium; L-Low													
Course designed by							Verified by						
Dr.S.Swarnalatha							Dr.S.Swarnalatha						

Course Code			
23U1MAL101		Part - I : Kadhayum Samskaaravum (കഥയും സംസ്കാരവും)	
Semester: I		Credits: 3	CIA: 20 Marks
		ESE: 55 Marks	
(Common to all UG Programmes)			
Course Objective		ആധുനികകാലത്തെ മലയാളകഥകളെ കുറിച്ചും സംസ്കാരത്തെ കുറിച്ചും അവബോധം ഉണ്ടാക്കുന്നു	
Course Category		Skill Development	
Development Needs		Regional	
Course Description		Improve accuracy & quality, improve communication	
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	കഥയുടെ സംവേദനം ആസ്വാദകന്റെ അഭിരുചിയെ പൂർത്തിയാക്കുന്നു	Lecture / Video Methods	Assignment
CO 2	പ്രകൃതിയുമായി ബന്ധപ്പെടുന്ന കഥാപരിസരം	Case studies	Group Project
CO 3	ഭക്ഷണവും അതിന്റെ സംസ്കാരവും കൂട്ടായ്മ ഉണ്ടാക്കുന്നു	Lectures / Video Lessons	Seminar
CO 4	ഭക്ഷണത്തിന്റെ മൂല്യം അർത്ഥവത്താക്കുന്നു	Lecture / Video Methods	Assignment
CO 5	ആശയ വിപുലനം	Lecture / Dumb Charades	Seminar
Offered by		Malayalam	
Course Content		Instructional Hours / Week : 4	
Unit	Description	Text Book	Chapters
I	ചെറുകഥകൾ - സമകാലിക കഥകൾ 1. പരുന്ത് - ഇ.സന്തോഷ്കുമാർ 2. പാലാഴിമമനം - കെ.രേഖ 3. കുളവാഴ - വി .എം .ദേവദാസ് 4. മരണമുണ്ടാക്കിക്കളിക്കാം - പി .വി ഷാജികുമാർ 5. കക്കുകളി - ഫ്രാൻസിസ് നൊറോണ	1	1 to 5
Instructional Hours			12
Suggested Learning Methods : Visual Learning			
II	നവോത്ഥാനകഥകൾ 1. വെള്ളപ്പൊക്കത്തിൽ - തകഴി 2. ബന്ധു യാത്ര - കേശവദേവ് 3. മരപ്പാവകൾ - കാരൂർ 4. മാണിക്കൻ - ലളിതാംബിക അന്തർജനം 5. ജന്മദിനം - ബഷീർ	1	6 to 10
Instructional Hours			12
Suggested Learning Methods : Auditory			
III	സംസ്കാര പഠനം - കേരളത്തിലെ രൂപഭേദങ്ങൾ 1. കാസർകോടും കന്നയാളവും ദൈവവിപ്ലവത്തിന്റെ കണ്ണൂരും	1	1,2,3

	2. സാമൂതിരി ,മുട്ടമാല ,എരന്ത് ,ബ്രാഹ്മണാൾ -(കോഴിക്കോട്)												
	3. മലപ്പുറം കേരളത്തിൻറെ അറേബ്യ												
Instructional Hours			12										
Suggested Learning Methods : Comprehensive writing													
IV	സംസ്കാര പഠനം - കേരളത്തിലെ രൂപഭേദങ്ങൾ												
	1. ചേട്ടായിയെ ഇത് ശൂരാട്ടാ - തൃശ്ശൂർ		1	4,5									
	2. കരിമ്പനകളുടെ നാട്ടിൽ - പാലക്കാട്												
Instructional Hours			12										
Suggested Learning Methods : Auditory, Visual													
V	നവമാധ്യമങ്ങൾ - വിവർത്തനം		1	1,2,3									
Instructional Hours			12										
Suggested Learning Methods : Comprehensive writing													
Total Hours			60										
Text Books	1. ചെറുകഥകൾ - (10 ചെറുകഥകൾ) 2. സംസ്കാര പഠനം - നാടൻ കേരള എക്സ്പ്രസ്സ് ഡോ.സി. ഗണേഷ്, ഗ്രീൻ ബുക്ക്സ് തൃശ്ശൂർ 3. നവമാധ്യമങ്ങൾ - ടി.കെ .സന്തോഷ്കുമാർ ഡി.സി.ബുക്ക്സ് കോട്ടയം												
Reference Books	1. എം. അച്യുതൻ - ചെറുകഥ ഇന്നലെ ഇന്ന് - ഡി.സി.ബുക്ക്സ് കോട്ടയം 2. ചെറുകഥയുടെ ഛന്ദസ്- വി. രാജകൃഷ്ണൻ മാതൃഭൂമി ബുക്ക്സ് കോഴിക്കോട് 3. പുതിയ കഥ പുതിയ വായന - എഡി : ഡോ.ഷീബാ ദിവാകരൻ പുസ്തകലോകം പ്രസദ്ധീകരണം കോഴിക്കോട് 4. കേരള സംസ്കാരം - എ .ശ്രീധര മേനോൻ നാഷണൽ ബുക്ക്സ് കോട്ടയം 5. ന്യൂസ് റൂമിൻറെ അകവും പുറവും - ബി.ആർ .പി.ഭാസ്കർ ഗ്രീൻ ബുക്ക്സ് തൃശ്ശൂർ												
Web. URLs	literature">http://www.keralaculture.org>literature												
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Group project	Total							
4	4	5	2	2	3	20							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	M	H	H	H	H					
CO2	H	H	H	L	H	M	H	H					
CO3	H	M	H	M	M	H	H	M					
CO4	H	H	L	M	L	H	H	H					
CO5	H	L	L	L	H	H	H	L					
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Ms. N. RAJANI							Dr. SMITHA C. R.						

Course Code		Title		
23UIFRN101		Part - I : Le Français Fondamental - I		
Semester : I		Credits : 3	CIA : 20 Marks	ESE : 55 Marks
(Common to all UG Programmes)				
Course Objective		Acquisition of standard French through fundamental French grammar.		
Course Category		Skill Development		
Development Needs		Global		
Course Description		This course has basic knowledge of the French grammar and aims to build a solid foundation in the acquisition of standard French through fundamental French grammar		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	Learn basic French grammar along with French civilisation	Lecture	Assignment	
CO 2	Knows the gender of nouns	Word game/ Lecture	Seminar	
CO 3	Learn Negation, articles, and understand the usage of prepositions.	Lectures / Video Lessons	Quiz	
CO 4	Learn Futur proche, Pronominal verb,	Tutorial / Case Studies	Assignment	
CO 5	Know to self-introduce and translate simple sentences	Lecture /	Group project	
Offered by	French			
Course Content		Instructional Hours / Week : 4		
Unit	Description	Text Book	Chapters	
I	Mes cinq sens en action	1	0	
Instructional Hours			12	
Suggested Learning Methods: Worksheets , Reading practice				
II	S'ouvrir aux autres	1	1	
Instructional Hours			12	
Suggested Learning Methods: Kahoot App, Worksheets				
III	Partager son lieu de vie	1	2	
Instructional Hours			12	
Suggested Learning Methods : Audio & Visual, Speaking practice				
IV	Vivre au quotidien	1	3	
Instructional Hours			12	
Suggested Learning Methods : Comprehensive Writing				

V	S'ouvrir à la culture						1	4					
Instructional Hours							12						
Suggested Learning Methods: Translating simple sentences, comprehending the passage.													
Total Hours							60						
Text Books	Saison 1 Méthode de Français – Marie-Noëlle Cocton, Anouchka De Oliveira, Dorothée Duplex (Unit 0 to 4)												
Reference books	A1 Echo Méthode de Français												
Web. URLs	Lingua.com, TV 5 app,												
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
4	4	5	2	2	3	20							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	-	H	M	H	H	-	-	-	-	-	-	-
CO2	-	-	H	L	H	M	-	-	-	-	-	-	-
CO3	-	-	-	M	M	H	-	-	-	-	-	-	-
CO4	-	-	L	M	L	H	-	-	-	-	-	-	-
CO5	-	-	L	-	H	-	-	-	-	-	-	-	-
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Mr. D. Balaji							Dr. R. Malathi						

Course Code	Title		
23U2ENG101	Part – II : Professional English – I		
Semester : I	Credits : 3	CIA : 20 Marks	ESE : 55 Marks
(Common to all UG Programmes)			
Course Objective	To help students to imbibe, develop, practice and use the LSRW skills and fine tune their productive skills.		
Course Category	Skill Development		
Development Needs	Global		
Course Description	SD: Helps to develop LSRW skill		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Recognize listening, and reading proficiency through the prose discourses.	Lecture/Tutorial	Assignment
CO 2	Use and interpret imaginative, and creative skills through the poetic genre.	Lecture/Tutorial	Assignment
CO 3	Enhance the students to use English effectively through short story.	Lecture/Tutorial	Speaking
CO 4	Execute and exercise grammatical skills in academics and career.	Lecture/Tutorial	Reading
CO 5	Evaluate the LSRW skills through literature.	Lecture/Tutorial	Writing
Offered by	Department of English		
Course Content	Instructional Hours / Week : 4		
Unit	Description	Text Book	Chapters
I	Prose Leigh Hunt – Getting Up On Cold Morning Rajagopalachari – Tree Speaks A.G. Gardiner – On the Rule of the Road Listening Activity – Comprehension practice from Prose.	1	1-3
Instructional Hours			12
Suggested Learning Methods : Flipped Learning			
II	Poetry John Milton – On His Blindness Maya Angelou -Phenomenal Women A. K. Ramanujan – A River Speaking Activity – Group Discussion Forum	1	4-6
Instructional Hours			12
Suggested Learning Methods : Flipped Learning			

III	Short Stories O. Henry – The Last Leaf R. K. Narayan – The Missing Mail Oscar Wilde - The Happy Prince Reading Activity – Pronunciation practice and enhancement from Short-stories						1	7-9					
	Instructional Hours							12					
Suggested Learning Methods : Tutorial													
IV	Grammar Parts of Speech Tenses Kinds of Sentences Writing Activity – Paragraph Writing using grammar Components						1	10-13					
	Instructional Hours							12					
Suggested Learning Methods : Tutorial													
V	Writing Skills Letter Writing (Formal & Informal) Notice, Writing Circular Memo, Advertisement Minutes of the Meeting						1	14-17					
	Instructional Hours							12					
Suggested Learning Methods : ABL													
Total Hours							60						
Text Books	Compiled by the Department of English, NASC.												
Reference Books	CLIL (Content & Language Integrated Learning) – Module by TANSCHENOTE: (Text: Prescribed chapters or pages will be given to the students by the department and the college)												
Web. URLs	https://www.youtube.com/watch?v=QrUPneyZNf0												
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assignment	Speaking	Reading	Total							
4	4	5	2	2	3	20							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	H	L	M	M	H	M	H	H	M	H	M
CO2	M	L	H	L	H	M	H	M	H	H	M	H	M
CO3	M	L	H	L	H	H	H	H	H	H	M	H	M
CO4	M	L	H	L	H	L	H	H	H	H	M	H	H
CO5	H	M	H	L	H	H	H	H	H	H	H	H	M
H-High; M-Medium; L-Low													
Course designed by								Verified by Chairman					
Mr. D. Pradeek								Dr. R. Malathi					

Course Code	Title		
23U3CKC101	Core Paper I: Python Programming		
Semester: I	Credits: 4	CIA: 25 Marks	ESE: 75 Marks
(Common to B. Sc. IT / AIML / BCA / DCFS / CS / CS (DS))			
Course Objective	To develop algorithmic solutions to simple computational problems using Python		
Course Category	Employability		
Development Needs	Global		
Course Description	This course will provide a pragmatic and hands-on introduction to the Python programming. It helps to familiarize with different data types, operators, string methods and file operations.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Understand the basics of Python and write simple python program.	Lecture	Assignment
CO 2	Develop Python programs with Control Statement and List method.	Demonstration	Seminar
CO 3	Apply Tuples, Functions and Set Iterators to develop simple applications	Demonstration	Quiz
CO 4	Apply Python Strings, Multithreading and Exceptions for problem solving.	Flipped Classroom	Program Execution
CO 5	Manipulate Files and perform Event Handling.	Lecture	Program Execution
Offered by	Information Technology		
Course Content	Instructional Hours / Week : 5		
Unit	Description	Text Book	Chapters
I	Fundamentals of Python Programming: Introduction – Features – Applications – Installation-Sample Program-Python Virtual Machine-Memory management in Python-Comparison between C, Java and Python- Keywords, Identifiers, Statements, Indentation. Syntax and Styles: Data Types – Literals – Variables-Operators and Expressions-Evaluation of Expression-Sample Programs.	1	1,2
Instructional Hours			15
Suggested Learning Methods: Video lectures about the basics of Python Programming			
II	Control Flow: If – While – For – Break – Continue-Pass-Entry Controlled Loop - Exit Controlled Loop – Counter Controlled Loop - Condition Controlled Loop - Nested Loop - Sample Programs. Arrays-Sequences - Python Lists: Read a List type from a Keyboard-Accessing Elements of a List- Modifying Elements of a List – Basic Operations - Built-in Functions – Python List Methods.	1,2	3,4,5,9
Instructional Hours			15
Suggested Learning Methods: Practice using Flow Charts			
III	Tuples - Need of a Tuple -Sequence of Unpacking – Methods –Sample programs. Dictionaries: Making a Dictionary-Basic Operations-Dictionary Operations – Sets- Iterators and Generators – Sample Programs. Functions: Defining Functions-Calling Functions-Passing Arguments-KeyWord Arguments - Default Arguments-Required	1	6,7,8

	Arguments-Variable Length Arguments-Return Statements-Nesting of Passing Arguments-Anonymous Functions-Recursive Functions- Scope of Local and Global Variables.												
Instructional Hours			15										
Suggested Learning Methods: Develop small programmes using tuples													
IV	Strings in Python: Reading – Accessing – Modifying – Finding - Iterating through a String - Build-in String Functions. Errors and Exceptions – Multithreading		2	8									
Instructional Hours													
Suggested Learning Methods: Develop small applications													
V	Files and Directory Access: Files and Streams - Opening a File - Reading/Writing Operations in a File - Other operations in a File - Iterating through a File - Splitting Words - Serialization and Deserialization. Events: Event Objects - Binding callbacks to events - Event names - Keyboard events - Mouse Events - Sample Programs		1	13,17									
Instructional Hours			15										
Suggested Learning Methods: Laboratory practice													
Total Hours			75Hrs										
Text Books	1. Ch.Satyanaryana, M.Radhika Mani, B.N. Jagadesh, Python Programming, University Press Pvt. Ltd.2018. 2. Dr.S.A.Kulkarni, Problem Solving and Python Programming, 2nd Edition, Yesdee Publishing,2018												
Reference Books	1. Allen B. Downey, Think Python: How to Think Like a Computer Scientist, 2nd edition, Updated for Python 3, Shroff/O'Reilly Publishers,2016 2. Guido van Rossum and Fred L. Drake Jr, An Introduction to Python – Revised and updated for Python 3.2, Network Theory Ltd.,2011.												
Web. URLs	https://www.w3schools.com/python/												
Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
5	5	6	3	3	3	25							
Mapping													
CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	-	-	M	H	H	M	M
CO2	M	M	M	M	H	M	-	-	H	H	H	M	H
CO3	H	L	M	H	M	M	-	-	M	H	H	M	M
CO4	M	H	L	M	L	L	-	-	H	M	H	H	M
CO5	M	M	H	H	M	H	-	-	H	H	M	H	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. D. Suryaprabha							Dr. J. Maria Shyla						

Course Code	Title		
23U3DFC102	Core Paper II: Basics of Cyber Law		
Semester: I	Credits: 4	CIA: 25 Marks	ESE: 75 Marks
Course Objective	To know about the various types of Cyber Crimes, Cyber Laws and its applicability.		
Course Category	Employability		
Development Needs	Global		
Course Description	Cyber law is associated with all the areas of business which have a technological bend. In this course, you will acquire knowledge on cyber law.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Understand the various types of cyber crimes	Lecture	Assignment
CO 2	Demonstrate the various types of cyber laws and their applicability	Tutorial	Seminar
CO 3	Explore the offences and penalties in IT Amendment Act	Lecture	Quiz
CO 4	Classification of civil, criminal cases and essential elements of criminal law	Tutorial	Recitation
CO 5	Determine the sections of Indian Evidence act	Lecture	Making Posters
Offered by	DCFS		
Course Content		Instructional Hours / Week : 5	
Unit	Description	Text Book	Chapters
I	Introduction to Cyberspace, Cybercrime and Cyber Law: The World Wide Web - Web Centric - Business, e-Business Architecture - Models of e-Business - e-Commerce - Threats to virtual world. IT Act 2000 – Objectives - Applicability, Non-applicability – Definitions - Amendments and Limitations. Cyber Crimes - Cyber Squatting - Cyber Espionage - Cyber Warfare - Cyber Terrorism - Cyber Defamation. Social Media - Online Safety for women and children - Misuse of Private information.	1	1,2
Instructional Hours			15
Suggested Learning Methods : Seminar Preparation and Presentation			
II	Regulatory Framework of Information and Technology Act 2000- 1 Information Technology Act 2000 - Digital Signature - E-Signature - Electronic Records - Electronic Evidence and Electronic Governance. Controller - Certifying Authority and Cyber Appellate Tribunal. (Rules announced under the Act), Network and Network Security - Access and Unauthorized Access - Data Security - E-Contracts and E-Forms.	1,2	3,4,5,9
Instructional Hours			15
Suggested Learning Methods : Quiz Participation			

III	Offences and Penalties Information Technology (Amendment) Act2008 – Objective, Applicability and Jurisdiction; Various cyber-crimes under Sections 43 (a) to (j), 43A, 65, 66, 66A to 66F, 67,67A, 67B, 70, 70A, 70B, 80 etc. along with respective penalties - punishment and fines - Penal Provisions for Phishing - Spam – Virus – Worms – Malware – Hacking - Trespass and Stalking - Human rights in cyberspace - International Co-operation in investigating cyber crimes.	1	6,7,8										
Instructional Hours			15										
Suggested Learning Methods : Assignment													
IV	Classification – civil, criminal cases-Essential elements of criminal law-Constitution and hierarchy of criminal courts. Criminal Procedure Code. Cognizable and non-cognizable offences. Bailable and non-bailable offences. Sentences which the court of Chief Judicial Magistrate may pass.	1	8, 14,15										
Instructional Hours			15										
Suggested Learning Methods : Journaling and Library													
V	Indian Evidence Act – Evidence and rules of relevancy in brief. Expert witness. Cross examination and re-examination of witnesses. Sections32, 45, 46, 47, 57, 58, 60, 73, 135, 136, 137, 138, 141. Section 293 in the code of criminal procedure. Secondary Evidence Section 65-B.	1	13,17										
Instructional Hours			15										
Suggested Learning Methods : DIYActivities													
Total Hours			75 Hrs										
Text Books	1. Karnika Seth “Computers, Internet and New Technology Laws” , Lexis Nexis Butters worth Wadhwa,2012.												
Reference Books	1. Harish Chander “Cyber Laws and IT Protection”, PHI Learning Pvt.Ltd, 2012. 2. Nina Godbole and Sunit Belapore “Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives”,Wiley Publications,2011.												
Web. URLs	https://www.javatpoint.com/what-is-cyber-law												
Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
5	5	6	3	3	3	25							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	M	H	H	M	M
CO2	M	M	M	M	H	M	M	M	H	H	H	M	H
CO3	H	L	M	H	M	M	L	H	M	H	H	M	M
CO4	M	H	L	M	L	L	H	M	H	M	H	H	M
CO5	M	M	H	H	M	H	M	H	H	H	M	H	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. T. Ramaprabha							Dr. J. Maria Shyla						

Course Code		Title		
23U3DFP101		Core Paper III: Practical in Python Programming		
Semester: I		Credits: 4	CIA: 40 Marks	ESE: 60 Marks
Course Objective		To introduce the concepts of python programming constructs.		
Course Category		Skill Development		
Development Needs		Global		
Course Description		To development skill set in python programming and apply the concepts to develop applications in order to meet the Local and Global needs.		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	Understand the concept of operators and expressions.	Program Demonstration	Program Creativity	
CO 2	Demonstrate simple programs using control statements	Program Demonstration	Debugging	
CO 3	Implement testing and debugging of code written in Python.	Laboratory Practice	Application of Logic	
CO 4	Create object of a class and apply them in solving problems	Code review	Program Development	
CO 5	Develop real time application using python	Demonstration	Program Development	
Offered by		DCFS		
Course Content			Instructional Hours / Week: 4	
Unit	List of Practical			
1	Write a python program to find the square root			
2	Write a python program to find the largest among three numbers.			
3	Write a user-defined function in a python to check whether the given number is prime or not.			
4	Write a python program to check Armstrong number.			
5	Write a python program to find the sum of elements in an array using functions			
6	Write a python program to print the list of numbers using range and for loop			
7	Write a python program to find the factorial of a number.			
8	Write a python program to find the frequency of characters occurring in a string			
9	Write a python program to let user enter some data in string and then verify data and print			
10	Write a python program in which a function is defined and calling that function to print <i>Python Programming</i>			
11	Write a python program in which a function (with single string parameter) is defined and calling that function to print the string parameters given to function.			
12	Write a python program in which a class is define, then create object of that class and call simple print function define in class.			
			Total Hours	60
Suggested Learning Methods: Solving Case studies, Program development, Code				

Review and Peer Coding													
Tools for Assessment (40 Marks)													
Application of Logic	e-Program Creativity	e-Program Debugging	Test 1	Test 2	Observation Note Book	Total							
5	5	5	10	10	5	40							
Mapping													
CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO7	PO 8	PSO 1	PSO2	PSO3	PSO 4	PSO 5
CO1	H	H	-	M	H	-	M	H	H	H	H	M	M
CO2	H	H	-	M	H	-	M	H	H	H	H	M	M
CO3	H	H	-	M	H	-	M	H	H	H	H	H	H
CO4	H	H	-	M	H	-	M	H	H	H	H	H	H
CO5	H	H	-	M	H	-	M	H	H	H	H	H	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. D. Suryaprabha							Dr. J. Maria Shyla						

Course Code	Title		
23U3MIA101	Allied Paper I : Mathematics for Computer Science		
Semester: I	Credits: 4	CIA: 25 Marks	ESE: 75 Marks
(Common to B.Sc CS, IT,DCFS / BCA)			
Course Objective	To enable the students to learn concepts of Statistical and Numerical Methods used in Computer applications.		
Course Category	Skill Development		
Development Needs	Regional		
Course Description	This course covers a mix of applied linear algebra, Statistics and Numerical Analysis; it covers a central point of contact between Mathematics and Computer science.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Know the concepts of Matrices and solve the problem for Eigen values and Eigen vectors.	Lectures / Video Lectures	Problem solving Skill
CO 2	Solve Simultaneous Linear algebraic equations.	Lectures / Tutorial	Assignment
CO 3	Relate various formulae in Numerical Differentiation and Integration	Lectures / Video Lectures	Seminar
CO 4	Evaluate the Measures of central tendency and dispersion.	Lectures / Peer Teaching	Problem solving Skill
CO 5	Analyse Correlation and Regression	Lecture /Tutorial	Quiz
Offered by	Mathematics		
Course Content	Instructional Hours / Week :5		
Unit	Description	Text Book	Chapters
I	Matrices: Introduction – Types of Matrices –Matrix Operations - Determination – Inverse of a matrix – Rank of a Matrix. Characteristic equation of a Matrix – Condition for consistency - Tests for consistency of linear equation - Eigen values and Eigen vectors – Cayley – Hamilton theorem.	1	4
Instructional Hours			15
Suggested Learning Methods: Problem Solving Practice			
II	System of Simultaneous Linear Algebraic Equations: Gauss Elimination, Gauss Jordon, Gauss Jacobi Method, Gauss Seidal method (up to 3x 3 matrices).	2	4
Instructional Hours			15
Suggested Learning Methods: Class Test			
III	Numerical Differentiations: Newton's forward Difference - Backward Difference – Stirling's formula. Numerical Integration: Trapezoidal Rule - Simpson's 1/3 rd rule & Simpson's 3/8 th rule.	2	9
Instructional Hours			15
Suggested Learning Methods: Problem Solving Practice			
IV	Measures of Central Tendency: Mean Median and Mode –	3	7,8

	Empirical Relationship between mean, median and mode. Measures of Dispersion: Range, Quartile deviation and Standard deviation.												
Instructional Hours				15									
Suggested Learning Methods : Quiz													
V	Correlation: Introduction, Scatter Diagram - Karl Pearson's Correlation and Spearman's Rank Correlation. Regression: Regression equation of variables – Linear Regression.		3	10,11									
Instructional Hours				15									
Suggested Learning Methods : Problem Solving Practice https://youtu.be/fNLeogEjMmM													
Total Hours				75 Hrs									
Text Books	<ol style="list-style-type: none"> 1. P. Kandasamy and Thilagavathy, Mathematics for B.Sc. Branch I–Vol.II (For B. Sc - I Semester), S.Chand and Company Ltd, New Delhi, 2004. Unit I- Chapters 1,2,3,4 - Pg.No : 03-972. 2. P.Kandasamy, K.Thilagavathy and K.Gunavathy, Numerical Methods, S.Chand& Company LTD, Revised 2005. Unit II : Chapter 4, Section: 4.1- 4.2.1, 4.7-4.9 Pg.No : 112-121, 145-159 Unit III: Chapter 9, Sections: 9.1 - 9.4, 9.7, 9.9, 9.13, 9.14 Pg.No : 281-297, 299-317. 3. S. P. Gupta, Statistical Methods, Sultan Chand & Sons, Fourth edition, Reprint 2017. Unit IV: Chapter 7 (only Mean, Median and Mode), Chapter 8 (only Range, Q.D and S.D) Pg.No : 181-189,198-222,275-280,287-293. Unit V : Chapter 10 & 11, Pg.No : 393-405,414-423,457-488. 												
Reference Books	<ol style="list-style-type: none"> 1. E. Balagurusamy, Numerical Methods, Tata McGraw Hill publishing company LTD, Reprint, 2008. 2. P.A.Navanitham, Business Mathematics and Statistics, (Part II), Jai Publishers, Trichy – 21. 												
Web. URLs	<ol style="list-style-type: none"> 1. https://youtu.be/MG7t6SWBnwA 2. https://www.youtube.com/watch?v=1MiT06JFNo4 												
Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Problem Solving Skills	Assignment	Seminar	Total							
5	5	6	3	3	3	25							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	L	M	M	M	M	L	M	L	L	M	M
CO2	H	H	L	M	M	M	M	L	H	M	L	L	M
CO3	H	M	L	M	M	M	M	L	L	M	M	M	L
CO4	H	M	L	M	M	H	M	L	L	M	M	L	M
CO5	H	M	L	M	M	H	M	L	M	M	L	L	M
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Ms. S. Ruth Kethsial							Dr. T. Chandrapushpam						

Course Code	Title		
21U4ENV101	Ability Enhancement Compulsory Course - Environmental Studies		
Semester : I	Credits : 2	CIA : 50 Marks	
(Common to all UG Programmes)			
Course Objective	This course enables the students to recognize the interconnectedness of multiple factors in environmental challenges and communicate clearly and competently matters of environment concern.		
Course Category	Employability		
Development Needs	National & Global		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Understand key concepts from economic, political, and social analysis as they pertain to the design and evaluation of environmental policies and institutions	Lecture/ Video Lectures	Album Preparation
CO 2	Understand concepts and methods from ecological and physical sciences and their application in environmental problem solving.	Lecture/ Peer Teaching	Album Preparation
CO 3	Solve the ethical, cross-cultural, and historical context of environmental issues and the links between human and natural systems.	ABL/ Group Discussions	Group Discussions
CO 4	Reflect critically about their roles and identities as citizens, consumers and environmental actors in a complex, interconnected world.	Video Lessons/ Group discussions	Group Discussions
CO 5	Apply systems concepts and methodologies to analyse and understand interactions between social and environmental processes.	Field visits	Field visit Report
Course Content	Instructional Hours / Week : 2		
Unit	Description	Text Book	Chapters
I	Natural Resources: Forest resources, Water resources, Mineral resources, Food resources, Energy resources and Land resources.	1	2
Instructional Hours			6
Suggested Learning Methods: Video lectures			
II	Ecosystems: Concept of an ecosystem, Structure and function; Introduction, types, characteristic features, structure and function of ecosystem - Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries). Activity: Prepare an album on types of Ecosystem.	1	3
Instructional Hours			6
Suggested Learning Methods: Peer Teaching			
III	Environmental Pollution: Definition Causes, effects and control measures of Air pollution, Water pollution, Soil pollution, Marine pollution and Noise pollution, Solid waste management. Activity: Discuss the solutions for water pollution	1	5
Instructional Hours			6
Suggested Learning Methods : Group Discussion			

IV	Social Issues and the Environment: Water conservation, rain water harvesting, watershed management, Environmental ethics - Issue summits' and possible solutions and Public awareness. Activity: Identify and analyse a Social Issue and an Environment issue in your locality.								1	6			
Instructional Hours									6				
Suggested Learning Methods : Role Play													
V	Disaster Management: Floods, Earthquakes, Cyclones, Landslides: From management to mitigation of disasters: The main elements of a mitigation and measures of strategy: Floods, Earthquakes, Cyclones and Landslides								2	16			
Instructional Hours									6				
Suggested Learning Methods : Group Discussion													
Field Work: Visit to local area to document Environmental assets (River / Forest / Grass land / Mountain), Visit to local polluted site (Urban / Rural / industrial / Agricultural), Study of common plants, insects, birds, Study of simple ecosystem: Pond, River, Hill slopes.													
Total Hours									30				
Text Book(s):	1. Shashi Chawla. A Text Book of Environmental Studies, Tata McGraw-Hill, 2012. 2. From UGC website: https://www.ugc.ac.in/oldpdf/modelcurriculum/env.pdf												
Reference Book(s):	1. Agarwal, K.C. 2001 Environmental Biology, Nidi Public Ltd., Bikaner. 2. Jadhav, H & Bhosale, V.M. 1995 Environmental Protection and Laws Himalaya Pub.House, Delhi 284 p. 3. Mckinney, M.L. & Schoch R.M. 1996. Environmental Science systems & Solutions 4. Odum, E.P. 1971 Fundamentals of Ecology. W.B. Saunders Co. USA. 574 p 5. Rao MN & Datta, A.K. 1987 Waste Water treatment, Oxford & IBH Publication Co. Pvt. Ltd., 345 p.												
Tools for Assessment (50 Marks)													
Ecosystem Album Preparation		Field visit and report submission			Group discussions about issues related to their locality / about Disaster Management				CIA Test	Total			
10		10			5				25	50			
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L	-	L	H	H	H	H	L	L	-	-	-	-
CO2	L	-	L	H	H	H	H	L	L	-	-	-	-
CO3	L	-	L	H	H	H	H	L	L	-	-	-	-
CO4	L	-	L	H	H	H	H	L	L	-	-	-	-
CO5	L	-	L	H	H	H	H	L	L	-	-	-	-
H-High; M-Medium; L-Low													
Course designed by						Verified by							
Dr. M. Thangavel						Dr. M. Thangavel							

Course Code		Title		
23U1TAM202		Part - I : Pynthamizh (பைந்தமிழ்)		
Semester: II		Credits: 3	CIA: 20 Marks	ESE: 55 Marks
Course Objective		மொழி இலக்கியத்தின் வாயிலாக அறம் சார் பண்பு மற்றும் ஆளுமை மிக்க மாணவர்களை உருவாக்குதல்.		
Course Category		Skill Development (மாணவர்களின் மொழித்திறனை ஊக்குவித்தல்)		
Development Needs		Global /Regional(உலக அளவில் தமிழ் மொழியின் அவசியத்தை உணர்த்துதல்)		
Course Description		மாணவர்களின் மொழித்திறனை ஊக்குவித்தல் மற்றும் உலக அளவில் தமிழ் மொழியின் அவசியத்தை உணர்த்துதல்		
Course Outcomes		Teaching Methods		Assessment Methods
CO 1	பக்தி இலக்கியங்கள் வழி வாழ்வியல் நெறிகளை மாணவர்களுக்கு எடுத்துரைத்தல்	விரிவுரை/காணொளிப்பட விளக்கம்		ஒப்படைவு
CO 2	சிற்றிலக்கியங்களின் மூலம் தமிழர்களின் வாழ்க்கை கூறுகளை எடுத்துரைத்தல்	விரிவுரை		குழுத்திட்டம்
CO 3	தமிழ் நாவல்களின் வழி சமுதாயச் சிந்தனைகளைக் கூறுதல்	விரிவுரை/காணொளிப்பட விளக்கம்		கருத்தரங்கு
CO 4	இலக்கண அறிவை வளர்த்தல்	விரிவுரை		ஒப்படைவு
CO 5	தமிழ் இலக்கிய வரலாற்றுத்திறனை மேம்பாடு அடையச் செய்தல்	விரிவுரை/ குழு விவாதம்		கருத்தரங்கு
Offered by		தமிழ்த்துறை		
Course Content: Pynthamizh (பைந்தமிழ்)				Instructional Hours / Week : 4
Unit	Description			Text Book & Chapters
I	பக்தி இலக்கியங்கள்	1. திருமந்திரம் - மூன்றாம் தந்திரம் (அதிகாரம் 2) 2. நாலாயிரத் திவ்வியப்பிரபந்தம்- பெரியாழ்வார் 3. மாணிக்கவாசகர்-எட்டாம் திருமுறை 4. திருநாவுக்கரசர்- திருவரங்கமாலை		அட்டமாசித்திகள் திருப்பல்லாண்டு அச்சோப்பதிகம் நான்காம் திருமுறை - தேவாரம்
Instructional Hours				12 Hours
Suggested Learning Methods: ஆன்மிக சிந்தனைத்திறன் பெற்றமை				
II	சிற்றிலக்கியங்கள்	1. கலம்பகம் - நந்திக்கலம்பகம் 2. பள்ளா - முக்கூடற்பள்ளா 3. குறவஞ்சி - திருக்குற்றாலக்குறவஞ்சி 4. பிள்ளைத்தமிழ் - மீனாட்சியம்மை பிள்ளைத்தமிழ் 5. பட்டினத்தார் பாடல்கள்		91 -100 பாடல்கள் 350 - 360 செய்யுள்கள் 1-10 செய்யுள்கள் 1 -10 செய்யுள்கள் 358 - 367 பாடல்கள்
Instructional Hours				12 Hours
Suggested Learning Methods : கலந்துரையாடல்				
III	நாவல்	1. இமையம் (வெ.அண்ணாமலை)		செல்லாத பணம்
Instructional Hours				12 Hours
Suggested Learning Methods : நாவல் எழுதும் திறன் பெற்றமை				

IV	இலக்கணம்	1. வல்லினம் மிகும் இடங்கள் 2. வல்லினம் மிகா இடங்கள் 3. யாப்பின் உறுப்புகள் (எழுத்து முதல் தொடை வரை) 4. பாவின் வகைகள்	தமிழ் இலக்கணம்										
Instructional Hours			12 Hours										
Suggested Learning Methods : பிழையின்றி தமிழ் எழுதுதல்													
V	தமிழ் இலக்கிய வரலாறு	1. சிற்றிலக்கியத்தின் தோற்றமும் வளர்ச்சியும் 2. புதினத்தின் தோற்றமும் வளர்ச்சியும் 3. பக்தி இலக்கியத்தின் தோற்றமும் வளர்ச்சியும் 4. விண்ணப்பங்கள், மடல்கள் எழுதச்செய்தல்	தமிழ் இலக்கிய வரலாறு										
Instructional Hours			12 Hours										
Suggested Learning Methods : குழு விவாதம்													
Total Hours			60 Hours										
Text Books	1. இளங்கலை முதலாம் ஆண்டுத்தமிழ் மாணவர்களுக்குரிய பாடநூல் “பைந்தமிழ்” தொகுப்பு: தமிழ்த்துறை, நேரு கலை மற்றும் அறிவியல் கல்லூரி, கோயம்புத்தூர்.												
Reference Books	1. திருமந்திரம் - மாணிக்கவாசகர் அருளிய திருவாசகம் - சித்தாந்த பண்டிதர் திரு.ப.இராமநாத பிள்ளை விளக்க உரையுடன் கழக வெளியீடு, திருநெல்வேலி, 2. தமிழண்ணல - புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு, மீனாட்சிப் புத்தக நிலையம் மதுரை.												
Web. URLs	https://youtu.be/cL89sSZq_FI												
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Seminar	Assignment	Group Project	Total							
4	4	5	2	2	3	20							
Mapping													
PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	H	L	H	H	M	H					
CO2	H	L	M	L	H	L	H	H					
CO3	H	L	L	L	M	M	H	H					
CO4	H	L	H	L	H	M	M	L					
CO5	H	L	H	L	H	L	H	H					
H-High; M-Medium; L-Low													
Course designed by							Verified by						
Dr. S. Satheesh kumar							Dr. A.Sridevi						

Course Code	Title		
23U1HIN202	Part - 1 Sanchar Hindi (संचार हिन्दी)		
Semester: II	Credits: 3	CIA: 20 Marks	ESE: 55 Marks
(Common to all UG Programmes)			
Course Objective	पाठ्यक्रम संवादी हिंदी में पारंगत होने में मदद करता है।		
Course Category	Skill Development		
Development Needs	National		
Course Description	Improves Reading and Translation Skills.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	कविता की मूल शब्दावली और व्यावहारिक तत्वों को समझें। मुक्त छंद और कविता के पारंपरिक रूपों में अंतर्निहित सामान्य तकनीकों को समझें।	Lecture / Video Methods	Assignment
CO 2	छात्र विभिन्न प्रकार की संवादात्मक स्थितियों में हिंदी में प्रदर्शित करने, चित्रित करने, नाटक करने और व्याख्या करने के लिए अर्जित कौशल को लागू करने में सक्षम होंगे	Case Studies	Group Project
CO 3	छात्र औपचारिक और अनौपचारिक पत्र लिखने में सक्षम होंगे।	Lectures / Video Lessons	Seminar
CO 4	अनुवाद सभी लोगों के बीच प्रभावी संचार को सक्षम बनाता है।	Lecture / Video Methods	Assignment
CO 5	छात्र हिंदी भाषा के वक्ता के साथ किसी भी सामान्य विषय पर विभिन्न स्तरों पर बातचीत करने में सक्षम होंगे ।	Lecture / Dumb Charades	Seminar
Offered by	Hindi		
Course Content	Instructional Hours / Week : 4		
Unit	Description	Text Book	Chapters
I	आधुनिक हिंदी काव्य : रश्मि रथी , रामधारी सिंह 'दिनकर'	1	All
Instructional Hours			12
Suggested Learning Methods : Visual Learning			02 Hrs
II	एकांकी संग्रह : 1. शिवाजी का सच्चा स्वरूप - सेठ गोविंददास 2. औरंगजेब की आखिरी रात - रामकुमार वर्मा 3. रीढ़ की हड्डी - जगदीशचंद्र माथुर 4. सिपाही की माँ - मोहन राकेश	1	1 to 4
Instructional Hours			12
Suggested Learning Methods : Auditory			02 Hrs
III	पत्र लेखन : (छुट्टी पत्र , संपादक को पत्र , पुस्तकों के लिए आदेश पत्र , नौकरी के लिए आवेदन पत्र , निजी पत्र)	1	1,2,3
Instructional Hours			12

Suggested Learning Methods : Comprehensive writing											02 Hrs		
IV	अनुवाद : हिंदी से अंग्रेजी (अनुवाद अभ्यास - 3) 1 - 10 passages									3	1,2		
Instructional Hours											12		
Suggested Learning Methods : Auditory, Visual											02 Hrs		
V	बोलचाल की हिन्दी : 1. शिक्षक - विद्यार्थी 2. ग्राहक-दुकानदार 3. डॉक्टर - रोगी, 4. साक्षात्कार 5. दो यात्री 6. माँ - बेटा									5	1,2		
Instructional Hours											12		
Suggested Learning Methods : Comprehensive writing											02 Hrs		
Total Hours											60		
Reference Books		1. रश्मि रथी / रामधारी सिंह "दिनकर" - कविता कोश 2. सरस एकांकी नाटक : डॉ. रामकुमार वर्मा 3. अनुवाद अभ्यास - 3 दक्षिण भारत हिंदी प्रचार सभा , चेन्नई -1											
Reference Books		1. श्रेष्ठ हिन्दी एकांकी -डॉ विजयपाल सिंह 2. बोलचाल : पं० अयोध्या सिंह उपाध्याय 3. हिंदी व्याकरण निबंध और पत्र लेखन -डॉ. एन. एल. माथुर											
Web. URLs		www.webdunia.com											
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assign ment	Seminar	Group project	Total							
4	4	5	2	2	3	20							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L	H	H	M	L	M	L	M					
CO2	M	L	H	L	H	H	H	L					
CO3	H	L	L	L	M	H	M	H					
CO4	H	M	M	M	L	L	L	H					
CO5	M	H	L	M	M	M	M	M					
H-High; M-Medium; L-Low													
Course designed by							Verified by						
Dr. S.Swarnalatha							Dr.S.Swarnalatha						

Course Code			
23U1MAL202		Part – I: Novalum Bhashaapadanavum (നോവലും ഭാഷാപഠനവും)	
Semester: II		Credits: 3	CIA: 20 Marks
		ESE: 55 Marks	
(Common to all UG Programmes)			
Course Objective		വിദ്യാർത്ഥികളിൽ മലയാള ഭാഷയുടെ വികാസവും മലയാള സാഹിത്യത്തിൽ നോവലുകൾക്കുള്ള സ്ഥാനവും വായനാശീലവും വർദ്ധിപ്പിക്കുന്നു	
Course Category		Skill Development	
Development Needs		Regional	
Course Description		Proper guidance, opportunities and encouragement that help them to achieve their ambitions	
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	സമൂഹത്തിലെ ഒരു വിഭാഗത്തിന്റെ ജീവിതം	Lecture / Video Methods	Assignment
CO 2	പ്രകൃതിയുടെയും മറ്റു ജീവജാലങ്ങളുടെയും മാറ്റങ്ങൾ	Case studies	Group Project
CO 3	പ്രകൃതി നാശത്തിനെതിരായി ഒന്നിച്ചു പ്രവർത്തിക്കുന്നു	Lectures / Video Lessons	Seminar
CO 4	സമൂഹത്തിലെ ഭാഷാസങ്കല്പം തിരിച്ചറിയുന്നു	Lecture / Video Methods	Assignment
CO 5	നല്ല ഭാഷ എങ്ങനെ സൃഷ്ടിക്കാമെന്ന് മനസ്സിലാക്കുന്നു	Lecture / Dumb Charades	Seminar
Offered by	Malayalam		
Course Content		Instructional Hours / Week : 4	
Unit	Description	Text Book	Chapters
I	നോവൽ - എൻമകജെ	1	1 to 16
Instructional Hours			12
Suggested Learning Methods : Visual Learning			02 Hrs
II	നോവൽ - എൻമകജെ	1	17 to 34
Instructional Hours			12
Suggested Learning Methods : Auditory Method			02 Hrs
III	നോവൽ - എൻമകജെ	1	35 to 51
Instructional Hours			12
Suggested Learning Methods : Comprehensive Writing			02 Hrs
IV	ഭാഷാപഠനം - തെളിമലയാളം	1	1,2,3
Instructional Hours			12
Suggested Learning Methods : Auditory & Visual Method			02 Hrs

V	ഭാഷാപഠനം - തെളിമലയാളം					1	4,5						
Instructional Hours							12						
Suggested Learning Methods : Comprehensive Writing							02 Hrs						
Total Hours							60 Hrs						
Text Books	1. അംബികാസുതൻ മാങ്ങാട്, എൻമകജെ - ഡി.സി.ബുക്സ് കോട്ടയം 2. എം.എൻ.കാരശ്ശേരി, തെളിമലയാളം - ഡി.സി.ബുക്സ് കോട്ടയം												
Reference Books	1. പ്രൊഫ.എൻ.കൃഷ്ണപ്പിള്ള, കൈരളിയുടെ കഥ - ഡി.സി.ബുക്സ് കോട്ടയം 2. ഡോ. പത്മനാഭൻ നായർ, സമ്പൂർണ്ണമലയാള സാഹിത്യ ചരിത്രം - ഡി.സി.ബുക്സ് കോട്ടയം 3. ഡോ.കെ.എം. ജോർജ്ജ്, ആധുനിക മലയാള സാഹിത്യ ചരിത്രം പ്രസ്ഥാനങ്ങളിലൂടെ - ഡി.സി.ബുക്സ് കോട്ടയം 4. എരുമേലി, മലയാള സാഹിത്യം കാലഘട്ടത്തിലൂടെ - ഡി.സി.ബുക്സ് കോട്ടയം												
Web. URLs	literature">http://www.keralaculture.org>literature http://www.manoramaonline.com												
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Group project	Total							
4	4	5	2	2	3	20							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	L	H	H	H	H	H	H					
CO2	H	L	H	M	H	M	H	H					
CO3	M	L	M	M	M	H	H	M					
CO4	H	L	L	H	L	H	H	H					
CO5	M	L	L	M	L	H	H	H					
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Ms. N. RAJANI							Dr. SMITHA C. R.						

Course Code		Title		
23U1FRN202		Part – I : Le Français Fondamental – II		
Semester : II		Credits : 3	CIA : 20 Marks	ESE : 55 Marks
(Common to all UG Programmes)				
Course Objective		This course is comprised of deep study of grammar categories and aims to apply the grammatical structures correctly.		
Course Category		Skill Development		
Development Needs		Global		
Course Description		This course aims to develop communicative competence of the students in French, to create cultural awareness, to promote autonomy in learning French.		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	Acquire an understanding of French culture, use the basic foundation of verbs.	Lecture	Assignment	
CO 2	Describe a place, learn pronom en, y and adjectives.	Tutorial / Case Studies	Seminar	
CO 3	Recall the tenses and learn Imparfait tense	Lectures / Video Lessons	Quiz	
CO 4	Write about the weather and learn pronom COD,	Word game / Lecture	Assignment	
CO 5	Write short passages and translate, Comprehend the passage and learn pronom COI	Lecture	Group project	
Offered by	Department of French			
Course Content		Instructional Hours / Week : 4		
Unit	Description	Text Book	Chapters	
I	Goûter à la campagne	1	5	
Instructional Hours			12	
Suggested Learning Methods: Worksheets, TV5 App				
II	Voyager dans sa ville	1	6	
Instructional Hours			12	
Suggested Learning Methods: Kahoot App, Duolingo				
III	Faire du neuf avec du vieux	1	7	
Instructional Hours			12	
Suggested Learning Methods : Comprehensive Writing				

IV	Changer d'air						1	8						
Instructional Hours							12							
Suggested Learning Methods : Comprehensive Writing														
V	Devenir éco-citoyen						1	9						
Instructional Hours							12							
Suggested Learning Methods : Translating simple sentences and short passages														
Total Hours							60							
Text Books	Saison 1 Méthode de Français – Marie-Noëlle Cocton, Anouchka De Oliveira, Dorothée Duplex (Unit 5 to 9)													
Reference Books	A1 Echo Méthode de Français													
Web. URLs	Lingua.com, TV 5 app, Learn French by podcast (spotify)													
Tools for Assessment (20 Marks)														
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total								
4	4	5	2	2	3	20								
Mapping														
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	-	-	H	M	H	H	-	-	-	-	-	-	-	
CO2	-	-	H	L	H	M	-	-	-	-	-	-	-	
CO3	-	-	-	M	M	H	-	-	-	-	-	-	-	
CO4	-	-	L	M	L	H	-	-	-	-	-	-	-	
CO5	-	-	L	-	H	-	-	-	-	-	-	-	-	
H-High; M-Medium; L-Low														
Course designed by							Verified by							Chairman
Mr. D. Balaji							Dr. R. Malthi							

Course Code		Title		
23U2ENG202		Part – II : Professional English – II		
Semester : II		Credits : 3	CIA : 20 Marks	ESE : 55 Marks
(Common to all UG Programmes)				
Course Objective		To equip the students with the language skills and its functional usage. Facilitate the insight and taste of Literature.		
Course Category		Skill Development		
Development Needs		Global		
Course Description		SD: Helps to develop LSRW skill		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	Mastering life skills through prose discourse.	Lecture/Tutorial	Assignment	
CO 2	Acquire ethics and values through poetic genre.	Lecture/Tutorial	Assignment	
CO 3	Recognise the nuances of English language through short stories.	Lecture/Tutorial	Speaking	
CO 4	Enhance fluency over language with self-confidence.	Lecture/Tutorial	Reading	
CO 5	Examine how the language is used in literature and develop LSRW Skills	Lecture/Tutorial	Writing	
Offered by	Department of English			
Course Content			Instructional Hours / Week : 4	
Unit	Description	Text Book	Chapters	
I	Prose E.M. Forster - Tolerance Mahatma Gandhi - Women Not the Weaker Sex Issac Asimov - The Fun They had Listening Activity – Comprehension practice from Prose.	1	1-3	
Instructional Hours			12	
Suggested Learning Methods : Cooperative Learning				
II	Poetry Robert Frost - Stopping by Woods on a Snowy Evening William Blake - A Poison Tree Alexander Pope – Ode on Solitude Speaking Activity – Group Discussion Forum	1	4-6	
Instructional Hours			12	
Suggested Learning Methods : Inquiry Based Learning				
III	Short Stories Mark Twain - The Cat and the Painkiller Japanese Folk Tale - The Envious Neighbour Hector Hugh Munro (Saki) – The Open Window Reading Activity – Pronunciation practice and enhancement from Short-stories	1	7-9	
Instructional Hours			12	
Suggested Learning Methods : Classroom Activity				

IV	Grammar Articles Concord Active and Passive Voices Direct and Indirect Speech Writing Activity – Paragraph Writing using grammar Components						1	10-13					
	Instructional Hours							12					
Suggested Learning Methods : Direct Method													
V	Writing Skills Resume Writing Email Writing Dialogue Writing Testimonial Writing Creative Writing						1	14-17					
	Instructional Hours							12					
Suggested Learning Methods : Activity Based Learning													
Total Hours							60						
Text Books		Compiled by the Department of English NASC.											
Reference Books		CLIL (Content & Language Integrated Learning) – Module by TANSCHENOTE: (Text: Prescribed chapters or pages will be given to the students by the department and the college)											
Web. URLs													
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assignment	Speaking	Reading	Total							
4	4	5	2	2	3	20							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	H	L	M	M	H	M	H	H	M	H	M
CO2	M	L	H	L	H	M	H	M	H	H	M	H	M
CO3	M	L	H	L	H	H	H	H	H	H	M	H	M
CO4	M	L	H	L	H	L	H	H	H	H	M	H	H
CO5	H	M	H	L	H	H	H	H	H	H	H	H	M
H-High; M-Medium; L-Low													
Course designed by								Verified by Chairman					
Mr. D. Pradeek								Dr. R. Malathi					

Course Code		Title		
23U3DFC204		Core Paper IV: Information Security		
Semester: II		Credits: 4	CIA: 25 Marks	ESE: 75 Marks
Course Objective		To inculcate about information security, risk management and Intrusion detection and prevention methods.		
Course Category		Employability		
Development Needs		Global		
Course Description		Information security is a burgeoning career field. Commercial organization data and use personal data are at risk of being misused as the internet becomes more widely used. This has boosted the demand for information security experts who are conversant with and skilled in the field.		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	Understand the basic concepts of Information Security	Lecture	Assignment	
CO 2	Identify the need for Information Security	Tutorial	Seminar	
CO 3	Explore the risk management and risk control strategies	Lecture	Quiz	
CO 4	Apply Access Control Identification and managing firewalls	Flipped Classroom	Assignment	
CO 5	Analyse the Intrusion Detection and Prevention Systems	Tutorial	Seminar	
Offered by	DCFS			
Course Content		Instructional Hours / Week : 5		
Unit	Description	Text Book	Chapters	
I	Introduction to Information Security - The history of Information security - What is security - CNSS security model - Component s of an Information system - Balancing Information security and access - Approaches to Information security implementation - The systems development life cycle - The security systems development life cycle - Security professionals and the organization - Communities of Interest - Information Security: is it an Art or a Science	1	1,2	
		Instructional Hours	15	
Suggested Learning Methods : Seminar Preparation and Presentation				
II	The need for security: Introduction - Business needs first – Threats - Compromises to individual property - Deliberate software attacks - Deviations in quality of service – Espionage – Sabotage – Theft - Attacks :Malicious code – Hoaxes - Back doors - Password crack - Brute force – Dictionary - Denial of service and Distributed denial of service – Spoofing - Man-in-the-middle – Spam - Mail bombing – Sniffers - Social Engineering – Pharming - Timing attack - Secure software development.	1,2	3,4,5,9	
		Instructional Hours	15	
Suggested Learning Methods : Quiz Participation				
III	Risk Management: Introduction - An overview of Risk Management - Risk Identification: Lan and Organize – Asset Identification and Inventory Classifying and Prioritizing Information assets - Information Asset Valuation - Identifying and Prioritizing Threats - Vulnerability identification Risk Assessment :	1	6,7,8	

	Introduction - Likelihood, Risk Determination - Identify Possible Controls - Documenting the Results of Risk Assessment Risk Control Strategies: Defend, Transfer Mitigate, Accept, Terminate												
Instructional Hours				15									
Suggested Learning Methods : Assignment													
IV	Information security planning and governance - Planning levels - Planning and the CISO - Information security governance - Information security policy - standards and practices – Definitions - EISP, ISSP, SysSP, Policy management - The Information security blueprint - Designing of security architecture - Security education training and awareness program - Continuity strategies - Security technology Firewalls and VPNs, Access control – Identification – Authentication - Authorization, Accountability - Firewall processing modes - Firewalls categorized by generation - Firewalls categorized by structure - Firewall architectures - Selecting the right firewall, Configuring and managing firewalls - Content filters - Protecting remote connections - Remote access - VPNs.		1	14,15									
Instructional Hours				15									
Suggested Learning Methods : Assignment													
V	Intrusion detection and prevention systems- IDPS, types, detection models, response behavior, strengths and limitations, deployment and implementation, measuring the effectiveness. Honeypots, Honey nets and padded cell systems- Trap-and-trace systems, Active intrusion prevention		1	13,17									
Instructional Hours				15									
Suggested Learning Methods : Seminar													
Total Hours				75 Hrs									
Text Books	1. Michael E. Whitman, herbert J. Mattord, Principals of Information Security – cengage Learning, Fourth Edition, 2011.												
Reference Books	1. Andy Taylor David Alexander, Amanda Finch David Sutton, Information Security Management Principles – BCS Publishers, 2008 2. B. Nelson , A. Phillips, F. Enfiger, C. Steuart, Guide to Computer Forensics and Investigations – Cengage Learning, 4 th Edition 2010.												
Web. URLs	https://www.geeksforgeeks.org/what-is-information-security/												
Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
5	5	6	3	3	3	25							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	M	H	H	M	M
CO2	M	M	M	M	H	M	M	M	H	H	H	M	H
CO3	H	L	M	H	M	M	L	H	M	H	H	M	M
CO4	M	H	L	M	L	L	H	M	H	M	H	H	M
CO5	M	M	H	H	M	H	M	H	H	H	M	H	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. P. Jeyanthi							Dr. J. Maria Shyla						

Course Code	Title		
23U3CJC203	Core Paper V - Operating Systems		
Semester: II	Credits: 4	CIA: 25 Marks	ESE: 75 Marks
Common to DCFS & CS (DS)			
Course Objective	To understand the importance of Operating Systems, its functionalities to manage resources of Computer and Peripherals.		
Course Category	Employability		
Development Needs	Global		
Course Description	Every digital device needs its own operating system and functional framework, there is an ever-growing demand globally for operating system developers, software developers and engineers who can innovate new applications with interactive and user-friendly design and databases.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Remember the fundamentals of Operating system	Flipped Classroom	Assignment
CO 2	Understand the scheduling mechanism for process and memory	Constructivist Approach	Seminar
CO 3	Apply the techniques to manage the deadlock and memory	Video Lessons	Quiz
CO 4	Examine demand paging and page replacement policies	Video Lessons	Assignment
CO 5	Analyse the various types of operating System and file system	Case Study	Seminar
Offered by	DCFS		
Course Content		Instructional Hours / Week : 5	
Unit	Description	Text Book	Chapters
I	Introduction: Abstract views of an OS – Goals of an OS – OS and the Computer System – Classes of Operating System: Batch Processing systems – Multiprogramming systems – Time sharing systems – Real Time Operating System – Distributed Operating System – Modern Operating systems	1	1,2
Instructional Hours			15
Suggested Learning Methods : Seminar Preparation and Presentation			
II	Processes and Programs – Programmer View of Process – OS view of Process – Controlling Processes – Process State Transitions – Process Control Block – Process Scheduling: Scheduling Concepts and Terminology – Fundamental Techniques of scheduling – Non Preemptive scheduling policies - Preemptive scheduling policies.	1	3,4
Instructional Hours			15
Suggested Learning Methods : Quiz Participation			

III	Deadlock: Definition – Deadlocks in Resource Allocation – Handling deadlocks – Deadlock Detection and Resolution - Deadlock Prevention – Deadlock Avoidance. Memory Management: Static and dynamic Memory Allocation – The Memory Allocation Model – reuse of Memory – Contiguous Memory allocation – Non Contiguous Memory Allocation.								1	11			
Instructional Hours										15			
Suggested Learning Methods : Assignment													
IV	Paging – Segmentation – Segmentation with Paging. Virtual Memory: Basics – Demand Paging – Overview of Paging – Demand Paging preliminaries – Page replacement policies – Virtual Memory using Segmentation								1	12			
Instructional Hours										15			
Suggested Learning Methods : Assignment													
V	Layers of the Input Output Control System (IOCS) – Overview of I/O Organization – Disk Scheduling. File systems: File System and IOCS – Files and File Operations – Fundamental File organizations – directory Structures – Case study on LINUX OS ,UNIX OS, Android OS (Self Study)								1	14			
Instructional Hours										15			
Suggested Learning Methods : Seminar													
Total Hours										75 Hrs			
Text Books		1. D. M. Dhamdhare, Operating Systems – A concept Based Approach, 2 nd Edition, 2006											
Reference Books		1. William Stallings, Operating Systems Internals and Design Principles , Seventh Edition, Pearson Education Inc. 2012. 2. Abraham Silberchatz, Peter Baer Galvin, Greg Gagne, Operating System Concepts , Seventh Edition, Pearson Education 2009.											
Web. URLs		https://www.geeksforgeeks.org/operating-systems											
Tools for Assessment (25 Marks)													
CIA I		CIA II		CIA III		Assignment		Seminar		Quiz		Total	
5		5		6		3		3		3		25	
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	M	H	H	M	M
CO2	M	M	M	M	H	M	M	M	H	H	H	M	H
CO3	H	L	M	H	M	M	L	H	M	H	H	M	M
CO4	M	H	L	M	L	L	H	M	H	M	H	H	M
CO5	M	M	H	H	M	H	M	H	H	H	M	H	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. T. Ramaprabha							Dr. J. Maria Shyla						

Course Code		Title		
23U3DFP202		Core Paper VI: Practical in Operating System Forensics		
Semester: II		Credits: 4	CIA: 40 Marks	ESE: 60 Marks
Course Objective		To understand the importance of Operating Systems, its functionalities to manage resources of Computer and Peripherals.		
Course Category		Skill Development		
Development Needs		Global		
Course Description		Every digital device needs its own operating system and functional framework, there is an ever-growing demand globally for operating system developers, software developers and engineers who can innovate new applications with interactive and user-friendly design and databases.		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	Understand the installation process of Operating system	Demonstration Method	Laboratory Experiments	
CO 2	Examine the Storage and Volume management for evidence analysis			
CO 3	Interpret the different file types and their identification			
CO 4	Analyse the time and location for forensic evidences			
CO 5	Analyse the system login details for investigation			
Offered by	DCFS			
Course Content			Instructional Hours / Week : 4	
Programme	Description			
1	Installation of Linux OS			
2	Storage Layout and Volume Management for extracting evidence			
3	List and Extract data for forensic analysis			
4	List and Extract files for examination			
5	Directory Layout and forensic analysis of Linux files			
6	Linux File Types and Identification			
7	SysLog Configuration and Analysis for investigating evidences			
8	Examination of Installed Software Packages			
9	Forensic Analysis of Time and Location			
10	Linux Login and Session Analysis for forensic investigation			
			Instructional Hours	60

Tools for Assessment (40 Marks)													
Application of Logic	Program Creativity	Program Debugging	Test 1	Test 2	Observation Note Book	Total							
5	5	5	10	10	5	40							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	H	H	H	H	H	M	H	M	H
CO2	M	M	M	M	H	M	M	M	M	H	M	H	H
CO3	H	H	M	H	M	M	L	H	H	H	M	H	M
CO4	M	H	L	M	H	H	H	M	H	H	H	M	H
CO5	M	M	H	H	M	H	M	H	M	H	H	H	M
H-High; M-Medium; L-Low													
Course designed by							Verified by						
Dr. D. Suryaprabha							Dr. J. Maria Shyla						

Course Code	Title		
23U3MIA202	Allied Paper II : Discrete Mathematics		
Semester: II	Credits: 4	CIA: 25 Marks	ESE: 75 Marks
Course Objective	To learn about the Discrete Structure for Computer Based Application.		
Course Category	Skill Development		
Development Needs	Regional		
Course Description	This course is to understand and use abstract discrete structures that are backbones of Computer Science. In particular, this course meant to introduce logic, proofs, sets, relations, functions, counting, and graph with an emphasis on applications in Computer Science.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Learn the basic concepts of Set theory	Lectures / Peer Teaching	Assignment
CO 2	Implement the basic ideas of Mathematical Logic in Computer Science	Lectures / Tutorial	Seminar
CO 3	Classify different types of Relations and Functions	Lectures / Video Lectures	Assignment
CO 4	Infer the concepts of Grammar and Automata theory.	Lectures / Tutorial	Work Sheet
CO 5	Know the concepts of Graph theory	Lectures / Video Lectures	Quiz
Offered by	Mathematics		
Course Content		Instructional Hours / Week : 5	
Unit	Description	Text Book	Chapters
I	Set Theory: Introduction-Set & its Elements-Set Description-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	1	1
Instructional Hours			15
Suggested Learning Methods: Problem Solving Practice			
II	Mathematical Logic: Introduction- propositional calculus –Basic logical operations- Tautologies-Contradiction – Argument-PDNF & PCNF - Method of proof.	1	12
Instructional Hours			15
Suggested Learning Methods : https://youtu.be/tyDKR4FG3Yw			
III	Relations: Binary Relations – Set operation on relations-Types of Relations – Partial order relation – Equivalence relation – Composition of relations. Functions – Types of functions – Invertible functions –	1	3,4

Composition of functions.													
Instructional Hours			15										
Suggested Learning Methods : Assignments													
IV	Languages: Operations on languages – Regular Expressions and regular languages. Grammar: Types of grammars – Grammar Construction-Finite state machine –Finite State Automata- DFA- N DFA- Conversion of N DFA into DFA.	1	15										
Instructional Hours			15										
Suggested Learning Methods : Problem Solving Practice													
V	Graph Theory: Basic terminology – paths, cycle & Connectivity – Sub graphs – Types of graphs. Trees – Properties of trees – Binary trees-Traversal of Binary Trees.	1	9,10										
Instructional Hours			15										
Suggested Learning Methods : Problem Solving Practice													
Total Hours			75 Hrs										
Text Books	1. J.K. Sharma, Discrete Mathematics , Macmillan India Ltd, 2nd edition, 2005.												
Reference Books	1. J. P. Tremblay, R. Manohar, Discrete Mathematics Structures with Applications to Computer Science , McGraw Hill International Edition, 2005. 2. T.Veerarajan, Discrete Mathematics with Graph Theory and Combinatorics , McGraw Hill International Edition, 2008												
Web. URLs	1. https://www.youtube.com/watch?v=oaOm2pnKkyY 2. https://youtu.be/tyDKR4FG3Yw												
Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
5	5	6	3	3	3	25							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO 4	PSO 5
CO1	H	H	L	M	M	M	M	L	H	H	H	H	H
CO2	H	H	L	M	M	M	M	L	M	M	H	M	M
CO3	H	M	L	M	M	M	M	L	M	L	H	H	M
CO4	H	M	L	M	M	M	M	L	H	M	H	M	H
CO5	H	M	L	M	M	M	M	L	H	M	H	H	M
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Ms.Ruth Kethsial							Dr. T. Chandrapushpam						

Course Code	Title	
21U4HRC202	Ability Enhancement Compulsory Course - Human Rights and Constitution of India	
Semester : II	Credits : 2	CIA : 50 Marks

(Common to all UG Programmes)

Course Objective:

Understand the concept of human rights and the importance of Indian Constitution.

Course Outcomes:

CO1	Understand the principal aspects of human rights and duties in a broad sweep.
CO2	Acquire the knowledge about the Fundamental Duties and Rights of Indian Citizen
CO3	To know the rights of women and Children in India
CO4	Understand the structure and importance of Indian Constitution
CO5	Know the functions of Government and Election Commission of India

Course Content**Instructional Hours / Week : 2**

Unit	Description	Instructional Hours	6
I	An Introduction to Human Rights :Values – Dignity, Liberty, Equality, Justice, Unity in Diversity - Human Rights – Meaning and features; Significance of the study - Classification of Human Rights - Rights and Duties – Correlation	Instructional Hours	6
II	Human Rights and Fundamental Rights - Fundamental Rights and Fundamental Duties- Directive Principles - Role of Judiciary in the protection of Human Rights- National Human Rights Commission <i>Activity : Case Study related to Human Rights</i>	Instructional Hours	6
III	Human Rights of Women and Children- Social Practice and Constitutional Safeguards – Female foeticide and infanticide-Physical assault and Harassment- Domestic violence- Conditions of Working Women <i>Activity : Conduct a Group Discussion on the above topics</i>	Instructional Hours	6
IV	Constitution – Structure and Principles - Meaning and importance of Constitution - Making of Indian Constitution –Sources - Salient features of Indian Constitution- Government of Union- Government of State-Features of judicial system in India	Instructional Hours	6
V	Federalism in India – Features - Local Government -Panchayat –Powers and functions -Election Commission –Organisation and functions-Citizen oriented measures – RTI – Provisions and significance <i>Activity : Seminar/ Role play related to Indian Constitution</i>	Instructional Hours	6
		Total Hours	30

Text Book:

1. **“Human Rights and Constitution of India”**, Compiled by Curriculum Development Cell, Nehru Arts and Science College.

Tools for Assessment (50 Marks)

Case Study and Report submission	Seminar / Role play	Group Discussion	Comprehensive test for 5×5 = 25 marks	Total
10	10	5	25	50

Mapping

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	-	-	L	H	H	H	H	L	L	-	-	L
CO2	-	-	-	L	H	H	H	H	L	L	-	-	L
CO3	-	-	-	L	H	H	H	H	L	L	-	-	L
CO4	-	-	-	L	H	H	H	H	L	L	-	-	L
CO5	-	-	-	L	H	H	H	H	L	L	-	-	L

H-High; M-Medium; L-Low

Course Designed by	Verified by
Dr. N Saranya	Dr. N Saranya

Course Code	Title	
22U4HVVY201	Value Education : Human Values and Yoga Practice	
Semesters : I & II	Credits : 2	CIA : 50 Marks

(Common to all UG Programmes)

Course Objective:

- To help the students appreciate the essential complementarity between ‘values’ and ‘skills’ to ensure sustained happiness and prosperity, which are the core aspirations of all human beings.
- To prepare and distribute standardized Yoga teaching and training material with reference to institute health.

Course Outcomes:

CO1	To know the importance of Ethics to be followed in the Human life.
CO2	To inculcate a sense of respect towards harnessing values of life and spirit of fulfilling social responsibilities.
CO3	To gain knowledge about the values that develops life skills.
CO4	To understand and Practice Meditation & Surya Namaskar.
CO5	To understand and apply the knowledge for physical health and well being through Asanas

Course Content**Instructional Hours / Week : 1 (For Semesters I and II)**

Unit	Description	Instructional Hours
I	Human Values – Introduction - Definition of Ethics and Values - Character and Conduct - Nature and Scope of Ethics. Individual and Society - Theories of Society - Social Relationships and Society - Empathy: Compassion towards other beings.	4
II	Self-realization and Human Values -Self-realization and Harmony-Rules and Regulations- Rights and Duties-Good and Obligation-Integrity and Conscience. Obligation to Family - Trust and Respect-Codes of Conduct.	5
III	Character Formation Towards Positive Personality: Truthfulness, Constructivity, Sacrifice, Sincerity, Self Control, Altruism, Tolerance, Scientific Vision. Refinement of worries: Neutralization of anger-Intelligent quotient(IQ),Emotional quotient(EQ),Spiritual Quotient (SQ)	5
IV	Power of Meditation - Development of mind in stages - Mental Frequencies Methods for Concentration. Meditation Practices - Surya Namaskar. Physical Exercises -Kayakalpa Practices Training for Potentialising the Mind.	6
V	ASANAS Standing Posture: Tadasana, Utkattasana, arthaKadi Chakrasana, Trikonasana, Artha	

Chandrarasana, Padahastasana, Virabhadrasana, Vrikshasana, Artha, Natarajasana. Sitting posture: Padmasana, Gomukasana, Ustrasana, ArdhaMatsyendrasana, Patchimottanasana. Prone posture: Bhujangasana, shalabhasana, Dhanurasana, Chakrasana. Supine posture: Sarvangasana, Halasana, Matsyasana, Shanti asana Pranayama: Bhastrika, Bhramari, NadiShodhan	
Instructional Hours	10
Total Hours	30

Text book:

1. “Value Education ”, compiled by Curriculum Development cell, Nehru Arts and Science College.

Tools for Assessment

25 marks	25 marks
Comprehensive test in Units I to III for 25 marks during CIA III of Sem. II	Perform 02 Yoga postures for Practical exam to be conducted during the mid. of Sem. II

Mapping

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	-	-	H	L	M	H	H	-	L	-	-	L
CO2	-	-	-	L	M	H	M	H	-	L	-	-	L
CO3	-	-	-	L	M	H	S	H	-	L	-	-	L
CO4	-	-	-	L	L	H	M	H	-	L	-	-	L
CO5	-	-	-	L	L	H	M	H	-	L	-	-	L

H-High; M-Medium; L-Low

Course Designed by	Verified by HOD
Karthi M	Dr. N Kavitha

Course Code	Title		
23U1TAM303	Part -I : Arunthamizh (அருந்தமிழ்)		
Semester: III	Credits: 3	CIA: 20 Marks	ESE: 55 Marks
Course Objective	தமிழ்க் காப்பியங்களின் வழி அறம் சார்ந்த சிந்தனைகளை உருவாக்குதல்		
Course Category	Skill Development (மாணவர்களின் மொழித்திறனை ஊக்குவித்தல்)		
Development Needs	Global/Regional (உலக அளவில் தமிழ் மொழியின் அவசியத்தை உணர்த்துதல்)		
Course Description	மாணவர்களின் மொழித்திறனை ஊக்குவித்தல் மற்றும் உலக அளவில் தமிழ் மொழியின் அவசியத்தை உணர்த்துதல்		
Course Outcomes	Teaching Methods	Assessment Methods	
CO 1	தமிழ் நூல்களில் அணிநலம் அறிதல், அறம் சார்ந்த சிந்தனைகளை வளர்த்தல்.	விரிவுரை/ காணொளிப்பட விளக்கம்	ஒப்படைவு
CO 2	தமிழ் இலக்கிய வகைகளைக் கூறுவதன் மூலம் தமிழின் இலக்கிய வளத்தை உணர்ச்செய்தல்.	விரிவுரை	குழுத்திட்டம்
CO 3	மாணவர்களிடையே காலத்திற்கேற்ப மொழிவளர்ச்சியை உருவாக்குதல்.	விரிவுரை/ காணொளிப்பட விளக்கம்	ஒப்படைவு
CO 4	நாட்டின் சிறந்த குடிமக்களாக மாணவர்களை உருவாக்குதல்.	விரிவுரை// குழு விவாதம்	கருத்தரங்கு
CO 5	மாணவர்களின் மனநலத்தை வளர்த்தல்.	விரிவுரை/ குழு விவாதம்	கருத்தரங்கு
Offered by	தமிழ்த்துறை		
Course Content : Arunthamizh (அருந்தமிழ்)		Instructional Hours / Week : 4	
Unit	Description	Text Book	Chapters
I	காப்பியங்கள்	1.சிலப்பதிகாரம் 2.மணிமேகலை 3.சீவகசிந்தாமணி 4.கம்பராமாயணம்	1.1அடைக்கலக்காதை (மதுரைக்காண்டம்-பகுதி- 15) 1.2.பீடிகைக் கண்டுபிறப்புணர்ந்தக் காதை-பகுதி-9) 1.3.பூமகள் இலம்பகம் (பகுதி- 11-2347-2377 பாடல்கள்) 1.4சுந்தரகாண்டம்(கடல் தாவுப்படலம் 1-10பாடல்கள்)
Instructional Hours		12 Hours	
Suggested Learning Methods: நாடக முறையில் கலந்துரையாடல்			
II	சைவ,வைணவ, சுவடியியல்	1. தேவாரம் 2..நாலாயிரத்திவ்வியப் பிரபந்தம் 3.சுவடியியல்	2.1.திருநல்லூர்ப் பெருமணம் (பாடல் எண்-4137-4146) 2.2.ஆண்டாள் திருப்பாவை - (பாடல் எண்- 474-483) 2.3.சுவடியியல் - அறிமுகம் 2.4 சைவம் தமிழுக்குச் செய்த தொண்டு 2.5 வைணவம் தமிழுக்குச் செய்த தொண்டு
Instructional Hours		12 Hours	
Suggested Learning Methods : பக்தி பாசுரங்கள் கலந்துரையாடல்			

III	மொழித்திறன் (இலக்கணம்)	1.நன்னூல் 2.தொல்காப்பியம்	3.1 நூல் வரலாறு (முதல் நூல், வழி நூல், சார்பு நூல்) 3.2 மாணாக்கர் வரலாறு 3.3 ஆசிரியர் வரலாறு 3.4 எண்வகை மெய்ப்பாடுகள்										
Instructional Hours			12 Hours										
Suggested Learning Methods :		மொழித்திறன் வாயிலாக பிழையின்றி எழுதும் திறன் பெற்றமை											
IV	நாட்டுப்புற வழக்காறுகள்	நாட்டுப்புறவியல்	4.1. பழமொழிகள் 4.2. விடுகதைகள் 4.3 தமிழர்க்கலைகள் 4.4 சிறுதெய்வ வழிபாடு மட்டும் 4.5 விளையாட்டுகள் (சிறுவர்,சிறுமியர் மட்டும்)										
Instructional Hours			12 Hours										
Suggested Learning Methods :		நாட்டுப்புறவியல் வழி நாட்டுப்புற மக்களின் வாழ்வியலை அறியச்செய்தல்											
V	இலக்கிய வரலாற்றுத் திறன்	தமிழ் இலக்கிய வரலாறு	1. காப்பியத்தின் தோற்றமும் வளர்ச்சியும் 2. பக்தி இலக்கியத்தின் தோற்றமும் வளர்ச்சியும் 3. தமிழக நாட்டுப்புறவியல் வரலாறு										
Instructional Hours			12 Hours										
Suggested Learning Methods:		பாடத்திட்டத்தில் கொடுக்கப்பட்டுள்ள இலக்கிய வரலாற்றினை உணர்த்துதல்											
Total Hours		60 Hours											
Text Books	இளங்கலை இரண்டாம் ஆண்டு தமிழ் மாணவர்களுக்குரிய பாடநூல் “அருந்தமீம்” தொகுப்பு: தமிழ்த்துறை, நேரு கலை மற்றும் அறிவியல் கல்லூரி, கோயம்புத்தூர்.												
Reference Books	நாட்டுப்புறவியல் ஓர் ஆய்வு: டாக்டர் ச. சக்திவேல் விஜயா பதிப்பகம் சென்னை. தமிழண்ணல் - புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு, மீனாட்சிப் புத்தக நிலையம், மதுரை- 625 001.												
Web. URLs	https://youtu.be/EJcYgyw7e94 , https://youtu.be/Mgtwmerl4yw												
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Seminar	Assignment	Group Project	Total							
4	4	5	2	2	3	20							
Mapping													
PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	L	H	L	L	H	M	L					
CO2	M	L	H	L	H	L	M	H					
CO3	H	L	L	L	H	M	H	M					
CO4	M	L	H	L	M	M	H	L					
CO5	H	L	M	L	H	L	M	H					
H-High; M-Medium; L-Low													
Course designed by							Verified by						
Dr. S. Sathesh Kumar							Dr. A. Sridevi						

Course Code	Title		
23U1HIN303	Part I - Sahityak Hindi (साहित्यिक हिंदी)		
Semester: III	Credits: 3	CIA: 20 Marks	ESE: 55 Marks
(Common to all UG Programmes)			
Course Objective	चुनिंदा कविताओं के माध्यम से हिंदी कविता की उत्पत्ति और विकास को समझना। संकलन में उपलब्ध कराए गए सर्वोत्तम नमूनों का उपयोग करते हुए कविता की सराहना।		
Course Category	Skill Development		
Development Needs	National		
Course Description	Improves Writing Skills.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	छात्र हिंदी भाषा से अच्छी तरह वाकिफ हो सकेंगे।	Role play	Assignment
CO 2	व्यक्तिगत अनुभवों की पहचान करें जिनका उपयोग कविताएँ लिखते समय किया जा सकता है।	Group learning Acting	Seminar
CO 3	कविता की मूल शब्दावली और व्यावहारिक तत्वों को समझें।	Story Narration	Assignment
CO 4	छात्रों को रचनात्मक लेखन में अच्छा अभ्यास मिलेगा।	Group learning and Work sheets	Group Project
CO 5	पाठ्यक्रम संवादी हिंदी में पारंगत होने में मदद करता है।	Worksheets and Exercises	Seminar
Offered by	Hindi		
Course Content	Instructional Hours / Week : 4		
Unit	Description	Text Book	Chapters
I	नाटक - सत्यमेव जयते - (श्री सूर्यनारायण मूर्ति)	1	3
Instructional Hours			12
Suggested Learning Methods : Visual Learning			02 Hrs
II	प्राचीन काव्य : कबीर के दोहे (10 दोहा), सूरदास के पद (4 पद) (काव्य तरंग)	1	2
Instructional Hours			12
Suggested Learning Methods : Auditory			02 Hrs
III	1. आधुनिक काव्य : पुष्प की अभिलाषा- माखनलाल चतुर्वेदी, जलियांवाला बाग में बसंत - सुभद्राकुमारी चौहान, शक्ति और क्षमा - रामधारी सिंह दिनकर 2. संक्षिप्तीकरण	1	3
Instructional Hours			12
Suggested Learning Methods : Comprehensive Writing			02 Hrs
IV	अलंकार : 1) अर्थ अलंकार और शब्द अलंकार, 2) दिए गए चित्र पर कुछ वाक्य लिखना ।	1	2
Instructional Hours			12
Suggested Learning Methods : Auditory, Visual, Comprehensive			02 Hrs

V	गद्यांश लेखन, वाक्य शुद्धि, शब्द शुद्धि, अनेक शब्द के लिए एक शब्द		1	4									
Instructional Hours				12									
Suggested Learning Methods : comprehensive writing				02 Hrs									
Total Hours				60 Hrs									
Text Books	1. नाटक - सत्यमेव जयते - (श्री सूर्यनारायण मूर्ति) 2. काव्य सुमन - राजपाल एंड सन्स												
Reference Books	1. हिंदी नाटक और रंगमंच - डॉ राम कुमार वर्मा 2. ओंकार नाथ वर्मा , सामान्य हिंदी अरिहंत प्रकाशन इंडिया लिमिटेड												
Web. URLs	1. www.webdunia.com 2. https://www.hindikunj.com 3. www.bhashaindia 4. www.hindisamay.com												
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Group Project	Total							
4	4	5	2	2	3	20							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	M	M	L	H	M					
CO2	H	H	H	L	L	H	M	H					
CO3	L	M	L	L	M	H	M	L					
CO4	M	M	M	M	H	L	L	L					
CO5	M	L	L	M	H	L	L	H					
H-High; M-Medium; L-Low													
Course designed by							Verified by						
Dr.S.Swarnalatha							Dr.S.Swarnalatha						

Course Code	Title		
23U1MAL303	Part - I : Kavithayum Smaranayum (കവിതയും സ്മരണയും)		
Semester: III	Credits: 3	CIA: 20 Marks	ESE: 55 Marks
(Common to all UG Programmes)			
Course Objective	കവിതാ സാഹിത്യ പരിചയത്തോടൊപ്പം പുതു കവിതകളെ കുറിച്ച് അവബോധവും ആസ്വാദനവും ഉയർത്തുക. വിദ്യാർത്ഥികൾക്ക് മാതൃകയാവുന്ന സമൂഹത്തിലെ ഉന്നത വ്യക്തിത്വങ്ങളെ പരിചയപ്പെടുത്തുക		
Course Category	Skill Development		
Development Needs	Regional		
Course Description	Developing Personality and Self confidence		
Course Outcomes	Assessment Methods	Assessment Methods	
CO 1	കവിതയിലൂടെയുള്ള സംവേദനം	Smart boards/ Chalk and Talk	Assignment
CO 2	പ്രകൃതിയുടെ നിസ്വാർത്ഥമായ പ്രവർത്തനങ്ങൾ	Group learning	Seminar
CO 3	അധ്യാപക വിഭാഗത്തിനിടയിൽ അവകാശ ബോധം ഉണ്ടാക്കുന്നു	Peer Teaching	Assignment
CO 4	സമൂഹത്തിന് മൂല്യബോധമുണ്ടാക്കുന്ന പ്രവർത്തനങ്ങൾ	Group learning	Group Project
CO 5	സമൂഹത്തിൽ അധ്യാപനത്തിന്റെ പ്രാധാന്യം	Smart boards/ Chalk and Talk	Assignment
Offered by	Malayalam		
Course Content	Instructional Hours / Week : 4		
Unit	Description	Text Book	Chapters
I	നവീന കവിത - പുതു കവിതകൾ	1	4
Instructional Hours			12
Suggested Learning Methods : Visual Learning			02 Hrs
II	നവീന കവിത - പുതു കവിതകൾ	1	3
Instructional Hours			12
Suggested Learning Methods : Auditory Method			02 Hrs
III	കണ്ണീരും കിനാവും - വി.ടി.ഭട്ടതിരിപ്പാട്	1	3
Instructional Hours			12
Suggested Learning Methods : : Comprehensive writing			02 Hrs
IV	കണ്ടൽക്കാടുകൾക്കിടയിൽ എന്റെ ജീവിതം - കല്ലേൻ പൊക്കുടൻ	1	2
Instructional Hours			12
Suggested Learning Methods: Auditory & Visual Methods			02 Hrs
V	കണ്ടൽക്കാടുകൾക്കിടയിൽ എന്റെ ജീവിതം - കല്ലേൻ പൊക്കുടൻ	1	3
Instructional Hours			12
Suggested Learning Methods : Comprehensive Writing			02 Hrs
Total Hours			60 Hrs
Text Books	1. നവീന കവിത (പുതു കവിതകൾ) - നെഹ്റു കോളേജ് മലയാള വിഭാഗം എഡിറ്റു ചെയ്ത 10 കവിതകൾ . 2. കണ്ണീരും കിനാവും - വി.ടി.ഭട്ടതിരിപ്പാട് -ഡി.സി. ബുക്ക്സ്		

	3. കണ്ടൽകാടുകൾക്കിടയിൽ എന്റെ ജീവിതം - കല്ലേൻ പൊക്കുടൻ - ഗ്രീൻ ബുക്സ്													
Reference Books	1. മലയാള കവിതാപഠനങ്ങൾ - സച്ചിദാനന്ദൻ ,മാത്യഭൂമി ബുക്സ്, കോഴിക്കോട് 2. കവിതാ സാഹിത്യ ചരിത്രം - ഡോ.എം.ലീലാവതി കേരള സാഹിത്യ അക്കാദമി, തൃശൂർ 3. ആധുനികത മലയാള കവിതയിൽ എൻ. അജയകുമാർ , പഠനസംഘം, ചങ്ങനാശ്ശേരി 4. സാഹിത്യം മലയാളത്തിൽ ആത്മകഥ - നടുവട്ടം ഗോപാലകൃഷ്ണൻ , ഭാഷാ ഇൻസ്റ്റിറ്റ്യൂട്ട് , തിരുവനന്തപുരം													
Web. URLs :	literature">http://www.keralaculture.org>literature													
Tools for Assessment (20 Marks)														
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz									Total
4	4	5	2	2	3									20
Mapping														
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	H	L	H	M	H	H	H	H						
CO2	M	L	H	L	H	M	H	H						
CO3	H	L	L	M	M	H	M	H						
CO4	M	L	L	M	L	H	H	M						
CO5	M	L	L	M	H	L	H	M						
H-High; M-Medium; L-Low														
Course designed by							Verified by Chairman							
Ms.RAJANI N.							Dr. SMITHA C.R.							

Course Code	Title		
23U1FRN303	Part – I : Le Francais General – III		
Semester : III	Credits : 3	CIA : 20 Marks	ESE : 55 Marks
(Common to all UG Programmes)			
Course Objective	Acquisition of standard French by knowing more about the culture.		
Course Category	Skill Development		
Development Needs	Global		
Course Description	Improved understanding and communication		
Course Outcomes	Teaching Methods	Assessment Methods	
CO 1	Learn about the other French speaking nations, hobbies,	Lectures/ Tutorial	Assignment
CO 2	Le passé compose, l'imparfait	Group Learning	Assignment
CO 3	Social network, les indicateurs de temps	Peer Teaching	Seminar
CO 4	Le discours direct et indirect	Video Lecture / Lectures	Group Project
CO 5	To learn to answer questions orally in French	Group learning	Assignment
Offered by	Department of French		
Course Content	Instructional Hours / Week : 4		
Unit	Description	Text Book	Chapters
I	La langue francaise en action	1	1
Instructional Hours			12
Suggested Learning Methods : Visuals			
II	Aller a la rencontre des autres	1	2
Instructional Hours			12
Suggested Learning Methods : Group discussions			
III	Enrichir son reseau	1	3
Instructional Hours			12
Suggested Learning Methods : Group discussions			
IV	Vivre l'information	1	4
Instructional Hours			12
Suggested Learning Methods : Visuals			
V	Interroger le passe	1	5
Instructional Hours			12
Suggested Learning Methods : Comprehensive writing			
Total Hours			60

Text Books	1. Saison 2 Méthode de Français – Marie-Noëlle Cocton, Anouchka De Oliveira, Dorothée Duplex (Unit 0 to 4)													
Reference Books	1. Connexions 2 Methode de Français Régine Mérieux , Yves Loiseau													
Web. URLs	1. www.academia.edu													
Tools for Assessment (20 Marks)														
CIA I	CIA II			CIA III			Assignment		Seminar		Quiz		Total	
4	4			5			2		2		3		20	
Mapping														
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	-	-	H	M	H	H	-	-	-	-	-	-	-	
CO2	-	-	H	L	H	M	-	-	-	-	-	-	-	
CO3	-	-	-	M	M	H	-	-	-	-	-	-	-	
CO4	-	-	L	M	L	H	-	-	-	-	-	-	-	
CO5	-	-	L	-	H	-	-	-	-	-	-	-	-	
H-High; M-Medium; L-Low														
Course designed by							Verified by Chairman							
Mr. D. Balaji							Dr. R. Malathi							

Course Code	Title		
23U2ENG303	Part – II : Communicative English – I		
Semester : III	Credits : 3	CIA : 20 Marks	ESE : 55 Marks
(Common to All UG Programmes)			
Course Objective	To enable the students to learn the different genres of literature and gain a better understanding of the English language.		
Course Category	Skill Development		
Development Needs	Global		
Course Description	SD: Helps to develop LSRW skill		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Execute moral, ethical and literary merits and relate it to the society.	Lecture/Tutorial	Assignment
CO 2	Exhibit a comprehensive knowledge of poetry and execute life skills and human values through it.	Lecture/Tutorial	Assignment
CO 3	Develop reading strategies with enriched vocabulary, through short story.	Lecture/Tutorial	Speaking
CO 4	Identify the use of English language through the study of Grammar and use them in specific contexts.	Lecture/Tutorial	Reading
CO 5	Interpret their understanding of English works in LSRW mode	Lecture/Tutorial	Writing
Offered by	Department of English		
Course Content	Instructional Hours / Week : 4		
Unit	Description	Text Book	Chapters
I	Prose J.B. Priestley - Travel by Train R.K. Narayan - Headache E.M. Forster - Tolerance	1	1 - 3
Instructional Hours			12
Suggested Learning Methods : Intensive Reading			
II	Poetry William Blake - The School Boy Rudyard Kipling - If Sarojini Naidu - The Queen's Rival	1	4 - 6
Instructional Hours			12
Suggested Learning Methods : Scaffolding Method			
III	Short Stories O. Henry - After Twenty Years Edgar Allan Poe – Tell - Tale Heart Frank R. Stockton - The Lady or The Tiger?	1	7 - 9
Instructional Hours			12
Suggested Learning Methods : Flipped Learning			

IV	Herman Melville-Moby Dick (Abridged Version)	1	10 - 13										
Instructional Hours			12										
Suggested Learning Methods : Flipped Learning													
V	<p>Oral & Written Communication (UnitI–IV) Listening – Comprehension practice from Poetry, Prose, Online Voice Practice, observing / viewing E-content (with subtitles), Guest / Invited Lectures, Conference/ Seminar Presentations & Tests, and DD National News Live, BBC, CNN, VOA etc</p> <p>Speaking – In Group Discussion Forum, participate in the Turn Taking, and Conversation Management, Debating, Defending / Mock Viva Voce, Seminar Presentations on Classroom-Assignments, and Peer-Team-interactions.</p> <p>Reading–Different Reading Strategies in Poetry, Prose, Novel, Newspaper etc</p> <p>Writing – Modals, Concord, E-Mail & Report Writing, Spotting the Errors and How to avoid them, Sentence Completion, Prepositions, Idioms and Phrases, Collocation.</p>	1	14 - 17										
Instructional Hours			12										
Suggested Learning Methods : Activity Based Learning													
Total Hours			60										
Text Books	Unit I–V: Compiled by the Department of English												
Reference Books	CLIL (Content & Language Integrated Learning) – Module by TANSCHENOTE:(Text: Prescribed chapters or pages will be given to the students by the department												
Web. URLs													
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assignment	Speaking	Reading	Total							
4	4	5	2	2	3	20							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	-	H	-	M	M	H	M	H	H	M	H	M
CO2	M	-	H	-	H	M	H	M	H	H	M	H	M
CO3	M	-	H	-	H	H	H	H	H	H	M	H	M
CO4	M	L	H	-	H	-	H	H	H	H	M	H	H
CO5	H	M	H	-	H	H	H	H	H	H	H	H	M
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Adappatu Ancy Antony							Dr. R. Malathi						

Course Code	Title		
23U3CJC304	Core Paper VII: Computer Networks		
Semester: III	Credits: 3	CIA: 20 Marks	ESE: 55 Marks
Common to DCFS / AIML			
Course Objective	To make the students understand the concepts of Computer Networks.		
Course Category	Employability		
Development Needs	Global		
Course Description	To learn the fundamentals of networking systems, their architecture, function and operation and how those fundamentals are reflected in current network technologies.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Relate the uses of computer networks.	Collaborative Learning	Group Discussion
CO 2	Understand the concept of transmission technologies in networks	Video Lectures	Poster Presentation
CO 3	Interpret the data link layer and Bluetooth architecture	Brainstorming	Assignment
CO 4	Identify the routing algorithms for data transmission and transport service primitives	Interactive Lecture	Seminar
CO 5	Apply the concept of cryptographic technologies for network security	Lecture / Class Projects	Quiz
Offered by	DCFS		
Course Content	Instructional Hours / Week : 4		
Unit	Description	Text Book	Chapters
I	Introduction: The Uses of Computer Networks - Network Hardware - Network Software - Reference Model	1	1
Instructional Hours			12
Suggested Learning Methods: Collaborative Learning			
II	The Physical Layer: Guided Transmission Media - Communication Satellites - The Public Switched Telephone Network - Structure of the telephone system - The Local Loops - S Modems - Wireless Local loops	1	3
Instructional Hours			12
Suggested Learning Methods : Scenario Based Learning			
III	The Data Link Layer: Data Link Layer – Design - Issues- Error Detection & Correction. The medium access control sub layer - The channel allocation problem. Bluetooth: Bluetooth architecture - Applications. Data Link Layer Switching: Repeaters, Hubs, Bridges, Switches, routers, and gateways	1	5
Instructional Hours			12

Suggested Learning Methods : Blended Learning														
IV	The Network Layer: Network Layer Design issues - Routing algorithms - The Optimality principle shortest path routing – flooding - distance vector routing - routing for mobile hosts.								1	7				
	The Transport layer: The transport services - service provided to the upper layers, transport service primitives.													
Instructional Hours										12				
Suggested Learning Methods : Discussion Based Learning														
V	The Presentation Layer: DNS - The Domain Name System - Electronic Mail. Architecture and service the user agent.								1	10				
	Network Security: Cryptography-Symmetric Key algorithms, DES - Public-key algorithms - Digital signature - symmetric key signature - public key signatures													
Instructional Hours										12				
Suggested Learning Methods : Experiential Learning														
Total Hours										60Hrs				
Text Books		1. Andrew S. Tanenbaum; Computer Networks, 4th Edition, PHI												
Reference Books		1. Achyut Godbole, Data Communication and Networks, 2007, TMH. 2. Uyles Black, Computer Networks: Protocols, Standards, and Interfaces, 2nd ed.,PHI												
Web. URLs		www.geekforgeeks.com/compter-networks.com												
Tools for Assessment 20 Marks)														
CIA I		CIA II		CIA III		Group Discussion		Assignment		Seminar		Total		
4		4		5		2		2		3		20		
Mapping														
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	H	H	M	M	H	M	M	H	H	M	M	H	H	
CO2	M	M	H	M	H	M	M	M	H	M	M	H	H	
CO3	H	H	M	H	M	L	H	L	M	L	H	L	M	
CO4	H	H	L	M	H	H	M	H	H	H	M	H	H	
CO5	H	M	M	H	M	M	H	M	M	M	H	M	M	
H-High; M-Medium; L-Low														
Course designed by							Verified by Chairman							
Dr. B. Karthikeyan							Dr. J. Maria Shyla							

Course Code	Title		
23U3CKC306	Core Paper VIII: Java Programming		
Semester: III	Credits: 3	CIA: 20 Marks	ESE:55 Marks
(Common to B. Sc. AIML / B. Sc. DCFS / BCA)			
Course Objective	To gain knowledge about basic Java language syntax and semantics to write java programs and understand the principles of classes, methods, inheritance, polymorphism and packages.		
Course Category	Entrepreneurship		
Development Needs	Global		
Course Description	To understand the Object-Oriented Paradigm for developing programs using Control statements, Arrays, Packages, Interfaces, Exceptional Handling, Multi-threading and create networking applications		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Remember the fundamental concepts of Object-oriented Programming.	Lecture / Demonstration	Class Participation
CO 2	Develop simple Java programs with Control statements and arrays.	Demonstration, Constructivist learning	Quiz
CO 3	Apply the principles of packages and interfaces.	Constructivist learning Demonstration	Seminar
CO 4	Design Java application using the concepts of Exception Handling and Multithreading.	Lecture, Constructivist learning,	Seminar
CO 5	Develop applications using IO Streams and AWT.	Problem-based Teaching, Constructivist learning	Assignment
Offered by	Computer Applications		
Course Content	Instructional Hours / Week : 4		
Unit	Description	Text Book	Chapters
I	Fundamentals of Object-Oriented Programming: Object-Oriented Paradigm – Basic Concepts of Object-Oriented Programming – Benefits of Object-Oriented Programming – Application of Object-Oriented Programming. Java Evolution: History – Features – How Java differs from C and C++ – Java and Internet – Java and www –Web Browsers. Overview of Java: simple Java program – Structure – Java Tokens – Statements – Java Virtual Machine-Command Line Arguments.	1	1,2,3
Instructional Hours			12
Suggested Learning Methods: Code Debugging			
II	Constants, Variables, Data Types, Operators and Expressions, Decision Making and Branching: if, if...else, nested if, switch,?: Operator, Decision Making and Looping: while, do, for – Jumps in Loops - Labelled Loops, Classes, Objects and Methods. Arrays: One Dimensional Array-Creating an Array- Two Dimensional Array.	1	4,5,6,7 & 8
Instructional Hours			12
Suggested Learning Methods: Code Debugging			
III	Interfaces: Multiple Interface -Introduction-Defining Interface-Extending Interface-Implementing Interface-Accessing Interface Variables. Packages: Introduction-Java API Packages-Using System Packages-Naming Conventions-Creating Packages-Accessing a Package-Using a Package-Adding a Class to a	1	10,11 & 12

Package-Hiding Classes-Static Import.													
Instructional Hours			12										
Suggested Learning Methods: Simple Application Development													
IV	<p>Exception Handling: Fundamentals-Hierarchy of the Exception Classes- Types of Exception –Exception Class-Uncaught Exceptions-Handling Exception-User Defined Exception.</p> <p>Multithreaded Programming: The Java Thread Model-Concept of Thread-Runnable Interface-Thread Class-Thread Creation-Thread's Life Cycle-Thread Scheduling-Synchronization and Deadlock-Inter Thread Communication-Joining Threads-Suspending, Resuming and Stopping Threads-JDBC.</p>	2	10 & 11										
Instructional Hours			12										
Suggested Learning Methods: Simple Application Development													
V	<p>Input/Output Classes: Input and Output Operations-Hierarchy of Classes in java.io Package-File Class-InputStream and OutputStream Classes-FileInputStream and FileOutputStream Classes-Reader and Writer Classes-RandomAccessFile Class-Stream Tokenizer.</p> <p>Applets: Applet Basics-Applet Life Cycle-Running Applets-Methods of the Applet Class-Graphics Class-Color Class-Font Class-Limitations of Applets. Java Networking -INetAddress-User Datagram Protocol, Internet Control Protocol, UDP Programming in Java Transmission Control Protocol, Multithreading & TCP Sockets Programming in Java.</p>	2	16,18 & 19										
Instructional Hours			12										
Suggested Learning Methods: Simple Application Development													
Total Hours			60										
Text Books	<ol style="list-style-type: none"> 1. E. Balagurusamy, Programming with Java – A Primer, Tata McGraw Hill Publication, 3rd Edition, 2007 2. ISRD Group, Introduction to Object Oriented Programming Through Java, Tata McGraw Hill Publication, Forth Reprint 2008. 3. Java Network Programming, 4th Edition, Orielly Publication. 												
Reference Books	<ol style="list-style-type: none"> 1. Patrick Naughton & Hebert Schildt, The Complete Reference Java 2, Tata McGraw Hill Publication, 3rd Edition, 2002 2. John R. Hubbard, Programming with Java, Tata McGraw Hill Publication, 2nd Edition, 2009. 												
Web. URLs	https://www.w3schools.com/java/default.asp												
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
4	4	5	2	2	3	20							
Mapping													
CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	-	M	H	-	M	H	H	H	H	M	M
CO2	H	H	-	M	H	-	M	H	H	H	H	M	M
CO3	H	H	-	M	H	-	M	H	H	H	H	H	H
CO4	H	H	-	M	H	-	M	H	H	H	H	H	H
CO5	H	H	-	M	H	-	M	H	H	H	H	H	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. K. Selvavinayaki							Dr. K. Selvavinayaki						

Course Code	Title		
23U3DFP304	Core Paper IX - Practical in Java Programming		
Semester: III	Credits: 2	CIA: 20 Marks	ESE: 30 Marks
Course Objective	To enable the students to develop problem solving skills and programming ability in Java Language		
Course Category	Skill Development		
Development Needs	Global		
Course Description	The course is based on the Java experience on applets, packages and exception handling concepts		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Apply the concepts of string, array and multiple inheritance.	Demonstration Method	Laboratory Experiments
CO 2	Implement multithreading, exception handling concepts.		
CO 3	Apply the concept of package.		
CO 4	Develop the programs for the concepts of Applets and AWT.		
CO 5	Implement the concept of file operations.		
Offered by	DCFS		
Course Content		Instructional Hours / Week : 4	
Programme	Description		
1	Write a Java Applications to extract a portion of a character string and print the extracted string		
2	Write a Java program to insert an element (specific position) into an array.		
3	Write a Java Program to implement the concept of multiple inheritance using Interfaces		
4	Write a program to implement the concept of Exception Handling using predefined exception.		
5	Write a Java Program to create an Exception called payout-of-bounds and throw the exception.		
6	Write a Java Program to implement the concept of multithreading with the use of any three multiplication tables and assign three different priorities to them.		
7	Write a Java Program to draw several shapes in the created windows.		
8	Write a Java program to import classes from user defined package and creating package.		
9	Write a Java Program to create a frame with four text field's name, street, city and pin code with suitable tables. Also add a button called my details. When the button is clicked its corresponding values are to be appeared in the text fields.		

10	Write a Java Program to create a frame to implement checkbox group.												
11	Write a Java Program to read the data from the file using DataInputStream.												
12	Write a Java Program to write the data to the existing file using BufferedOutputStream.												
Instructional Hours												60	
Tools for Assessment (20 Marks)													
Application of Logic	Program Creativity	Program Debugging	Test 1	Test 2	Observation Note Book	Total							
3	3	3	4	4	3	20							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	H	H	H	H	H	M	H	M	H
CO2	M	M	M	M	H	M	M	M	M	H	M	H	H
CO3	H	H	M	H	M	M	L	H	H	H	M	H	M
CO4	M	H	L	M	H	H	H	M	H	H	H	M	H
CO5	M	M	H	H	M	H	M	H	M	H	H	H	M
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. T. Ramaprabha							Dr. J. Maria Shyla						

Course Code	Title		
23U3DFA303	Allied Paper III: Data Structures		
Semester: III	Credits: 4	CIA: 25 Marks	ESE: 75 Marks
Course Objective	To enable the students to understand about the various techniques such as Linked list, Searching and Sorting, apply them to solve complex programs.		
Course Category	Employability		
Development Needs	Global		
Course Description	Extensive use of Data Structure in globally ensures high employment, increases the compensation and helps individuals to connect with the advanced technologies.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Understand the representation of Arrays, Stacks and Queues.	Lecture	Assignment
CO 2	Solve the problems using Queues and List.	Tutorial	Seminar
CO 3	Demonstrate the different types of Tree representation and Graph.	Lecture	Quiz
CO 4	Design algorithm to perform different types of sorting.	Tutoria	Program Execution
CO 5	Construct Symbol, Hash and File organization and apply to solve real world problems using appropriate Data Structure.	Class Project	Program Execution
Offered by	DCFS		
Course Content		Instructional Hours / Week : 3	
Unit	Description	Text Book	Chapters
I	Introduction: Overview - How to create Programs - How to Analyze Programs. Arrays: Axiomatization - Sparse Matrices - Representation of Arrays. Stacks & Queues: Fundamentals - Evaluation of Expressions - Multiple Stacks and Queues.	1	1,2,3
Instructional Hours			9
Suggested Learning Methods : Seminar Preparation and Presentation			
II	Recursion: Recursive definition and process - recursion in C - Writing Recursive program - simulating Recursion - efficiency of recursion. Queues and List: The queue and its sequential representation - Linked list - List in C - An example Simulation using linked list - other list structure.	2	3.4
Instructional Hours			9
Suggested Learning Methods : Quiz Participation			
III	Trees: Binary Tree - Binary Tree representation - the Huffman algorithm - representing list as Binary - Trees and their applications - Game trees. Graphs: A Flow problem - The linked representation of Graph - Graph traversal and spanning forests	2	5,8

Instructional Hours												9	
Suggested Learning Methods : Assignment													
IV		Internal Sorting: Insertion Sort - Quick Sort - 2-Way Merge Sort - Heap Sort - Shell Sort. External Sorting: Storage Devices - K-Way Merging- Sorting with Tapes: Balanced Merge Sorts - Polyphase Merge.								1		7,8	
Instructional Hours												9	
Suggested Learning Methods : Blended Learning													
V		Symbol Table: Static Tree Tables - Dynamic Tree Tables - Hash Tables: Hashing Functions- Overflow Handling. Files: Files, Queries and Sequential Organizations- Index Techniques - File Organization: Sequential Organization- Random Organization- Linked Organization.								1		9,10	
Instructional Hours												9	
Suggested Learning Methods : Program Development													
Total Hours												45 Hrs	
Text Books		1. Ellis Horowitz & Sartaj Sahni, Fundamentals of Data Structures , Galgotia Publication. 2. Aaron M. Tenenbaum, Yedidyah Langsam, Moshe J. Augenstein, Data Structure using C , Pearson Education, 2009.											
Reference Books		1. Ellis Horowitz, Sartaj Sahni & Sanguthevar Rajasekaran, Fundamentals of Computer Algorithms , Galgotia Publications Pvt Ltd, 1999. 2. Jean-Paul Tremblay and Paul G. Sorenson, An Introduction to Data Structures with Applications , Second Edition, Tata McGraw Hill, 2008 3. Mark Allen Weiss, Data Structures and Algorithm Analysis in C , Florida International University, Pearson Education, Second Edition, 1997.											
Web. URLs		https://www.youtube.com/watch?v=qH6yxkw0u78											
Tools for Assessment (25 Marks)													
CIA I		CIA II		CIA III		Assignment		Seminar		Quiz		Total	
5		5		6		3		3		3		25	
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	M	H	H	H	H	H	H	H	M	H
CO2	M	M	M	M	H	M	M	M	H	M	H	M	M
CO3	H	H	M	H	M	M	L	H	H	H	M	H	H
CO4	M	H	L	M	H	H	H	M	H	H	H	M	H
CO5	M	M	H	H	M	H	M	H	H	M	H	M	H
H-High; M-Medium; L-Low													
Course designed by								Verified by Chairman					
Ms. G. Bharathi								Dr. J. Maria Shyla					

Course Code		Title		
23U4DFZ301		Skill Based Paper I: Practical in Computer Networks		
Semester: III		Credits: 3	CIA: 30 Marks	ESE: 45 Marks
Course Objective		To enable the students to develop problem solving skills and programming ability in Computer Networks		
Course Category		Skill Development		
Development Needs		Global		
Course Description		The course uses Wireshark tool for capturing and analyzing the various network protocols.		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	Understand about port scanning	Demonstration Method	Laboratory Experiments	
CO 2	Examine the utility functions in computer networks			
CO 3	Analyse the different types of protocols			
CO 4	Demonstrate IP Fragmentation Packet Analysis			
CO 5	Identify Operating System using Traceroute and TTL Value			
Offered by	DCFS			
Course Content			Instructional Hours / Week : 3	
Programme	Description			
1	Routing Logic Lab.			
2	Capturing and analyzing Address Resolution Protocol (ARP) using Wireshark tool.			
3	Capturing and analyzing Internet Control Message Protocol (ICMP) using Wireshark tool.			
4	Capturing and analyzing Transmission Control Protocol (TCP) using Wireshark tool.			
5	Capturing and analyzing User Datagram Protocol (UDP) using Wireshark tool.			
6	Capturing and analyzing Dynamic Host Configuration Protocol (DHCP) using Wireshark tool.			
7	Capturing and analyzing Domain Name System Protocol (DNS) using Wireshark tool.			
8	Capturing and analyzing Hypertext Transfer Protocol (HTTP) using Wireshark tool.			
9	Capturing and analyzing File Transfer Protocol (FTP) using Wireshark tool.			
10	IP Fragmentation Packet Analysis using Wireshark tool.			
11	How To Identify Operating System Using Traceroute and TTL using Wireshark tool.			
12	How To Identify Operating System Using TTL Value And Ping Command.			
			Instructional Hours	45

Tools for Assessment (30 Marks)													
Application of Logic	Program Creativity	Program Debugging	Test 1	Test 2	Observation Note Book	Total							
4	4	4	7	7	4	30							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	H	H	H	H	H	M	H	M	H
CO2	M	M	M	M	H	M	M	M	M	H	M	H	H
CO3	H	H	M	H	M	M	L	H	H	H	M	H	M
CO4	M	H	L	M	H	H	H	M	H	H	H	M	H
CO5	M	M	H	H	M	H	M	H	M	H	H	H	M
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. B. Karthikeyan							Dr. J. Maria Shyla						

Course Code	Title		
22U4NM3BT1	Part IV : Basic Tamil – I (அடிப்படைத்தமிழ் - I)		
Semester: III	Credits: 2	CIA: 50 Marks	
(Common to all UG Programmes)			
Course Objective	தமிழ் மொழியைக் கற்பித்தல்-மொழித்திறனை வளர்த்தல்.		
Course Category	Skill Development (மாணவர்களின் மொழித்திறனை ஊக்குவித்தல்)		
Development Needs	Regional (தமிழ் மொழியின் அவசியத்தை உணர்த்துதல்)		
Course Description	மாணவர்களின் மொழித்திறனை ஊக்குவித்தல்		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	தமிழ் எழுத்துக்கள் அறிமுகம் செய்தல் மற்றும் வாசித்தல் ஆகியவற்றின் பயன்பாடு.	குழு விவாதம்	ஒப்படைவு
CO 2	பிறமொழி கற்றல் ஆர்வம் தூண்டல்.	குழு விவாதம்	கருத்தரங்கு
CO 3	பிறமொழி அறிவுத் திறன் மேம்படச்செய்தல்	விரிவுரை/ காணொளிப்பட விளக்கம்	குழுத்திட்டம்
CO 4	வார்த்தை அமைக்கும் திறன் பெறச்செய்தல்.	விரிவுரை/ குழு விவாதம்	குழுத்திட்டம்
CO 5	கையெழுத்துத்திறன் பெறச்செய்தல்.	குழு விவாதம்	குழுத்திட்டம்
Offered by	தமிழ்த்துறை		
Course Content : Basic Tamil – I அடிப்படைத்தமிழ் - I		Instructional Hours / Week : 2 Hours	
Unit	Description	Text Book	Chapters
I	தமிழ் மொழியின் அடிப்படைக் கூறுகள்	இலக்கணம்	1.உயிர்எழுத்துக்கள் 2.மெய் எழுத்துக்கள் 3.உயிர்மெய் எழுத்துக்கள்
Instructional Hours		6 Hours	
Suggested Learning Methods : எழுத்துக்களை எழுதும் மற்றும் வாசிக்கும் திறன் பெற்றமை			
II	சொல் அமைத்தல்	இலக்கணம்	1.ஓர் எழுத்து ஒருமொழி 2.இரண்டுமூதல் ஐந்து எழுத்துச்சொற்கள் 3.தமிழ் மாதங்கள் பெயர்,கிழமைகளின் பெயர் 4.வண்ணங்கள் பெயர், 5.சொல் ஆக்கம்
Instructional Hours		6 Hours	
Suggested Learning Methods : எழுத்துக்களை கொண்டு சொற்களை உருவாக்கும் பயிற்சி பெற்றமை			
III	தொடரமைப்பு	தொடரமைப்பு	1.எழுவாய் 2.செயப்படுபொருள்
Instructional Hours		6 Hours	
Suggested Learning Methods : சொற்களைக் கொண்டு தொடர் உருவாக்கும் பயிற்சி பெற்றமை			
IV	குறிப்பு எழுதுதல்	இலக்கணம்	1.தொடரமைப்பு 2.பத்தி அமைப்பு
Instructional Hours		6 Hours	
Suggested Learning Methods : பத்தி அமைப்பு உருவாக்கும் திறன் பெற்றமை			

V	பிழைநீக்குதல்	இலக்கணம்	1.ஒற்றுப்பிழை 2.வாக்கியப் பிழை										
Instructional Hours			6 Hours										
Suggested Learning Methods : இலக்கணப் பிழை இன்றி எழுதும் திறன் பெற்றமை													
Total Hours			30 Hours										
Text Books	1. இளங்கலை தமிழ் மாணவர்களுக்குரிய பாடநூல்“அரிச்சுவடி” தொகுப்பு: தமிழ்த்துறை,நேரு கலை மற்றும் அறிவியல் கல்லூரி,கோயம்புத்தூர்.												
Reference Books	1. பவணந்தி முனிவர்,நன்னூல் பூலியூர்க்கேசிகன் உரை,சாரதா பதிப்பகம், சென்னை-40. 2. தொல்காப்பியம், கணேசையர் பதிப்பு,உலகத் தமிழாராய்ச்சி நிறுவனம், சென்னை -113.												
Web. URLs	https://youtu.be/P7vvUnjI6vY , https://youtu.be/Zx4R3yZseuQ .												
Tools for Assessment (50 Marks)													
CIA I	CIA II	CIA III	Seminar	Assignment	Group Project	Total							
8	8	10	8	8	8	50							
Mapping													
CO/PO	PO 1	PO2	PO3	PO4	PO 5	PO6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO4	PSO5
CO1	L	L	H	L	H	M	H	H					
CO2	M	L	H	L	M	M	L	H					
CO3	H	L	H	L	L	M	M	H					
CO4	H	L	M	L	L	M	H	M					
CO5	M	L	H	L	M	M	H	H					
H-High; M-Medium; L-Low													
Course designed by							Verified by						
Dr. S. Satheesh kumar							Dr. A. Sridevi						

Course Code		Title	
22U4NM3AT1		Part IV: Advanced Tamil – I (சிறப்புத்தமிழ் -I)	
Semester: III		Credits: 2	ESE: 50 Marks
Course Objective	புதுக்கவிதை உருவாக்கும் திறன் வளர்த்தல் - மொழித்திறனை மேம்படுத்துதல்		
Course Category	Skill Development (மாணவர்களின் மொழித்திறனை ஊக்குவித்தல்)		
Development Needs	Regional (தமிழ் மொழியின் அவசியத்தை உணர்த்துதல்)		
Course Description	மாணவர்களின் மொழித்திறனை ஊக்குவித்தல்		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	புதுக்கவிதை படைக்கும் திறன்வளர்த்தல்	விரிவுரை	குழுத்திட்டம்
CO 2	படைப்பாக்கத்திறன் அறிவு பெறச்செய்தல்.	விரிவுரை / குழு விவாதம்	கருத்தரங்கு
CO 3	தகவல் தொடர்பியலுக்கான கடிதம்,அமைவுத்திறன் பெறச்செய்தல்	விரிவுரை / காணொளிப்பட விளக்கம்	கருத்தரங்கு
CO 4	மொழியைப் பிழையின்றிப் பேசும் ,எழுதும் திறன் பெறச் செய்தல்	விரிவுரை	ஒப்படைவு
CO 5	கடிதம் எழுதுதல் மற்றும் மொழியறிவைப் பெறுதல்.	விரிவுரை / காணொளிப்பட விளக்கம்	குழுத்திட்டம்
Offered by	தமிழ்த்துறை		
Course Content: Advanced Tamil - I (சிறப்புத்தமிழ் -I)		Instructional Hours / Week : 2 Hours	
Unit	Description	Text Book	Chapters
I	புதுக்கவிதை	1. பாரதியார் 2. பாரதிதாசன்	1.1.தேசபக்திபாடல் தாயின் மணிக்கொடி பாரீர் 1.2.பாரதிதாசன்(தமிழ்மொழிபற்று- கனியிடை,தமிழுக்கும் அழுதென்று)
		Instructional Hours	6 Hours
Suggested Learning Methods : கவிதை எழுதும் திறன் பெற்றமை			
II	பிழை நீக்குதல்	இலக்கணம்	2.1.சொற்பிழை நீக்கம் 2.2.தொடர் பிழை நீக்கம் 2.3.பத்தி எழுதச் செய்தல்
		Instructional Hours	6 Hours
Suggested Learning Methods :வாக்கியங்களைப் பிழை இன்றி எழுதும் திறன் பெற்றமை			
III	இலக்கணப் பயிற்சி அளித்தல்	இலக்கணம்	3.1.தொகை நிலைத்தொடர், 3.2.தொகா நிலைத்தொடர் 3.3.ஆகுபெயர் வகைகள்

Instructional Hours			6 Hours
Suggested Learning Methods : இலக்கணப் பிழை இன்றி எழுதும் பயிற்சி பெற்றமை			
IV	கடிதம் எழுதுதல்	இலக்கணப் பயிற்சி ஏடு	4.1. பாராட்டுக்கடிதம் 4.2. நன்றிக்கடிதம் 4.3. அழைப்புக்கடிதம் 4.4. அலுவலகக் கடிதம் 4.5. நட்புக்கடிதம்
Instructional Hours			6 Hours
Suggested Learning Methods : கடிதம் எழுதும் திறன் பெற்றமை			
V	இலக்கிய வரலாறு	தமிழ் இலக்கிய வரலாறு	1.வேலு நாச்சியார் 2.கப்பலோட்டிய தமிழன்
Instructional Hours			6 Hours
Suggested Learning Methods : தமிழ் இலக்கிய வரலாற்றின் சிறப்பினை அறிய பெற்றமை			
Total Hours			30 Hours
Text Books	1. இளங்கலை தமிழ் மாணவர்களுக்குரிய பாட நூல்“திரட்டு”தமிழ்த்துறை. தொகுப்பு: தமிழ்த்துறை,நேரு கலை மற்றும் அறிவியல் கல்லூரி, கோயம்புத்தூர்.		
Reference Books	1. பாரதியார்- பாரதியார் கவிதைகள், அபிராமி பதிப்பகம், 7- பி, கொடிமரத் தெரு, சென்னை- 013. 2. பவணந்தி முனிவர் – நன்னூல் புலியூர்க்கேசிகள் உரை, சாரதா பதிப்பகம், சென்னை -040.		
Web. URLs	https://youtu.be/xnsvFOHxDeo , https://youtu.be/kQoIj-29VIk .		
Course designed by			Verified by
Dr. S. Satheesh kumar			Dr. A. Sridevi

Course Code	Title		
22U4NM3CAF	Non Major Elective : Consumer Affairs		
Semester : III	Credits : 2	ESE : 50 Marks	
(Common to all UG Programmes)			
Course Objective	To enable the students to understand the concepts of Consumers and Markets		
Course Category	Employability		
Development Needs	National & Global		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Know their rights and responsibilities as a consumer	Lecture/ Video Lectures	Assignment
CO 2	Gain knowledge about Consumer protection law in India	Lecture/ Peer Teaching	Seminar
CO 3	Understand the procedure about redressed of consumer complaints	Lecture/ Group Discussion	Seminar
CO 4	Learn about Consumer related regulatory agencies and Norms	Lecture/ Role Play	Assignment
CO 5	Comprehend Business Firms, Interface with Consumers.	Lecture/ Group Discussion	Quiz
Offered by	Department of Business Administration		
Course Content	Instructional Hours / Week : 2		
Unit	Description	Text Book	Chapters
I	Conceptual Framework - Consumer and Markets: Concept of Consumer, Nature of markets: Liberalization and Globalization of markets with special reference to Indian Consumer Markets, Concept of Price in Retail and Wholesale, Maximum Retail Price (MRP), Fair Price, GST, labelling and packaging along with relevant laws, Legal Metrology. Consumer Complaining Behaviour: Alternatives available to Dissatisfied Consumers; Complaint Handling Process.	1	1 & 2
Instructional Hours			6
Suggested Learning Methods : Video lectures			
II	The Consumer Protection Law in India Objectives and Basic Concepts: Consumer rights and UN Guidelines on consumer protection, Consumer goods, defect in goods, spurious goods and services, service, deficiency in service, unfair trade practice.	1	5 & 6
Instructional Hours			6
Suggested Learning Methods : Peer Teaching			

III	Grievance Redressal Mechanism under the Indian Consumer Protection Law								2	1			
	Who can file a complaint? Grounds of filing a complaint; Limitation period; Procedure for filing and hearing of a complaint; Disposal of cases, Relief/Remedy available; Temporary Injunction, Offences and penalties.												
Instructional Hours									6				
Suggested Learning Methods : Group Discussion													
IV	Role of Industry Regulators in Consumer Protection - Industry self-regulation (ISR) Protection Policies, Consumer Protection Agencies								2	4			
	i. Telecommunication: TRAI ii. Food Products: FSSAI Insurance : IRDA and Insurance Ombudsman												
Instructional Hours									6				
Suggested Learning Methods : Role Play													
V	Contemporary Issues in Consumer Affairs								2	6 & 7			
	Consumer Movement in India: Formation of consumer organizations and their role in consumer protection, Misleading Advertisements and sustainable consumption, National Consumer Helpline, Comparative Product testing. Quality and Standardization: Voluntary and Mandatory standards; Role of BIS, Indian Standards Mark (ISI), Ag-mark, Hallmarking, Licensing and Surveillance.												
Instructional Hours									6				
Suggested Learning Methods : Group Discussion													
Total Hours									30				
Reference Books		<ol style="list-style-type: none"> Khanna, Sri Ram, Savita Hanspal, Sheetal Kapoor, and H.K. Awasthi. (2007) Consumer Affairs, Universities Press. Choudhary, Ram Naresh Prasad (2005). Consumer Protection Law Provisions and Procedure, Deep and Deep Publications Pvt Ltd. 											
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L	-	-	-	M	H	H	M	M	-	-	-	-
CO2	L	-	-	-	M	H	H	M	M	-	-	-	-
CO3	L	-	-	-	M	H	M	M	M	-	-	-	-
CO4	L	-	-	-	M	H	H	M	M	-	-	-	-
CO5	L	-	-	-	M	H	H	M	M	-	-	-	-
H-High; M-Medium; L-Low													
Course designed by								Verified by Chairman					
Dr. R. A. Ayyapparajan								Dr. R. A. Ayyapparajan					

Course Code	Title		
22U4NM3GST	Non Major Elective : Gender Sensitization		
Semester : III	Credits : 2	ESE : 50 Marks	
(Common to all UG Programmes)			
Course Objective	To raise awareness of gender, promote gender equality, and equip learners with key concepts and principles of gender sensitization.		
Course Category	Skill Development, Employability and Entrepreneurship		
Development Needs	Local, National and Global		
Course Description	The course aims an exploration of overview of gender, its social construction, gender issues and challenges in India, and equips learners with key concepts and principles of gender sensitization to promote inclusivity and equity.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Learn gender roles, socialization, and stereotypes.	Direct Instruction	Assignment
CO 2	Recognize the gender discrimination causes, areas, and levels in institutions.	Direct Instruction	Seminar
CO 3	Identify the gender identity formation, types, families, and socialization in India.	Video Lessons	Assignment
CO 4	Understand the gender concerns in access, enrollment, retention, participation, and achievement.	Direct Instruction	Assignment
CO 5	Apply the Laws Related to Women	Direct Instruction	Exhibition
Offered by	Department of Costume Design and Fashion		
Course Content	Instructional Hours / Week : 2		
Unit	Description	Text Book	Chapters
I	Gender Socialisation and Gender Roles: Introduction- Meaning of Sex and Gender, Gender Socialisation– Definitions, Agents of Gender Socialisation, Gender Roles- Meaning, Definitions, Nature of Gender Roles, Factors Determining Gender Roles/Stereotypes	1	-
Instructional Hours			6
Suggested Learning Methods : Group discussions			
II	Gender Discrimination: Gender Discrimination - Meaning and Causes of Gender Discrimination, Areas of Gender Discrimination, Gender Discrimination at Different Levels of Institutions	1	-
Instructional Hours			6
Suggested Learning Methods : Video documentaries and films			
III	Gender Identity: Gender Identity - Meaning, Formation and Factors of Gender Identity, Types of Gender Identity, Types of Families in India, Gender Socialisation within Indian Families	1	-
Instructional Hours			6
Suggested Learning Methods : Case Method			

IV	Gender Concerns: Gender Concerns Related to Access, Enrolment, Retention, Participation, and Achievement								1	-			
Instructional Hours										6			
Suggested Learning Methods : Video documentaries and films													
V	Laws Related to Women: Laws Related to Rape, Laws Related to Dowry - Dowry Prohibition Act, 1961, Laws Related to Remarriage, Laws Related to Divorce, Laws Related to Property Inheritance, Laws Related to Trafficking, Constitutional and Legal Aspects related to Women - Women's Reservation Bill – History and Current Status								1	-			
Instructional Hours										6			
Suggested Learning Methods : Case Method													
Total Hours										30			
Text Books	1. Gender School and Society : Self-learning Material, MANGALORE UNIVERSITY, Printed at Datacon Technologies, Bangalore, 2018												
Reference Books	1. United Nations Development Programme. (2014). Gender Equality and Women's Empowerment: Training Manual. New York: UNDP.												
Web. URLs	1. Coursera - https://www.coursera.org/courses?query=gender%20sensitization 2. edX - https://www.edx.org/learn/gender-sensitization 3. Udemy - https://www.udemy.com/topic/gender-sensitization/												
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	M	M	M	H	H	M	-	-	-	-	-
CO2	H	M	M	M	H	H	M	M	-	-	-	-	-
CO3	H	M	M	M	M	H	H	M	-	-	-	-	-
CO4	H	M	M	M	L	H	H	M	-	-	-	-	-
CO5	H	M	M	M	M	H	M	M	-	-	-	-	-
H-High; M-Medium; L-Low													
Course designed by								Verified by Chairman					
Ms. M. Nandhini								Dr. S. Jayapriya					

Course Code		Title	
22U4NM3WRT / 21U4NM3WRT		Non Major Elective : Women's Rights	
Semester : III		Credits : 2	ESE : 50 Marks
(Common to all UG Programmes)			
Course Objective		To facilitate the awareness about the social, economical, political, intellectual or cultural contributions of Women in India.	
Course Category		Skill Development	
Development Needs		National	
Course Description		Apply the knowledge of Rights related to women for their betterment.	
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Aware of basic constitutional rights	Lecture/ Case Study/ Role Play	Seminar
CO 2	Gain awareness on Political rights	Lecture/ Case Study/ Role Play	Role Play
CO 3	Understand individual and familial rights	Lecture/ Case Study/ Role Play	Role Play
CO 4	Grasp the provisions for Women's Rights in India	Lecture/ Case Study/ Role Play	Role Play
CO 5	Develop an understanding of the Protection Mechanisms for women	Lecture/ Case Study/ Role Play	Assignment
Offered by	Department of Social Work		
Course Content	Instructional Hours / Week : 2		
Unit	Description	Text Book	Chapters
I	Constitutional Rights of Women in India: Indian constitution relating to women - Fundamental rights - Directive principles of state policy - right to equality – rights against exploitation cultural and educational rights - the right to constitutional remedy - University Declaration of Human Rights -Enforcement of Human Rights for Women and Children - Role of Cells and Counseling Centers - Legal AID cells, Help line, State and National level Commission	4	2
Instructional Hours			6
Suggested Learning Methods : Seminar			
II	Political Rights of Women in India: Political Rights of Women in India - Electoral process – women as voters - candidates and leader - pressure group, 73rd and 74 th amendment and representation of women in local self –government – women in Rural and urban local bodies - Reservation of women - party ideologies and women's issues.	5	1
Instructional Hours			6
Suggested Learning Methods : Role Play			

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								3	7			
	Instructional Hours										6		
Suggested Learning Methods : Role Play													
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 Remarriage Act 1856 - The Dowry Prohibition Act 1961.								3	5			
	Instructional Hours										6		
Suggested Learning Methods : Creative Art Assignments													
V	Special Women Welfare Laws: Sexual Harassment at Work Places, Rape and Indecent Representation, The Indecent Representation (Prohibition) Act, 1986, Immoral Trafficking, The Immoral Traffic (Prevention) Act, 1956 - Acts Enacted for Women Development and Empowerment, Role of Rape Crisis Centers. Protection of Children from sexual Offences Act 2012.								3	9			
	Instructional Hours										6		
Suggested Learning Methods : Community Participation Program													
Total Hours										30			
Reference Books		<ol style="list-style-type: none"> 1. P. D. Kaushik “Women Rights” Book well Publication 2007 UN Centre for Human Rights, Discrimination against Women (Geneva: World Campaign for Human Rights,1994). 2. Agnes, Flavia. (1992). “Give us “Give us This Day Our Daily Bread: Procedures and Case Law on Maintenance”. Majlis, Bombay. 3. Agnes, Flavia. (1999). “Law and Gender Inequality: The Politics of Women’s Rights in India”. OUP, New Delhi 											
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	H	M	M	H	M	M	M					
CO2	H	M	M	H	M	M	H	H					
CO3	H	M	M	H	M	H	M	M					
CO4	M	H	M	H	M	M	M	H					
CO5	H	M	M	H	M	H	M	M					
H-High; M-Medium; L-Low													
Course designed by								Verified by					Chairman
Dr. P. Nathiya								Dr. P. Nathiya					

23U1TAM404		Part - I : Muthamizh (முத்தமிழ்)		
Semester: IV		Credits: 3	CIA: 20 Marks	ESE: 55 Marks
Course Objective		சங்ககால மக்களின் வாழ்வியல் வாயிலாக பண்பாட்டுக் கூறுகளை உணர்த்துதல்		
Course Category		Skill Development (மாணவர்களின் மொழித்திறனை ஊக்குவித்தல்)		
Development Needs		Global/Regional (உலக அளவில் தமிழ் மொழியின் அவசியத்தை உணர்த்துதல்)		
Course Description		மாணவர்களின் மொழித்திறனை ஊக்குவித்தல் மற்றும் உலக அளவில் தமிழ் மொழியின் அவசியத்தை உணர்த்துதல்		
Course Outcomes			Teaching Methods	Assessment Methods
CO 1	தமிழர்களின் வாழ்வியல் பண்புகளைக் கற்று அறிதல்.		விரிவுரை/காணொளிப் பட விளக்கம்	ஒப்படைவு
CO 2	தமிழ் இலக்கிய வகைகளைக் கூறுவதன் மூலம் தமிழின் இலக்கிய வளத்தை உணரச்செய்தல்.		விரிவுரை	குழுத்திட்டம்
CO 3	மாணவர்களிடையே காலத்திற்கேற்ப மனவளர்ச்சியை உருவாக்குதல்.		விரிவுரை/காணொளிப் பட விளக்கம்	கருத்தரங்கு
CO 4	நாட்டின் சிறந்த குடிமக்களாக மாணவர்களை உருவாக்குதல்.		விரிவுரை	ஒப்படைவு
CO 5	மாணவர்களின் மனநலத்தை வளர்த்தல்.		விரிவுரை/குழு விவாதம்	கருத்தரங்கு
Offered by		தமிழ்த்துறை		
Course Content: Muthamizh (முத்தமிழ்)			Instructional Hours / Week : 4	
Unit	Description	Text Book	Chapters	
I	எட்டுத்தொகை	1. நற்றிணை 2. குறுந்தொகை 3. பதிற்றுப்பத்து 4. புறநானூறு	1.1 குறிஞ்சி: நின்ற சொல்லார் ..., 1.2 முல்லை : இளமை பாரார் ..., குறிஞ்சி : நிலத்தினும்..., பாலை : ஆடு அமை ...விளையாட்டு ஆயமொடு 1.3 ஐந்தாம் பத்து : ஊன் தூவை அடிகில் 1.4. யாதும் ஊரே .. பல் சான்றீரே .. அற்றைத்திங்கள்	
			Instructional Hours	12 Hours
Suggested Learning Methods: சங்க இலக்கிய வழி நற்பண்புகளை அறியச்செய்தல்				
II	பத்துப்பாட்டு	1. சிறுபாணாற்றுப்படை 2. குறிஞ்சிப்பாட்டு 3. பொருநர் ஆற்றுப்படை 4. மதுரைக்காஞ்சி	2.1 கடையெழு வள்ளல்கள் சிறப்பு 2.2 அறத்தொடு நிறறல் 2.3 மன்னனின் விருந்தோம்பல் 2.4 பாண்டிய நெடுஞ்செழியன் குடிச்சிறப்பு	
			Instructional Hours	12 Hours
Suggested Learning Methods : புலவர்களின் மாண்புகளை வெளிப்படுத்துதல்				
III	அற இலக்கியங்கள்	1. நான்மணிக்கடிகை 2. இனியவை நாற்பது 3. களவழி நாற்பது- 4. ஆசாரக்கோவை	விளம்பிநாகனார் - (1-5 பாடல்கள்) பூதஞ்சேந்தனார் - (1-5 பாடல்கள்) பொய்கையார் - (11-15 பாடல்கள்) பெருவாயின் முள்ளியார் (1-5 பாடல்கள்)	
			Instructional Hours	12 Hours
Suggested Learning Methods : அற இலக்கியங்களின் மாண்புகளை அறிய பெற்றமை				
IV	தமிழ்ச் செயலிகள்	தனித்தமிழ்	4.1 செயலிகள் அறிமுகம் 4.2 வகைகள்	

			4.3 மொழிபெயர்ப்புச் செயலிகள் 4.4 தமிழ்ச் செயலிகள்										
Instructional Hours			12 Hours										
Suggested Learning Methods : தமிழ்ச் செயலிகள் பற்றி அறியும் வாய்ப்பு பெற்றமை													
V	இலக்கணம்	1.நன்னூல் 2.தொல்காப்பியம்	5.1 முதற்பொருள், கருப்பொருள், உரிப்பொருள் 5.2 பத்து அழகு 5.3 பத்து குற்றம் 5.4 ஆங்கிலத்திலிருந்து தமிழில் மொழிபெயர்த்தல்										
Instructional Hours			12 Hours										
Suggested Learning Methods : இலக்கண மாண்புகளை அறியும் திறன் பெற்றமை													
Total Hours			60 Hours										
Text Books	1. இளங்கலை முதலாம் ஆண்டு தமிழ் மாணவர்களுக்குரிய பாடநூல் தொகுப்பு: “முத்தமிழ்” தமிழ்த்துறை, நேரு கலை மற்றும் அறிவியல் கல்லூரி, கோயம்புத்தூர்.												
Reference Books	1. சங்க இலக்கியங்கள் - எட்டுத்தொகை, பத்துப்பாட்டு கழக வெளியீடு, திருநெல்வேலி. 2. தனித்தமிழ்- இளசுந்தரம், விகடன் பிரசுரம். சென்னை.												
Web. URLs	https://youtu.be/GrNnb68Fd6w , https://youtu.be/14-sEAUzXP8 .												
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Seminar	Assignment	Group Project	Total							
4	4	5	2	2	3	20							
Mapping													
PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	H	L	H	H	M	H					
CO2	M	L	H	L	M	L	M	H					
CO3	H	L	H	L	H	H	M	H					
CO4	M	L	M	L	H	H	H	M					
CO5	H	L	L	L	M	H	L	M					
H-High; M-Medium; L-Low													
Course designed by							Verified by						
Dr. S. Satheesh kuma							Dr. A. Sridevi						

Course Code	Title		
23U1HIN404	Part I - Prayogik Hindi (प्रायोगिक हिंदी)		
Semester: IV	Credits: 3	CIA: 20 Marks	ESE: 55 Marks
(Common to all UG Programmes)			
Course Objective	साक्षरता प्रशंसा और विश्लेषण के सौंदर्य, सांस्कृतिक और सामाजिक पहलुओं के प्रति छात्रों को संवेदनशील बनाना। उन्हें विभिन्न कालों के प्रख्यात लेखकों के हिंदी कथा साहित्य के बेहतरीन नमूने उपलब्ध कराना।		
Course Category	Skill Development		
Development Needs	National		
Course Description	Improves Creative Writing.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	छात्र हिंदी भाषा से अच्छी तरह वाकफ हो सकेंगे।	Role play	Assignment
CO 2	पाठ्यक्रम संवादी हिंदी में पारंगत होने में मदद करता है।	Group learning Acting	Seminar
CO 3	छात्र आधुनिक हिंदी साहित्य का ज्ञान प्राप्त कर सकेंगे।	Story Narration	Assignment
CO 4	छात्रों को निबंध लेखन में अच्छा अभ्यास मिलेगा।	Group learning and Work sheets	Group Project
CO 5	छात्रों को फिल्म की समीक्षा करने का अभ्यास मिलेगा।	Worksheets and Exercises	Seminar
Offered by	Hindi		
Course Content	Instructional Hours / Week : 4		
Unit	Description	Text Book	Chapters
I	विरुद्ध उपन्यास: (मृणाल पाण्डे)	1	4
Instructional Hours			12
Suggested Learning Methods : Visual Learning			02 Hrs
II	कथा माला , (मृदुला गर्ग) लौटना और लौटना : ममता जयशंकर) , प्रसाद आदमी का बच्चा (यशपाल)	1	3
Instructional Hours			12
Suggested Learning Methods : Auditory			02 Hrs
III	1. दिए गए अनुच्छेद पर समीक्षा लिखना 2. आधुनिक काल: प्रवृत्तियां और कवि	1	3
Instructional Hours			12
Suggested Learning Methods : Comprehensive Writing			02 Hrs

IV	1.सामान्य निबंध: आधुनिक शिक्षा प्रणाली, मोबाइल का दुष्परिणाम, आधुनिक युवा पीढ़ी 2. हिंदी में दी गई कहानी के लिए सारांश लिखना।		1	2									
Instructional Hours				12									
Suggested Learning Methods : Auditory, Visual, Comprehensive				02 Hrs									
V	सिनेमा समीक्षा : पद्मावत		1	4									
Instructional Hours				12									
Suggested Learning Methods : Comprehensive writing				02 Hrs									
Total Hours				60 Hrs									
Text Books	<ol style="list-style-type: none"> विरुद्ध उपन्यास: (मृणाल पाण्डे) कहानी कुंज , गोविंद प्रकाशन , मथुरा हर हाल बेगाने - मृदुला गर्ग , राजपाल एंड संस , दिल्ली मेरा परिवार , लोकभारत प्रकाशन , इलाहाबाद 												
Reference Books	<ol style="list-style-type: none"> संजय चौहान , समकालीन हिंदी साहित्य विचार और विवाद , आशा किताबें श्री रामदेव, व्याकरण प्रदीप, लोकभारती प्रकाशन, अलाहाबाद डॉ वासुदेव नंदन प्रसाद, आधुनिक हिंदी व्याकरण और रचना, भारती भवन प्रकाशक ओंकार नाथ वर्मा , सामान्य हिंदी , अरिहंत प्रकाशन भारत लिमिटेड 												
Web. URLs	<ol style="list-style-type: none"> www.webdunia.com www.hindikunj.com hindi-natak-vikas.html www.bhashaindia. www.hindisamay.com https://ebook.pustak.org/ 												
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Group Project	Total							
4	4	5	2	2	3	20							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L	M	H	M	M	L	H	L					
CO2	L	M	H	H	L	H	L	M					
CO3	M	L	L	L	L	H	M	M					
CO4	M	M	M	M	H	L	M	H					
CO5	H	H	L	L	H	L	H	H					
H-High; M-Medium; L-Low													
Course designed by							Verified by						
Dr.S.Swarnalatha							Dr.S.Swarnalatha						

Course Code		Title		
23U1MAL404		Part - I : Drisyakalaa Saahithyam (ദൃശ്യകലാസാഹിത്യം)		
Semester: IV		Credits: 3	CIA: 20 Marks	ESE: 55 Marks
(Common to all UG Programmes)				
Course Objective		സിനിമ എന്ന മാധ്യമത്തിന്റെ വിവിധ തലങ്ങളെ ആഴത്തിൽ മനസ്സിലാക്കാൻ കഴിയുന്നു.ദൃശ്യാവിഷ്കരണത്തെ കുറിച്ചുള്ള അറിവ് ലഭിക്കുന്നു.		
Course Category		Skill Development		
Development Needs		Regional		
Course Description		Guide and encourage them to achieve their ambitions		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	തിരക്കഥയിലെ സംഭാഷണത്തിന്റെ പ്രസക്തി	Smart boards/ chalk and Talk	Assignment	
CO 2	മനക്കരുത്തിലൂടെ വീട്ടിലെ എല്ലാ അംഗങ്ങളെയും ദുഃഖം അറിയിക്കാതെ മംഗളകർമ്മം നടത്തുന്നു.	Group learning	Seminar	
CO 3	കുടുംബത്തിന്റെ തകരുന്ന മൂല്യത്തെ ഉയർത്തുന്നു	Peer Teaching	Assignment	
CO 4	ദൃശ്യാവിഷ്കരണം മലയാളത്തിൽ	Group learning	Group Project	
CO 5	രംഗവേദിയുടെ അവതരണം	Smart boards/ chalk and Talk	Assignment	
Offered by		Malayalam		
Course Content			Instructional Hours / Week : 4	
Unit	Description	Text Book	Chapters	
I	തിരക്കഥ - ഞാൻ പ്രകാശൻ	1	5	
Instructional Hours			12	
Suggested Learning Methods : Visual Learning			02 Hrs	
II	തിരക്കഥ - ഞാൻ പ്രകാശൻ	1	5	
Instructional Hours			12	
Suggested Learning Methods : Auditory, Visual			02 Hrs	
III	തിരക്കഥ - ഞാൻ പ്രകാശൻ	1	3	
Instructional Hours			12	
Suggested Learning Methods : Visual Learning			02 Hrs	
IV	നാടകം - ഭരതവാക്യം	1	2	
Instructional Hours			12	
Suggested Learning Methods: Auditory, Visual			02 Hrs	
V	നാടകം - ഭരതവാക്യം	1	3	
Instructional Hours			12	
Suggested Learning Methods : Visual Learning			02 Hrs	
Total Hours			60 Hrs	
Text Books		1. തിരക്കഥ - ഞാൻ പ്രകാശൻ - ശ്രീനിവാസൻ, ഡി.സി.ബുക്സ് 2. നാടകം - ഭരതവാക്യം , ജി. ശങ്കരപ്പിള്ള		
Reference Books		1. കഥയും തിരക്കഥയും ഡോ.ആർ.വി.എം.ദിവാകരൻ - എൻ. ബി. എസ് കോട്ടയം 2. മലയാള സിനിമയും സാഹിത്യവും - മധു ഇറവങ്കര - ഡി.സി.ബുക്സ് 3. ഒരു സിനിമ എങ്ങനെ ഉണ്ടാകുന്നു. - കെ.കെ. ചന്ദ്രൻ		

		4. നാടക സാഹിത്യ ചരിത്രം - ജി. ശങ്കരപ്പിള്ള - ഡി.സി.ബുക്സ് 5. നാടകം കലയും കാഴ്ചയും - പി.ജി.സദാനന്ദൻ - ഡി.സി.ബുക്സ്												
Web. URLs		literature">http://www.keralaculture.org>literature http://www.manoramaonline.com												
Tools for Assessment (20 Marks)														
CIA I	CIA II	CIA III	Assignment	Seminar	Group Project									Total
4	4	5	2	2	3									20
Mapping														
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	H	L	H	H	H	H	H	H						
CO2	M	L	H	M	H	M	M	M						
CO3	H	L	M	M	M	H	M	H						
CO4	H	L	L	H	L	H	M	M						
CO5	M	L	L	H	L	H	M	M						
H-High; M-Medium; L-Low														
Course designed by							Verified by Chairman							
Ms.RAJANI N.							Dr.SMITHA C. R.							

Course Code	Title		
23U1FRN404	Part – I : Le Francais General – IV		
Semester : IV	Credits : 3	CIA : 20 Marks	ESE : 55 Marks
(Common to all UG Programmes)			
Course Objective	Acquisition of standard French through French grammar and oral communication		
Course Category	Skill Development		
Development Needs	Global		
Course Description	Improved understanding and communication		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	learn pronouns, g�erondif along with culture adaptation in foreign countries	Lectures /Tutorial	Assignment
CO 2	French food culture, manners, futur simple & futur proche.	Group Learning	Assignment
CO 3	Business and economic culture, la cause et la consequence.	Peer Teaching	Seminar
CO 4	Letter writing official and to a patron, le passif, les doubles pronoms	Group Learning	Group Project
CO 5	The city and country, urbanisation, l'opposition et la concession, le subjonctif et l'infinitif	Group Learning	Assignment
Offered by	Department of French		
Course Content	Instructional Hours / Week : 4		
Unit	Description	Text Book	Chapters
I	Explorer l'inconnu	1	1
Instructional Hours			12
Suggested Learning Methods : Visuals			
II	Go�ter l'insolite	1	2
Instructional Hours			12
Suggested Learning Methods : Comprehensive writing			
III	Consommer autrement	1	3
Instructional Hours			12
Suggested Learning Methods : Group discussions			
IV	S'engager pour une cause	1	4
Instructional Hours			12
Suggested Learning Methods : Visuals			

V	Repenser le quotidien						1	5						
Instructional Hours							12							
Suggested Learning Methods : Group Discussion														
Total Hours							60							
Text Books	1. Saison 2 Méthode de Français – Marie-Noëlle Cocton, Anouchka De Oliveira, Dorothée Duplex (Unit 0 to 4)													
Reference Books	1. Connexions 2 Methode de Français Régine Mérieux , Yves Loiseau													
Web. URLs	1. www.academia.edu													
Tools for Assessment (20 Marks)														
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total								
4	4	5	2	2	3	20								
Mapping														
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	-	-	H	M	H	H	-	-	-	-	-	-	-	
CO2	-	-	H	L	H	M	-	-	-	-	-	-	-	
CO3	-	-	-	M	M	H	-	-	-	-	-	-	-	
CO4	-	-	L	M	L	H	-	-	-	-	-	-	-	
CO5	-	-	L	-	H	-	-	-	-	-	-	-	-	
H-High; M-Medium; L-Low														
Course designed by							Verified by							Chairman
Mr. D. Balaji							Dr. R. Malathi							

Course Code	Title		
23U2ENG404	Part – II : Communicative English – II		
Semester : IV	Credits : 3	CIA : 20 Marks	ESE : 55 Marks
(Common to All UG Programmes)			
Course Objective	To equip the students with Language Skills and develop interest in and appreciation of literature.		
Course Category	Skill Development		
Development Needs	Global		
Course Description	SD: Helps to develop LSRW skill		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Understand the values of life reflected in the prescribed prose	Lecture/Tutorial	Assignment
CO 2	Learn to interpret poem based on contextual evidence.	Lecture/Tutorial	Assignment
CO 3	Enhance imaginative and communication skills through short stories.	Lecture/Tutorial	Speaking
CO 4	Understand the performing art through drama.	Lecture/Tutorial	Reading
CO 5	Acquire proficiency in English for global competency.	Lecture/Tutorial	Writing
Offered by	Department of English		
Course Content	Instructional Hours / Week : 4		
Unit	Description	Text Book	Chapters
I	Prose Francis Bacon – Of Adversity Dr. Radhakrishnan - Character is Destiny Sudha Murty - How I taught my grandmother to read	1	1
Instructional Hours			12
Suggested Learning Methods : Intensive Reading			
II	Poetry Sarojini Naidu - The Soul's Prayer Emily Dickinson - Death in the Opposite House William Blake – London	1	2
Instructional Hours			12
Suggested Learning Methods : Scaffolding Method			
III	Short Stories W. Somerset Maugham - Mr. Know-All Edgar Allan Poe-The Purloined Letter Ruskin Bond-The Thief Story	1	3
Instructional Hours			12
Suggested Learning Methods : Flipped Learning			

IV	Drama William Shakespeare – As You Like It						1	4						
Instructional Hours								12						
Suggested Learning Methods : Flipped Learning														
V	GRAMMAR AND COMPOSITION Oral & Written Communication (Unit I–IV) Listening – Comprehension practice from Poetry, Prose, Online Voice Practice, observing/viewing E-content (with subtitles), Guest/Invited Lectures, Conference/Seminar Presentations & Tests, and DD National News Live, BBC, CNN, VOA etc Speaking – In Group Discussion Forum, participate in the Turn Taking, and Conversation Management, Debating, Defending/Mock Viva- Voce, Seminar Presentations on Classroom-Assignments, and Peer-Team-interactions. Reading –Different Reading Strategies in Poetry, Prose, Novel, Newspaper etc Writing – Clauses – Conditional, Relative, Restrictive, Non-Restrictive, Denotation and Connotations Précis Writing, One word substitution.						1	5						
Instructional Hours								12						
Suggested Learning Methods : Activity Based Learning														
Total Hours								60						
Text Books		Unit I – V: Compiled by the Department of English												
Reference Books		CLIL (Content & Language Integrated Learning) – Module by TANSCHÉ NOTE: (Text: Prescribed chapters or pages will be given to the students by the department)												
Web. URLs														
Tools for Assessment (20 Marks)														
CIA I		CIA II		CIA III		Assignment		Seminar		Presentation		Total		
4		4		5		2		2		3		20		
Mapping														
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	M	-	H	-	M	M	H	M	H	H	M	H	M	
CO2	M	-	H	-	H	M	H	M	H	H	M	H	M	
CO3	M	-	H	-	H	H	H	H	H	H	M	H	M	
CO4	M	L	H	-	H	-	H	H	H	H	M	H	H	
CO5	H	M	H	-	H	H	H	H	H	H	H	H	M	
H-High; M-Medium; L-Low														
Course designed by								Verified by Chairman						
Dr. Adappatu Ancy Antony								Dr. R. Malathi						

Course Code	Title		
23U3DFC406	Core Paper X: Database Security		
Semester: IV	Credits: 3	CIA: 20 Marks	ESE: 55 Marks
Course Objective	This course will provide an overview of database system concepts, entity model, and data base security concepts and techniques.		
Course Category	Employability		
Development Needs	Global		
Course Description	This course focuses on the Database System Concepts and Architecture; The Relational Data Model and practices of computer database security.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Understand the basic concepts and architecture of Database Systems	Flipped Classroom	Group Discussion
CO 2	Explore the Relational Data Model and Relational Database Constraints.	Video Lecture	Assignment
CO 3	Examine the basics of database security issues and privileges	Problem Solving	Seminar
CO 4	Experiment the Database Security within the General Security Landscape and Defense	Tutorial	Quiz
CO 5	Implement authentication and password security, and application security for database users	Virtual Lab	Flip Test
Offered by	DCFS		
Course Content	Instructional Hours / Week : 4		
Unit	Description	Text Book	Chapters
I	Database System Concepts and Architecture: Data Models, Schemas, and Instances – Three-Schema Architecture and Data Independence – Database Languages and Interfaces – The Database System Environment – Centralized and Client/ Server Architectures for DBMSs – Classification of Database Management Systems	1	2
Instructional Hours			12
Suggested Learning Methods : Video Lectures			
II	The Relational Data Model and Relational Database Constraints: Relational Model Concepts – Relational Model Constraints and Relational Database Schemas Basic SQL: SQL Data Definition and Data Types – Specifying Constraints in SQL – Basic Retrieval Queries in SQL – INSERT, DELETE, and UPDATE Statements in SQL	1	3,4
Instructional Hours			12
Suggested Learning Methods :Online Simulation Tools			
III	Database Security: Introduction to Database Security Issues – Discretionary Access Control Based on Granting and Revoking Privileges – Mandatory Access Control and Role-Based Access Control for Multilevel Security	1	24

	SQL Injection – Introduction to Statistical Database Security – Introduction to Flow Control – Encryption and Public Key Infrastructures – Privacy Issues and Preservation – Challenges of Database Security	1	24										
Instructional Hours			12										
Suggested Learning Methods : Worked examples													
IV	Authentication and Password Security: Choose an appropriate authentication option – Understand who gets system administration privileges – Choose strong passwords – Implement account lockout after failed login attempts – Create and enforce password profiles – Use passwords for all database components	2	4										
Instructional Hours			12										
Suggested Learning Methods : Problem Based Learning													
V	Application Security: Reviewing where and how database users and passwords are maintained - Obfuscate application code - Secure the database from SQL injection attacks - Beware of double whammies: Combination of SQL injection and buffer overflow vulnerability - Don't consider eliminating the application server layer - Address packaged application suites - Work toward alignment between the application user model and the database user model	2	5										
Instructional Hours			12										
Suggested Learning Methods : Laboratory practice													
Total Hours			60 Hrs										
Text Books	1. Fundamentals of Database Systems, Ramez Elmasri, Shamkant B. Navathe, Sixth Edition, Addison-Wesley 2. Implementing Database Security and Auditing, A guide for DBAs, information security administrators and auditors, Ron Ben Natan, Elsevier Digital Press												
Reference Books	Implementing Database Security and Auditing, A guide for DBAs, information security administrators and auditors, Ron Ben Natan, Elsevier Digital Press												
Web. URLs	www.edx.com/course/database-security												
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
4	4	5	2	2	3	20							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. D. Suryaprabha							Dr. J. Maria Shyla						

Course Code	Title		
23U3DFC407	Core Paper XI - Cyber Forensic		
Semester: IV	Credits: 3	CIA: 20 Marks	ESE: 55 Marks
Course Objective	1. To understand the layers security by installing firewalls 2. Study about various computer forensic methods 3. Apply evidence collection tools and analysis various forensics.		
Course Category	Employability		
Development Needs	Global		
Course Description	This course emphasizes on the layers of network security and helps to understand the various forensic techniques		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Understand the different layers of security	Video Lectures	Group Discussion
CO 2	Interpret the different E-Mail Security and Firewalls	Tutorial	Assignment
CO 3	Apply computer forensic Techniques in Computer Investigation	Flipped Classroom	Seminar
CO 4	Examine incidence scenes using forensic tools	Tutorial/ Case Studies	Quiz
CO 5	Analyse and validate forensics data in real time	Video Lectures	Flip Test
Offered by	DCFS		
Course Content	Instructional Hours / Week : 4		
Unit	Description	Text Book	Chapters
I	NETWORK LAYER SECURITY & TRANSPORT LAYER SECURITY: IPSec Protocol - IP Authentication Header - IP ESP - Key Management Protocol for IPSec. Transport layer Security: SSL protocol, Cryptographic Computations – TLS Protocol.	1	1
Instructional Hours			12
Suggested Learning Methods : Video Lectures			
II	E-MAIL SECURITY & FIREWALLS : PGP - S/MIME - Internet Firewalls for Trusted System: Roles of Firewalls – Firewall related Terminology- Types of Firewalls- Firewall designs-SET for E-Commerce Transactions.	1	2
Instructional Hours			12
Suggested Learning Methods : Group Discussion			

III	INTRODUCTION TO COMPUTER FORENSICS: Introduction to Traditional Computer Crime, Traditional problems associated with Computer Crime Introduction to Identity Theft & Identity Fraud. Types of CF techniques-Incident and Incident response methodology-Forensic duplication and investigation. Preparation For IR:Creating response toolkit and IR team.- Forensics Technology and Systems –Understanding Computer Investigation– Data Acquisition		1	1									
Instructional Hours				12									
Suggested Learning Methods : Worked examples													
IV	EVIDENCE COLLECTION AND FORENSICS Incident Scenes– Working with Windows and DOS Systems. Current Computer TOOLS: Processing Crime and Forensics Tools: Software/Hardware Tools.		2	6									
Instructional Hours				12									
Suggested Learning Methods : Problem Based Learning													
V	ANALYSIS AND VALIDATION: Validating Forensics Data– Data Hiding Techniques – –Performing Remote Acquisition – Network Forensics – Email Investigations–Cell Phone and Mobile Devices Forensics		2	8									
Instructional Hours				12									
Suggested Learning Methods : Collaborative Learning													
Total Hours				60 Hrs									
Text Books		1. Computer Forensics and Investigations-BillNelson, Amelia Phillips, Frank Enfinger, Christofer Steuart, Second Indian Reprint 2009, Cengage Learning India Private Limited. 2. Digital Evidence and Computer Crime – Eoghan Casey, Edition3, Academic Press, 2011											
Reference Books		Computer Forensics and Cyber Crime: An Introduction–Marjie Britz, Edition2, Prentice Hall, 2008											
Web. URLs		www.simplilearn.com/cyber-forensic											
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
4	4	5	2	2	3	20							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. D. Suryaprabha							Dr. J. Maria Shyla						

Course Code	Title		
23U3DFP405	Core Paper XII: Practical in Cyber Forensic		
Semester: IV	Credits: 4	CIA: 40 Marks	ESE:60 Marks
Course Objective	1. Understand the cyber forensic issues 2. Apply various Intrusion detection and Testing 3. Processing and Analyze Crime and Incident Scenes		
Course Category	Skill Development		
Development Needs	Global		
Course Description	This course discusses on the various investigation methodologies and helps to understand the hardware and software firewall intrusion detection.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Identify network packet capturing issues over live network.	Demonstration Method	Laboratory Experiments
CO 2	Examine Software Firewall and Hardware Firewall Intrusion detection.		
CO 3	Implement incident response methodologies.		
CO 4	Analyze data collection and investigation methodologies		
CO 5	Apply Crime and Incident Scenes Process.		
Offered by	Information Technology		
Course Content	Instructional Hours / Week : 4		
Programme	Description		
1	Live Network capturing packets and analyzing over the live network		
2	Vulnerability Scanning		
3	Software Firewall and Hardware Firewall Intrusion detection and Testing		
4	Incident Response		
5	Computer Investigation and Data collection		
6	Processing Crime and Incident Scenes		
7	Email Investigation		
8	Mobile device investigation.		
Instructional Hours			60

Tools for Assessment (40 Marks)													
Application of Logic	Program Creativity	Program Debugging	Test 1	Test 2	Observation Note Book	Total							
5	5	5	10	10	5	40							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Ms. G. Bharathi							Dr. J. Maria Shyla						

Course Code	Title		
23U3DFA404	Allied Paper IV: Cyber Security		
Semester: V	Credits: 3	CIA: 20 Marks	ESE: 55 Marks
Course Objective	<ul style="list-style-type: none"> To introduce the concepts of various cyber security threats and attacks To detail about the concepts of network and web security 		
Course Category	Entrepreneurship		
Development Needs	Global		
Course Description	Develop Problem Solving Skills to solve the computer based issues		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Outline the concepts of various security aspects like threats, attacks and authentication procedures	Lecture	Just – A – Minute Presentation
CO 2	Understand the various encryption techniques and RSA algorithm	Tutorial	Poster Presentation
CO 3	Interpret the network and wireless attack in real time	Lecture	Assignment
CO 4	Evaluate the network security applications	Tutorial	Seminar
CO 5	Analyse web security for secured online payments	Flipped Classroom	Quiz
Offered by	DCFS		
Course Content	Instructional Hours / Week : 3		
Unit	Description	Text Book	Chapters
I	Introduction to Cyber Security. Confidentiality, Integrity and Availability – Triad. Attacks: Threats, Vulnerabilities and Risk. Risk Management, Risk Assessment and Analysis. Information Classification, Policies, Standards, Procedure and Guidelines. Controls: Physical, Logical and Administrative; Security Frameworks, Defence in-depth: Layers of Security. Identification and Authentication – Factors. Authorization and Access Controls-Models, Methods and Types of Access Control.		
Instructional Hours			9 Hrs
Suggested Learning Methods : Video lectures about the basics of Cyber Security			
II	Basics of Cryptography: Definitions and Concepts, Symmetric and Asymmetric Cryptosystems, Classical Encryption Techniques – Substitution Techniques, Transposition Techniques, Block Ciphers and Stream Ciphers, Hybrid Encryption Techniques, One-Time Pad. E-mail security, Internet and Web Security. Steganography and its detection, Data Encryption Standard (DES), Principles of public key cryptosystems-The RSA algorithm-Key management - Diffie Hellman Key exchange.		
Instructional Hours			9 Hrs
Suggested Learning Methods : Group Discussion			

III	Network and Wireless Attacks : Network Sniffing, Wireshark, packet analysis, display and capture filters, Ettercap, DNS Poisoning, ARP Poisoning, Denial of services, Vulnerability scanning, Setup network IDS/IPS, Router attacks, Man-in-the-middle Attack, Nmap, open ports, filtered ports, service detection, network vulnerability assessment, Evade anti-viruses and firewalls, Protocols, MAC Filtering, Packet Encryption, Packet Sniffing, Types of authentication, Attacks on WEP , WPA and WPA-2 Encryption, fake hotspots.												
Instructional Hours												9 Hrs	
Suggested Learning Methods : Video Lecture													
IV	Network Security: IP security architecture, Security protocols, IPSec, Web Security – Firewalls, IDS, IDPS – Types and Technologies. Trusted systems – Electronic payment protocols. Network Security Applications, Authentication Mechanisms: Passwords, Cryptographic authentication protocol, Kerberos, X.509 LDAP Directory. Digital Signatures.												
Instructional Hours												9 Hrs	
Suggested Learning Methods : Apply the Cryptographic techniques in models													
V	Web Security: SSL Encryption, TLS, SET. Intrusion detection. Securing online payments (OTP).												
Instructional Hours												9 Hrs	
Suggested Learning Methods : Case Study													
Total Hours												45 Hrs	
Text Books		1. William Stallings; “Cryptography and Network Security: Principles and Practices”, Fifth Edition, Prentice Hall Publication Inc., 2007. 2. Nina Godbole and SunitBelapore; “Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives”, Wiley Publications,2011.											
Reference Books		1. Matt Bishop, “Computer Security Art and Science”, Pearson/PHI, 2002. 2. Michael E Whiteman and Herbert J Mattord; “Principles of Information Security”, Vikas Publishing House, New Delhi, 2003. 3. AtulKahate “Cryptography and Network Security” McGraw Hill Education (India), 2008. 4. Alfred J. Menezes, Paul. C. Van Oorschot, and Scott A. Vanstone “Handbook of Applied Cryptography”, CRC press, Lib of Congress -2006											
Web. URLs		1. https://onlinecourses.swayam2.ac.in/aic20_sp06/preview 2. https://onlinecourses.swayam2.ac.in/arp19_ap79/preview											
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz								Total
4	4	5	2	2	3								20
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	M	H	H	M	M
CO2	M	M	M	M	H	M	M	M	H	H	H	M	H
CO3	H	L	M	H	M	M	L	H	M	H	H	M	M
CO4	M	H	L	M	L	L	H	M	H	M	H	H	M
CO5	M	M	H	H	M	H	M	H	H	H	M	H	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. D.Suryaprabha							Dr. J. Maria Shyla						

Course Code	Title		
23U4DFZ402	Skill Based Paper – II Practical in BASH Scripting		
Semester: IV	Credits: 3	CIA: 30 Marks	ESE: 45 Marks
Course Objective	The aim of the course is to make the students understand the basic concepts and working on Bash scripting.		
Course Category	Skill Development		
Development Needs	Global		
Course Description	The course gives hands on experience on Bash scripting language and will provide fundamental knowledge on Scripting language		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Understand the basic file / directory access through shell scripting	Demonstration Method	Laboratory Experiments
CO 2	Extract current date and time using shell scripting		
CO 3	Develop a script to validate the password strength		
CO 4	Explore files and sub directories using shell script		
CO 5	Create applications by adding new extensions		
Offered by	DCFS		
Course Content	Instructional Hours / Week :3		
Programme	Description		
1	Write a shell script to check to see if the file “file_path” exists. If it does exist, display “file_path passwords are enabled.” Next, check to see if you can write to the file. If you can, display “You have permissions to edit “file_path.” If you cannot, display “You do NOT have permissions to edit “file_path”		
2	Write a shell script that prompts the user for a name of a file or directory and reports if it is a regular file, a directory, or another type of file. Also perform an ls command against the file or directory with the long listing option.		
3	Write a shell script that accepts a file or directory name as an argument. Have the script report if it is regular file, a directory, or another type of file. If it is a directory, exit with a 1 exit status. If it is some other type of file, exit with a 2 exit status.		
4	Write a shell script that consists of a function that displays the number of files in the present working directory. Name this function “file_count” and call it in your script. If you use variable in your function, remember to make it a local variable		
5	Write the shell script that displays one random number on the screen and also generates a system log message with that random number. Use the “user” facility and “info” facility for your messages.		
6	Write a shell script to get the current date, time, username and current working directory		
7	Write a shell script to print a number in reverse order. It should support the following requirements.		

	The script should accept the input from the command line. If you don't input any data, then display an error message to execute the script correctly.												
8	Write a shell script to find out the unique words in a file and also count the occurrence of each of these words. We can say that the file under consideration contains many lines, and each line has multiple words.												
9	Write a shell script to validate password strength. Here are a few assumptions for the password string. Length – minimum of 8 characters. Contain both alphabet and number. Include both the small and capital case letters.												
10	Write a shell script to print the count of files and subdirectories in the specified directory												
11	Write a shell script to reverse the list of strings and reverse each string further in the list.												
12	Write a shell script that adds an extension “.new” to all the files in a directory.												
Instructional Hours												45	
References: https://www.pluralsight.com/courses/bash-shell-scripting													
Tools for Assessment (30 Marks)													
Application of Logic	Program Creativity	Program Debugging	Test 1	Test 2	Observation Note Book	Total							
4	4	4	7	7	4	30							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. D. Suryaprabha							Dr. J. Maria Shyla						

Course Code	Title		
22U4NM4BT2	Part IV : Basic Tamil – II (அடிப்படைத்தமிழ் - II)		
Semester: IV	Credits: 2	CIA: 50 Marks	
(Common to all UG Programmes)			
Course Objective	அற இலக்கியங்களை அறிமுகப்படுத்துதல்.		
Course Category	Skill Development (மாணவர்களின் மொழித்திறனை ஊக்குவித்தல்)		
Development Needs	Regional (தமிழ் மொழியின் அவசியத்தை உணர்த்துதல்)		
Course Description	மாணவர்களின் மொழித்திறனை ஊக்குவித்தல்		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	அற இலக்கிய அறிவு பெறுதல் - சிறுகதைகள் வழி சமூக அறிவு பெறுதல்.	விரிவுரை / காணொளி வகுப்பு	ஒப்படைவு
CO 2	தமிழ் எழுத்துக்கள் அறிமுகம் செய்தல் மற்றும் வாசித்தல் ஆகியவற்றின் பயன்பாடு.	குழு விவாதம்/ விரிவுரை	கருத்தரங்கு
CO 3	பிறமொழி அறிவுத் திறன் மேம்படச்செய்தல்.	விரிவுரை/காணொளி ப்பட விளக்கம்	ஒப்படைவு
CO 4	மொழிப்பெயர்ப்புத் திறன் மேம்படச்செய்தல்.	விரிவுரை/ குழு விவாதம்	குழுத்திட்டம்
CO 5	வார்த்தை அமைக்கும் திறன் பெறச்செய்தல்.	விரிவுரை / குழுத்திட்டம்	குழுத்திட்டம்
Offered by	தமிழ்த்துறை		
Course Content : Basic Tamil – II (அடிப்படைத்தமிழ் II)		Instructional Hours / Week : 2 Hours	
Unit	Description	Text Book	Chapters
I	நீதி நூல்கள்	1.பாரதியார் ஆத்திச்சூடி 2.கொன்றைவேந்தன்	1.1 1 முதல் 12 வரிகள் 2.1 1 முதல் 7 வரிகள்
Instructional Hours		6 Hours	
Suggested Learning Methods : நீதிநூல்களின் சிறப்பினை அறியும் பயன் பெற்றமை			
II	பதினெண் கீழ்க்கணக்கு நூல் (திருக்குறள்)	திருக்குறள்	2.1.கடவுள் வாழ்த்து -அகர முதல எனத் தொடங்கும்... அதி 1 குறள் -1 2.2. வான் சிறப்பு- நீரின்றி அமையாது உலகு. அதி-2.குறள் - 10 2.3. அன்புடைமை - அன்பின் வழியது உயிர்நிலை. அதி - 8.குறள் - 10 2.4. கல்வி - கண்ணுடையார் என்பர் . அதி-40 குறள்-393 2.5. இனியவை கூறல் - இனிய உளவாக இன்னாத அதி10. குறள் -10
Instructional Hours		6 Hours	
Suggested Learning Methods : திருக்குறளின் சிறப்பினை அறிந்தமை			
III	கிராமியக் கதைகள்	கிராமியக் கதைகள்	3.1.பரமார்த்தக்குரு கதைகள் 3.2.நாட்டுப்புறக் கதைகள் அறிமுகம்
Instructional Hours		6 Hours	
Suggested Learning Methods : கிராமியக் கதைகளின் கதை அமைப்பினை அறியும் வாய்ப்பு பெற்றமை			

IV	மொழிப்பயிற்சி	மொழிப்பயிற்சி	4.1. பிறமொழிச் சொற்களுக்கு தமிழ்ச்சொல் எழுதுதல்										
Instructional Hours		6 Hours											
Suggested Learning Methods :		தமிழ்ச்சொல் எழுதும் திறன் பெற்றமை											
V	எழுத்துப்பயிற்சி	எழுத்துப்பயிற்சி	5.1 தன்விவரம் எழுதுதல் 5.2 பெயர், கல்லூரி விவரம் எழுதச்செய்தல்										
Instructional Hours		6 Hours											
Suggested Learning Methods :		பிறமொழி கலப்பு இன்றி தமிழ்ச்சொல் எழுதும் திறன் பெற்றமை											
Total Hours		30 Hours											
Text Books	1. இளங்கலை தமிழ் மாணவர்களுக்குரிய பாடநூல் “அரிச்சுவடி” 2. தொகுப்பு: தமிழ்த்துறை, நேரு கலை மற்றும் அறிவியல் கல்லூரி, கோயம்புத்தூர்.												
Reference Books	1. ஓளவையார் ஆத்திச்சூடி மணிவாசகர் பதிப்பகம், கோயம்புத்தூர் இராஜவீதி, 01. 2. திருக்குறள் - பரிமேலழகர் உரை, மணிவாசகர் பதிப்பகம், சென்னை - 600018.												
Web. URLs	https://youtu.be/d5be921uxhE , https://youtu.be/Wtg-GJpfXTM .												
Tools for Assessment (50 Marks)													
CIA I	CIA II	CIA III	Seminar	Assignment	Group Project	Total							
8	8	10	8	8	8	50							
Mapping													
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	L	H	L	H	M	H	H					
CO2	L	L	H	L	M	M	L	H					
CO3	H	L	H	L	L	M	M	H					
CO4	H	L	M	L	L	M	H	M					
CO5	H	L	H	L	M	M	H	H					
H-High; M-Medium; L-Low													
Course designed by							Verified by						
Dr. S. Satheesh Kumar							Dr. A. Sridevi						

Course Code	Title		
22U4NM4AT2	Part IV : Advanced Tamil – II (சிறப்புத்தமிழ் -II)		
Semester: IV	Credits: 2	ESE: 50 Marks	
Course Objective	நூல்களின் வழி அறச் சிந்தனைகளை உருவாக்குதல் செம்மொழியினைச் செம்மைப்படுத்துதல்.		
Course Category	Skill Development (மாணவர்களின் மொழித்திறனை ஊக்குவித்தல்)		
Development Needs	Regional (தமிழ் மொழியின் அவசியத்தை உணர்த்துதல்)		
Course Description	மாணவர்களின் மொழித்திறனை ஊக்குவித்தல்		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	அறச்சிந்தனைகள் பெறுதல் மற்றும் இலக்கண வழக்கு முறைகளைப் பெறுதல்.	விரிவுரை/காணொளிப்பட விளக்கம்	கருத்தரங்கு
CO 2	கடிதம் எழுதுதல் மற்றும் மொழியறிவைப் பெறுதல்	விரிவுரை/ குழு விவாதம்	ஒப்படைவு
CO 3	படைப்பாக்கத்திறன் அறிவுபெறச்செய்தல்	விரிவுரை	கருத்தரங்கு
CO 4	தகவல் தொடர்பியலுக்கான கடிதம், அமைவுத்திறன் பெறச்செய்தல்	விரிவுரை/ குழு விவாதம்	குழுத்திட்டம்
CO 5	மொழியைப் பிழையின்றிப் பேச, எழுதும் திறன் பெறச்செய்தல்	விரிவுரை/காணொளிப்பட விளக்கம்	ஒப்படைவு
Offered by	தமிழ்த்துறை		
Course Content : Advanced Tamil – II (சிறப்புத்தமிழ் -II)		Instructional Hours / Week : 2	
Unit	Description	Text Book	Chapters
I	பதினெண் கீழ்க்கணக்கு நூல்கள்	1.திருக்குறள் 2.நாலடியார்	1.1. கூடாநட்பு 1.2. செய்நன்றியறிதல் - நாலடியார் 1.3. கல்வி (131,132 செய்யுள்கள்)
Instructional Hours			6
Suggested Learning Methods : திருக்குறளின் சுவை அறியும் வாய்ப்பு பெற்றமை			
II	சிறுகதை	1.வெ.இறையன்பு - பூனாத்தி சிறுகதைகள்	2.1 சேவியர் வாத்தியார் 2.2 தூரிகை
Instructional Hours			6
Suggested Learning Methods : சிறுகதைகளின் சுவை அறியும் வாய்ப்பு பெற்றமை			
III	இலக்கணம்	இலக்கணப் பயிற்சி ஏடு	3.1 எழுத்தும் சொல்லும் 3.2 சுட்டெழுத்துகள் 3.3 சொற்களைச் சரியாகப் பயன்படுத்தும் முறை 3.4 வினைச்சொற்கள், பெயர்ச்சொற்கள் 3.5 வினா எழுத்துகள்
Instructional Hours			6
Suggested Learning Methods : இலக்கணப் பிழை இன்றி எழுதும் பயிற்சி பெற்றமை			
IV	வழக்கறிதல்	இலக்கணம்	மரபு வழக்கு - இயல்பு வழக்கு, தகுதி வழக்கு - அறிதல்
Instructional Hours			6
Suggested Learning Methods : வழக்குகள் பற்றி முழுமையாக அறியும் பயிற்சி பெற்றமை			

V	படைப்பாற்றல் பயிற்சி	இலக்கிய வரலாறு	கவிதை-சிறுகதை-நூல் மதிப்பீடு எழுதுதல்
Instructional Hours			6
Suggested Learning Methods : மதிப்பீடு செய்யும் பயிற்சி பெற்றமை			
Total Hours			30 Hrs
Text Books	1. இளங்கலைத்தமிழ் மாணவர்களுக்குரிய பாடநூல்“திரட்டு” தொகுப்பு: தமிழ்த்துறை, நேரு கலை மற்றும் அறிவியல் கல்லூரி, கோயம்புத்தூர்.		
Reference Books	1. திருக்குறள் –பரிமேலழகர் உரை, மணிவாசகர் பதிப்பகம், சென்னை - 018 2. வெ.இறையன்பு - புனாத்தி சிறுகதைகள், விஜயா பதிப்பகம், கோவை.		
Web. URLs	https://youtu.be/_vB59q6At8s , https://youtu.be/aSvxO_rV9eQ .		
Course designed by		Verified by	
Dr. S. Satheesh Kumar		Dr. A. Sridevi	

Course Code	Title	
21U4NM4GEN	Non Major Elective : General Awareness	
Semester : IV	Credits : 2	ESE : 50 Marks

(Common to all UG Programmes)

Course Objective:

Enable the students to learn General knowledge and prepare for different competitive exams.

Course Outcomes:

CO1	Determine Verbal Aptitude , Numerical Aptitude and Logical Reasoning
CO2	Recall basic Science, history , Tamil , Computer , Commerce concepts which would help to crack competitive Examinations
CO3	Acquire time Management skills to attempt competitive Examinations
CO4	Develop Aptitude and problem solving skills
CO5	Gain Knowledge about Current Affairs

Course Content

Instructional Hours / Week : 2

S. No.	Topics
1.	Verbal Aptitude
2.	Numerical Aptitude and Logical Reasoning
3.	Abstract Reasoning
4.	Tamil and Other Literature
5.	General Science and Technology
6.	Computer
7.	Economics and Commerce
8.	History and Freedom Struggle
9.	Sports
10.	Current Affairs
Total Hours : 30	

Text Book: “General Awareness”, compiled by Nehru Arts and Science College, Coimbatore

Mapping

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	L	-	-	H	-	-	L	-	L	-	L	L
CO2	H	L	-	-	H	-	-	L	-	L	-	L	L
CO3	H	L	-	-	H	-	-	L	-	L	-	L	L
CO4	H	L	-	-	H	-	-	L	-	L	-	L	L
CO5	H	L	-	-	H	-	-	L	-	L	-	L	L

H-High; M-Medium; L-Low

Course Designed by	Verified by Chairman
P Sheeba Maybell	Dr. T Chandrapushpam

Course Code		Title		
22U4VBOE01		Value Based Open Elective Course : Design Ecosystem		
Semester: IV		Credits: 2	ESE: 50 Marks	
Course Objective		To gain the knowledge on ecosystem and environmental sustainability		
Course Category		Crosscutting Issue : Environment And Sustainability		
Development Needs		Global		
Course Description		Design ecosystem describes about the components, types, structural and functional unit of ecology where the living organisms interact with each other and the surrounding environment.		
Course Outcomes		Teaching Methods		
CO 1	Understand about the basic concepts of ecosystem and environmental planning	Lecture / Video Lessons		
CO 2	Gain knowledge of challenges and design process of ecosystem	Lectures / Video Lessons		
CO 3	Understand about functions and flow of energy in ecosystem	Case study / Model		
CO 4	Analyse about process and mechanism of ecosystem control	Tutorial / Group Discussion		
CO 5	Demonstrate about green infrastructure and regulatory framework	Lecture / Tutorial		
Course Content		Instructional Hours / Week : 2		
Unit	Description	Text Book	Chapters	
I	Sustainable Human Dominated-Ecosystem and Environmental planning: Introduction to Ecology & environmental sciences; Principles and Scope of Ecology. Axioms of Ecological Engineering, Sustainable design principles, Global population dynamics, Human dominated earth.	1	1	
			Instructional Hours	6
Suggested Learning Methods : Video Lectures				
II	Designing Ecosystem services & Biomes: Design challenges and needs, the design process, biomes, ecoregions, other land classification systems.	1	3 & 4	
			Instructional Hours	6
Suggested Learning Methods : Video Tutorials				
III	Energy and mass flow through ecosystem: Structure and Functions of Ecosystems - Abiotic and Biotic components, Flow of energy and cycling of materials; water, carbon, nitrogen and phosphorus	3	2	
			Instructional Hours	6
Suggested Learning Methods : Group Discussion				

IV	Ecosystem control: Population control process, community control process. Stream restoration design - hydrology, sedimentology, geomorphology, habitat, riparian corridor and construction.	2	6
Instructional Hours			6
Suggested Learning Methods : Group Discussion			
V	Green infrastructure design: Green infrastructure network, sustainable cities initiatives, agricultural sustainability indicators, surrounding environmental, ecological and social justice; environmental ethics, issues and possible solutions	3	4
Instructional Hours			6
Suggested Learning Methods : Online Tutorial			
Total Hours			30
Text Books	<ol style="list-style-type: none"> 1. Matlock, M. D. and M. Robert. Ecological Engineering Design: Restoring and Conserving Ecosystem Services. JohnWiley & Sons, Inc. 2011. 2. Meffe, G.K., L. Nielson, R. L. Knight and D. Schenborn. Ecosystem Management: Adaptive, Community-Based Conservation. Island Press. 2012. 3. Elliot, D. 2003. Energy, Society and Environment, Technology for a Sustainable Future. Routledge Press. 		
Reference Books	<ol style="list-style-type: none"> 1. Sim Van Der Ryn and S. Cowan. Ecological Design. Island Press, 1996. 2. Neeraja, N. Environment and Ecology: A Dymanic Approach, 3rd Edition. GKP Books Catalogue. 2018. 		
Web. URLs	<ol style="list-style-type: none"> 1. https://www.nationalgeographic.org/encyclopedia/ecosystem/ 2. https://www.environmentandecology.com/ 		
Course designed by		Verified by Chairman	
Dr. S. Esath Natheer		Dr. N. Thangavel	

Course Code	Title		
22U4VBOE02	Value Based Open Elective Course: Design Thinking		
Semester: IV	Credits : 2	ESE : 50 Marks	
Course Objective	Inculcate the fundamental concepts of design thinking and develop the students as a good designer by imparting creativity and problem solving ability		
Course Category	Crosscutting Issue : Professional Ethics		
Development Needs	Local, National and Global		
Course Description	The course aims to provide introduction to the basic concepts and techniques of design thinking and methods of implementing design thinking in the real world.		
Course Outcomes		Teaching Methods	
CO 1	Learn the basic concepts of design thinking	Direct Instruction	
CO 2	Develop the skill of applying the design thinking	Direct Instruction	
CO 3	Learn the business uses of design thinking	Video Lessons	
CO 4	Understand the variety of approaches within the design thinking discipline	Direct Instruction	
CO 5	Impart knowledge in design thinking mindset	Direct Instruction	
Course Content		Instructional Hours / Week: 2	
Unit	Description	Text Book	Chapters
I	Design Thinking Background Definition of Design Thinking, Variety within the Design Thinking Discipline, Design Thinking Mindset	1	1
Instructional Hours			06
Suggested Learning Methods: Brain Storming			
II	Design Thinking Approach Fundamental Concepts – Empathy, Ethnography, Divergent Thinking, Convergent Thinking, Visual Thinking, Assumption Testing, Prototyping, Time for Learning and Validation	1	5,1,3
Instructional Hours			06
Suggested Learning Methods : Learning by Teaching			
III	Design Thinking Resources – People, place, material, organizational fit Design Thinking Processes - Numerous Approaches, Double Diamond Process, 5-Stage, School Process, Designing for Growth Process, Role of Project Management	1	5,6
Instructional Hours			06
Suggested Learning Methods : DIY Activities			

IV	Design Thinking in Practice I: Process Stages of Designing for Growth - Design Thinking Tools and Methods – I- Purposeful Use of Tools and Alignment with Process, Visualization, Journey Mapping	1	6
Instructional Hours			06
Suggested Learning Methods: Case Method			
V	Design Thinking in Practice II: Design Thinking Tools and Methods – II- Value Chain Analysis, Mind Mapping, Brainstorming, Concept Development, Assumption Testing, Rapid Prototyping, Customer Co-Creation, Learning Launch	2	8
Instructional Hours			06
Suggested Learning Methods : Project Based Learning			
Total Hours			30
Text Books	<ol style="list-style-type: none"> 1. “Designing for growth: A design thinking tool kit for managers”, by Jeanne Liedtka and Tim Ogilvie., 2011, ISBN 978-0-231-15838-1 2. “The design thinking playbook: Mindful digital transformation of teams, products, services, businesses and ecosystems”, by Michael Lewrick, Patrick Link, Larry Leifer., 2018, ISBN 978-1-119-46747-2 		
Reference Books	<ol style="list-style-type: none"> 1. “Presumptive design: Design provocations for innovation”, by Leo Frishberg and Charles Lambdin., 2016, ISBN: 978-0-12-803086-8 2. “Systems thinking: Managing chaos and complexity: A platform for designing business architecture.”, “Chapter Seven: Design Thinking”, by JamshidGharajedaghi, 2011, ISBN 978-0-12-385915-0 		
Web. URLs	<ol style="list-style-type: none"> 1. https://www.designcouncil.org.uk/news-opinion/design-process-what-double-diamond 		
Course designed by		Verified by Chairman	
Ms. M. Nandhini		Dr. S. Jayapriya	

Course Code	Title		
22U4VBOE03	Value Based Open Elective Course : Disaster Management		
Semester: IV	Credits: 2	ESE: 50 Marks	
Course Objective	To learn knowledge about disaster and risk and apply the same in the time of any disaster.		
Course Category	Crosscutting Issue : Environment And Sustainability		
Development Needs	National		
Course Description	This course is designed to provide students with a comprehensive understanding of the concepts, theories, and practices of disaster and risk management. Students will learn how to identify and assess risks, develop emergency plans, and mitigate the impact of disasters on communities and organizations.		
Course Outcomes		Teaching Methods	
CO 1	Understand different types of disasters and their impact on individuals and communities.	Lecture/ Demonstration	
CO 2	Analyze the disaster management scenario in India, the policy framework, and the role of different stakeholders in reducing disaster risk and building resilience	Lecture/ Case Studies	
CO 3	Understand the concepts of risk and vulnerability in disaster management and analyze the different approaches to disaster risk reduction.	Lectures / Video Lessons	
CO 4	Analyze the concept and nature of disaster preparedness, different components of a disaster preparedness plan	Tutorial/ Case Studies	
CO 5	Narrate the emergency responses to be taken by the national disaster management force and the practical training process on disaster management	Lecture / Class Projects	
Course Content		Instructional Hours / Week:2	
Unit	Description	Text Book	Chapters
I	Introduction on Disaster Definitions and Terminologies used in Disaster Management, Basic concepts in Disaster Management, Types of Disaster: Natural Disaster: Flood, Cyclone, Earthquakes, Landslides, epidemic or Pandemic etc. (Case studies of each), Man-made Disaster: Fire, Industrial Pollution, Nuclear Disaster, Biological Disasters, Accidents (Air, Sea, Rail & Road), Structural failures (Building and Bridge), War & Terrorism etc. (Case studies of each).	1	1
		Instructional Hours	6
Suggested Learning Methods : Power Point Presentation			
II	Disaster management in India Hazard and Vulnerability Profile India, Disaster Management Indian scenario, India's vulnerability profile, Disaster Management Act 2005 and Policy guidelines, National Institute of Disaster Management, National Disaster Response Force (NDRF),	1	2

	National Disaster Management Authority, States Disaster Management Authority, District Disaster Management Authority and Cases Studies.		
Instructional Hours			6
Suggested Learning Methods : PPT and Video Lecture			
III	Risk and Vulnerability Analysis Risk: Assessing Disaster Risk, Disaster Risk Reduction, Vulnerability: Its concept and analysis, Strategic Development for Vulnerability Reduction, Climate Variability & Disaster Risk, Industrial hazard and Risk Management	1	3
Instructional Hours			6
Suggested Learning Methods : Video Lecture			
IV	Disaster Preparedness Concept and Nature, Disaster Preparedness Plan, Prediction, Early Warnings and Safety Measures of Disaster, Role of Information, Education, Communication, and Training, Role of Government, International and NGO Bodies.	1	4
Instructional Hours			6
Suggested Learning Methods : PPT and Group Activity			
V	Response and 3Rs Emergency Response: Introduction, Crisis Response Plan (CRP), Communication, Participation, and Activation of Emergency Preparedness Plan, Search, Rescue, Evacuation and Logistic Management, Role of Government, International and NGO Bodies, Psychological relief and recovery, Relief operation and Recovery, Post Disaster Public Health Management, 3R - Rehabilitation, Reconstruction and Recovery, Reconstruction and Rehabilitation as a Means of Development, Damage Assessment, Post Disaster effects and Remedial Measures, Role of Educational Institutions in Disaster management.	1	5
Instructional Hours			6
Suggested Learning Methods : Laboratory Practice			
Total Hours			30
Text Books	1. Disaster and Risk Management (2023), Notes Compiled by the Department of Criminology, Nehru Arts and Science College, Coimbatore		
Reference Books	1. J. P. Singhal, "Disaster Management", Laxmi Publications, 2003. 2. M C Gupta, "Manual on Natural Disaster Management in India", NIDM, New Delhi, 2013 3. R K Bhandani, "An Overview on Natural & Man-made Disasters and their Reduction", CSIR, New Delhi, 2000 4. Dr. Mrinalini Pandey, "Disaster Management", Wiley India Pvt. Ltd, 2014. 5. National Disaster Management Authority Publications-Guidelines & Templates for Disaster Management		
Course designed by		Verified by Chairman	
Dr. V. Sudha		Dr. R. A. Ayyapparajan	

Course Code	Title		
22U4VBOE04	Value Based Open Elective Course : Environmental Pollution and Waste Management		
Semester: IV	Credits: 2	ESE: 50 Marks	
Course Objective	To acquire deeper knowledge about Environmental Management Systems		
Course Category	Crosscutting Issue : Environment And Sustainability		
Development Needs	Global		
Course Description	Environmental Pollution and waste Management involves studying the management of any unnecessary resource use or release of substances into the water, land or air that could harm human health or the environment		
Course Outcomes		Teaching Methods	
CO 1	Understand the types of environmental pollutants	Lecture / Group Learning	
CO 2	Describe, develop and interpret methods of the Environmental Management Systems.	Lecture/ Online Tutorial	
CO 3	Critically evaluate methods and possibilities within Environmental Management Systems from asystems perspective.	Lecture/ Online Tutorial	
CO 4	Understand the effective management of environmental pollutants	Lecture/ Online Tutorial	
CO 5	Learn Environmental Auditing for various Industries/Projects.	Lecture/ Online Tutorial	
Course Content		Instructional Hours / Week : 2	
Unit	Description	Text Book	Chapters
I	Introduction to Environmental pollutants,Types of pollutants, Biodegradable pollutants, Non-biodegradable pollutants; Air pollution, Water Pollution, Soil Pollution	1	1,2
Instructional Hours			6
Suggested Learning Methods : Industrial Visit			
II	Introduction to Environmental Management System basic definitions and terms, Framework for Environmental Management Systems, Approach for developing an Environmental Management System.	2	2, 4
Instructional Hours			6
Suggested Learning Methods : Web search			
III	The introduction and implementation of ISO 14001: environmental policy, planning, implementation and operation, checking, management review. Applications EMS in terms of Process flow chart, effluent Generation, composition and treatment of effluents from following industries – sugar, pulp and paper, electroplating, dairy, oil refineries, etc.	2	5
Instructional Hours			6
Suggested Learning Methods : Online tutorial			

IV	Introduction to Environmental Auditing, Category “A” & “B” types of projects. Procedures and Guidelines to conduct Environmental Audit. Plastic Pollution: Causes, impacts, and reduction strategies -Global issue of plastic pollution and innovative solutions	3	7
Instructional Hours			6
Suggested Learning Methods : Online tutorial			
V	Municipal Solid Waste Management: Collection, transportation, and disposal of solid waste - Examination of waste treatment technologies and waste-to-energy processes. E-waste Management: Challenges and recycling techniques for electronic waste - Discussion on the environmental and health hazards associated with improper e-waste disposal.	1	8
Instructional Hours			6
Suggested Learning Methods : Online tutorial			
Total Hours			30
Text Books	<ol style="list-style-type: none"> 1. ISO 14001 Certification - Environmental Management Systems: A Practical Guide for Preparing Effective Environmental Management Systems Textbook Binding – Import, 10 Aug 1995 by W. Lee Kuhre (Author) 2. M. N Rao, “Waste Water Treatment” Oxford and IBH publishing Co. Pvt Ltd, 2007 3. Peavy, H.S, D.R. Rowe & T. George, “Environmental Engineering”, New York: McGraw Hill, 1987 		
Reference Books	<ol style="list-style-type: none"> 1. Christopher Sheldon and Mark Yoxon, “Installing Environmental management Systems – a step by step guide” Earthscan Publications Ltd, London, 1999. 		
Web. URLs	<ol style="list-style-type: none"> 1. https://www.anits.edu.in/online_tutorials/es/Unit%203.pdf 		
Course designed by		Verified by Chairman	
Dr. O. S. Nimmi		Dr. N. Saranya	

Course Code	Title		
22U4VB0E05	Value Based Open Elective Course : History of Ancient India		
Semester: IV	Credits: 02		ESE : 50 Marks
Course Objective	To explore the rich and diverse history of ancient India, examining its civilizations, political systems and cultural achievements.		
Course Category	Employability		
Development Needs	Global		
Course Description	This course gives an in depth analysis of the Ancient Indian History marking the beginning of urban civilization in the Indian subcontinent.		
Course Outcomes		Teaching Methods	
CO 1	Understand the salient features of Indus valley civilization	Lecture	
CO 2	Evaluate the features Civilizations	Tutorial	
CO 3	Evaluate the rise of new movements	Lecture	
CO 4	Visualize the administration of Mauryas and the art and architecture of Mauryas	Tutorial	
CO 5	Identify the administration of Guptas and their contribution to University	Lecture	
Course Content		Instructional Hours / Week : 2	
Unit	Description	Text Book	Chapters
I	Definitions - Nature and Scope of History - History and Its Relationship with other Social Sciences - Geographical Features of India Sources of Indian History: Pre- History Paleolithic, Mesolithic, Neolithic, Chalcolithic and Megalithic Cultures.	1 & 4	1-5
Instructional Hours			6
Suggested Learning Methods : Lecture/Tutorial			
II	Indus Valley Civilization - Its Features & Decline; Early Vedic and Later Vedic Civilizations Vedic Literature Society Economy - Polity Religion.	2	2-4
Instructional Hours			6
Suggested Learning Methods : Lecture/Tutorial			
III	Rise of New Religious Movements Charvakas, Lokayathas, Jainism and Buddhism; Mahajanapadas - Rise of Magadha; Impact.	3	3
Instructional Hours			6
Suggested Learning Methods : Lecture/Tutorial			

IV	Foundation of the Mauryan Dynasty; Ashoka and His Dharma Polity Administration - Society Economy Religion Literature - Art and Architecture; Disintegration of the Mauryan Empire; Post-Mauryan Kingdoms - Indo-Greeks - Kushanas and Kanishka - Society Economy Literature Art and Architecture; The Satavahanas; Sangam Age Literary Development.	4	4 & 5
Instructional Hours			6
Suggested Learning Methods : Lecture/Tutorial			
V	Gupta Empire: A Brief Political Survey - Polity and Administration, Social and Economic Conditions, Agriculture and Land Grants - Feudalism, Caste System, Position of Women, Education, Literature, Science and Technology, Art and Architecture - Harshavardana and His Achievements.	4	5
Instructional Hours			6
Suggested Learning Methods : Lecture/Tutorial			
Total Hours			30
Text Books	<ol style="list-style-type: none"> 1. E.H. Carr, What is History? Penguin Books, England, 1990. 2. Majumdar, R.C., History and Culture of the Indian People, Vols. I, II & III. 3. Romila Thapar, Asoka and the Decline of the Mauryas, OUP, New Delhi, 1995. 4. Romila Thapar, Early India (From the earliest to AD 1300). 		
Reference Books	<ol style="list-style-type: none"> 1. Poonam Dalal : Ancient and Medieval India for UPSC & State Level Exam 		
Course designed by		Verified by Chairman	
Ms. S. Kavitha		Dr. R. Malathi	

Course Code		Title	
22U4VBOE06		Value Based Open Elective Course : Indian Knowledge System	
Semester: IV		Credits: 2	ESE: 50 Marks
Course Objective		To make the students understand the knowledge system in India and apply it to their day to day life	
Course Category		Value Education	
Development Needs		National	
Course Description		This course will actively engage for spreading the rich heritage of our country and traditional knowledge in the field of Arts and literature, Agriculture, Basic Sciences, Engineering & Technology, Architecture, Management, Economics, etc	
Course Outcomes		Teaching Methods	
CO 1	Understand the History and an overview of Indian knowledge System.	Flipped Classroom	
CO 2	Interpret the Importance of Vedic Corpus and Philosophical System	Student Centric	
CO 3	Analyse the Foundational Concepts like Linguistics and and Number Systems.	Blended Mode	
CO 4	Interpret the concepts of Astronomy and Town Planning Architecture.	Flipped Classroom	
CO 5	Describe the Importance of Health, Wellness, Psychology and Administrative Governance	Case-Base	
Course Content		Instructional Hours / Week : 2	
Unit	Description	Text Book	Chapters
I	Indian Knowledge System : An Introduction: Importance of Ancient Knowledge-Defining Indian Knowledge System –The Indian Knowledge System Corpus-A Classification Framework-History of Indian Knowledge System.	1	1
Instructional Hours			06
Suggested Learning Methods : Cooperative Learning			
II	The Vedic Corpus: Introduction to Vedas-The four Vedas. Philosophical System: Indian Philosophical System – Development and Unique Features-Vedic schools of Philosophy.	1	2 & 3
Instructional Hours			06

Suggested Learning Methods : Peer Learning			
III	<p>Linguistics: Component of a Language-Role of Sanskrit in Natural Language Processing.</p> <p>Mathematics: Unique Aspects of Indian Mathematics-Great Mathematicians and their Contributions-Arithmetic Calculations.</p>	1	5 & 8
Instructional Hours			06
Suggested Learning Methods : Group Learning			
IV	<p>Astronomy: Unique aspects of Indian Astronomy-Historical Development of Astronomy in India-Elements of the Indian Calendar</p> <p>Town Planning Architecture: Indian Architecture- A Historical Perspective –Town Planning-Unitary Building –Temple Architecture</p>	1	9 & 12
Instructional Hours			06
Suggested Learning Methods : Mind Mapping			
V	<p>Health, Wellness and Psychology: Ayurveda -Definition of Health-Tridosas-Relationships to Health-Disease-Disease Management-Yoga way of Life-Indian Approach to Psychology.</p> <p>Governance and Public Administration: Arthasastra Governance and Administration.</p>	1	13 & 14
Instructional Hours			06
Suggested Learning Methods : Case Studies			
Total Hours			30
Text Books	1. B.Mahadevan,Vinayak Rajat Bhat,Nagendra Pavana R.N , Introduction to Indian Knowledge System: Concepts and Applications, PHI Learning Private Limited,Delhi, 2022.		
Reference Books	1. Traditional Knowledge System in India by Amit Jha Atlantic publishers, 2002. 2. Traditional Knowledge System in India, by Amit Jha, 2009.		
Web. URLs	1. https://www.youtube.com/watch?v=LZP1StpYEPM 2. http://nptel.ac.in/courses/121106003/		
Course designed by		Verified by Chairman	
Dr. N. Saranya		Dr. K. Raja Rajeswari	

Course Code	Title		
22U4VBOE07	Value Based Open Elective Course : Principles of Intellectual Property Rights		
Semester: IV	Credits: 2	ESE: 50 Marks	
Course Objective	To make the students to recognize the importance of IP and to educate the pupils on basic concepts of Intellectual Property Rights. To learn the procedure of obtaining Patents, Copyrights, Trade Marks & Industrial Design		
Course Category	Entrepreneurship		
Development Needs	Global		
Course Description	The course is designed to provide comprehensive knowledge to students regarding the general principles of IPR, Concepts and Theories, Criticisms of Intellectual Property Rights, the registration process, and the International Regime Relating to IPR.		
Course Outcomes		Teaching Methods	
CO 1	Understand Intellectual Property Rights (IPR), its significance in promoting innovation and creativity, and the different types of IPRs.	Lecture	
CO 2	Equip with the knowledge to navigate the patent filing process effectively.	Tutorial	
CO 3	Comprehend the fundamentals of copyrights, their types, registration procedures, terms and remedies	Lecture	
CO 4	Narrate the trademarks, their rights, types, purpose, registration process, and the trademark landscape in India	Tutorial	
CO 5	Analyze the significance of geographical indications (GI) and the need for their protection, the relevant laws and regulations in India	Lecture	
Course Content		Instructional Hours / Week : 2	
Unit	Description	Text Book	Chapters
I	Introduction to Intellectual Property Rights (IPR): Definition of IPR, Importance of IPR, Kinds of Intellectual property rights: Copy Rights, Patent, Trade Mark, Trade Secret and trade dress, Design, Layout Design, Geographical Indication, Plant Varieties and Traditional Knowledge, IPR in India and the world, IPR and WTO.	1	1,2
Instruction Hours			6
Suggested Learning Methods : Lecture/Tutorial			
II	Patent: Introduction to Patent, Patent Act 1970 and its amendments, Patentable and non-Patentable inventions, legal requirements for obtaining Patent, Registration Procedure of Patent, The role of Patentees and Different layers of the international patent system: National and International Patent filing procedures.	1	4
Instructional Hours			6
Suggested Learning Methods : Lecture/Tutorial			
III	Copyright: Introduction to Copyrights, Origin, and Definition & Types of Copyrights, Registration procedure, Assignment & license, Terms of Copyright, Piracy, Infringement, Remedies, Copyrights with special reference to software, Copyrights in India.	1	

Instructional Hours			6
Suggested Learning Methods : Lecture/Tutorial			
IV	Trademarks: Introduction to trademarks, Rights of trademark, Types of trademark, purpose, and function of a trademark, trademark protection, and trademark registration process, trademarks in India.	1	9
Instructional Hours			6
Suggested Learning Methods : Lecture/Tutorial			
V	Design: Introduction to Design, Registration of Design, Cancellation of Registration, International Convention on Design, functions of Design, Geo Graphical Indication: Introduction to Geo Graphical Indication, Why and how GI needs protection and GI laws, Indian GI act.	1	7,10
Instructional Hours			6
Suggested Learning Methods : Lecture/Tutorial			
Total Hours			30
Text Book	1. Intellectual Property Rights, Asha Vijay DurafeDhanashree K. Toradmalle, Wiley Publisher, 2022		
Reference Book	1. B.L. Wadera, Patents, trademarks, copyright, Designs and Geographical Judications.		
Web. URLs	1. https://dst.gov.in/sites/default/files/E-BOOK%20IPR.pdf		
Course designed by		Verified by Chairman	
Dr. K. Prathapchandran		Dr. K. Selvavinayaki	

Course Code	Title		
22U4VBOE08	Value Based Open Elective Course : Science, Society and Culture		
Semester: IV	Credits: 2	ESE: 50 Marks	
Course Objective	To create awareness on Science, Indian Society and cultural heritage of our Country		
Course Category	Skill Development		
Development Needs	Global		
Course Description	Facilitate the awareness on Science in everyday life, Indian Society and Social empowerment, Democracy and Freedom of our Country. Ancient Civilization, cultural heritage and perceptions of Indian Culture		
Course Outcomes		Teaching Methods	
CO 1	Know the concepts of Science in our daily life and awareness about Scientific community	Lecture / Video Lessons / Model	
CO 2	Gain knowledge on Indian society and development of modern society	Lecture / Video Lessons	
CO 3	Learn about Indian social issues and awareness on our social laws	Lectures / Case study	
CO 4	Understand the Indian culture, diversity of culture and Traditional customs	Tutorial / Group Discussion	
CO 5	Comparison of ancient heritage and civilization of our country and follow them in our life	Lecture / Tutorial	
Course Content		Instructional Hours / Week : 2	
Unit	Description	Text Book	Chapters
I	Common Science - Developments and their applications- effects in day to day Life - Achievements of Indians in Science and Technology. Awareness in the fields of IT, Space, Computers, Robotics, Nanotechnology and Biotechnology. Scientists of Ancient India, Science and Scientists of Medieval India, Scientists of Modern India. India's Policy in the Field of the Science, Policies and Reports related to Science-Innovative Technology Vision.	1	1
		Instructional Hours	6
Suggested Learning Methods : Video Lectures			
II	Social Behaviour - Salient features of our Society-Social diversity of India-Impact of globalization on Indian society. Social empowerment, Democracy and Freedom-Role of women and women's organization in the development of healthy society.	2	1
		Instructional Hours	6
Suggested Learning Methods : Video Tutorials			
III	National Integration – Communalism - Regionalism and Secularism – Problems relating to development and management of Social Sector-Services relating to Health, Education and Human Resources. Welfare schemes for vulnerable sections of the people-Performance of Centre and States schemes-Mechanisms-Laws,	2	1 & 2

	Institutions and Bodies constituted for the protection and development of vulnerable sections.		
Instructional Hours			6
Suggested Learning Methods : Group Discussion			
IV	South Asian Cultures -Indian culture-combination of several cultures-Indian philosophy-Religious culture-Family structure and marriage-Wedding rituals-Indian greetings-Indian foods- Festivals-Traditional clothing. Epics of India-Indian Arts and Music-Indian architecture and Sculptures-Indian Languages and Literature-Perceptions of Indian culture.	3	1
Instructional Hours			6
Suggested Learning Methods : Video Tutorials			
V	Ancient Civilization -Indus Valley Civilization-Harappa and Mohenjo-Daro civilization-Evolutions of early Buddhist Architecture-Advent in China-Ellora caves civilization-King Gupta's period of civilization-Vijayanagara inscriptions-Mohall's period of civilization-British culture.	4	2
Instructional Hours			6
Suggested Learning Methods : Online Tutorial			
Total Hours			30
Text Books	<ol style="list-style-type: none"> 1. Science, Culture and Society: Understanding Science in the 21st Century by Mark Erickson, Paperback – Illustrated, 2015. 2. Khanna, Indian Social order and Laws, Universities Press. 3. Choudhary, Social Protection Law Provisions and Procedure. 4. Indian Heritage systems-Universal Law Publishing Company. 5. Ancient Civilization of Indian sub-continent- Ancient Books. 		
Reference Books	<ol style="list-style-type: none"> 1. National integration and Secularism: Issues and Challenges, Regal Publications. 2. Ancient Culture of India: Issues and Concerns. 		
Web. URLs	<ol style="list-style-type: none"> 1. https://www.amazon.in/Science-Culture-Society-Understanding-Century-dp-0745662250/dp/0745662250/ref=dp_ob_title_bk. 2. https://iasscore.in/upsc-syllabus/indian-society/indian-society-mains. 3. https://www.worldhistory.org/india/ 		
Course designed by		Verified by Chairman	
Dr. K. Narayanasamy		Dr. M. Thangavel	

Course Code	Title		
22U4VBOE09	Value Based Open Elective Course : Community Engagement		
Semester: IV	Credits: 2	ESE: 50 Marks	
Course Objective	This course serves as an introduction to community engagement, helping learners to explore methods of community involvement, change making process, and professionalism within the community.		
Course Category	Skill Development		
Development Needs	National		
Course Description	Apply the principles of communication for outreach to the diverse public, decision makers, and stakeholder groups.		
Course Outcomes		Teaching Methods	
CO 1	Apply professional behavior when working with community organizations	Lecture/ Case Study	
CO 2	Investigate the complexity of problems related to community needs	Lecture/ Role Play	
CO 3	Design and conduct the phases of a community engagement process, using consensus building and relating to formal planning procedures.	Lecture/ Case Study	
CO 4	Recognize community interests, power dynamics, and conflict, and facilitate empowerment of excluded groups and negotiation	Lecture/ / Role Play	
CO 5	Direct cross-jurisdictional, inter-agency, inter-disciplinary, and multi-stakeholder collaboration.	Lecture/ Case Study	
Course Content		Instructional Hours / Week : 2	
Unit	Description	Text Book	Chapters
I	Concept, Ethics and Spectrum of Community engagement, Local community, Rural culture and Practice of community engagement	3	2
Instructional Hours			6
Suggested Learning Methods : Seminar			
II	Rural Development Programs and Rural institutions, Local Administration and Community Involvement	2	3
Instructional Hours			6
Suggested Learning Methods : Role Play			
III	Stages, Components and Principles of community development, Utility of public resources. Social contribution of community networking, Various government schemes.	1	3
Instructional Hours			6
Suggested Learning Methods : Role Play			

IV	Community Engaged Research and Ethics in Community Engaged Research. PRA, Programmes of community engagement and their evaluation.	1	2
Instructional Hours			6
Suggested Learning Methods : Creative Art Assignments			
V	Rural Distress, Rural Poverty, Impact of Disasters on Migrant Laborers, Mitigation of Disaster.	2	1
Instructional Hours			6
Suggested Learning Methods : Community Participation Program			
Total Hours			30
Text Books	<ol style="list-style-type: none"> 1. Participatory Rural Appraisal, PRA Application in Rural Development Planning, R Ramesh 2. Introduction to Community Development, Theory, Practice, and Service-Learning, Gary Paul Green, Jerry W. Robinson, Jr, 2011, SAGE Publications 		
Reference Books	<ol style="list-style-type: none"> 1. Community-based participatory research: a capacity-building approach for policy advocacy aimed at eliminating health disparities. Am J Public Health. 2010 2. Achieving successful community engagement: A rapid realist review. BMC Health Services Research. 		
Web. URLs	<ol style="list-style-type: none"> 1. https://unnatbharatabhiyan.gov.in › presentations 2. https://www.wellawareworld.org/ 		
Course designed by		Verified by Chairman	
Dr. T. Lidya		Dr. P. Nathiya	

Course Code	Title		
22U4VBOE10	Value Based Open Elective Course : Emotional Intelligence		
Semester: IV	Credits: 2	ESE: 50 Marks	
Course Objective	To enable the Students to understand the concepts of Emotional Intelligence, its models and components		
Course Category	Employability & Skill Development		
Development Needs	National & Global		
Course Description	Understanding the importance of Emotional Intelligence and build effective relationships		
Course Outcomes		Teaching Methods	
CO 1	Understand the Self-Awareness, Self-Management, Social Awareness and Relationship Management	Lecture/ Video Lectures	
CO 2	Discover personal competence and techniques of building emotional intelligence.	Lecture/ Role Play	
CO 3	Narrate the insights into establishing positive relationships	Lecture/ Peer Teaching	
CO 4	Understand the emotional intelligence and its importance	Lecture/ Role Play	
CO 5	Summarize the Self-Management Techniques	Lecture/ Group Discussion	
Course Content		Instructional Hours / Week : 2	
Unit	Description	Text Book	Chapters
I	Fundamentals of Emotional Intelligence: Meaning Definition Nature and Significance Models of Emotional Intelligence-: Ability, Trait and Mixed Building blocks of emotional intelligence: Self-awareness, Self-Management, Social Awareness, and Relationship Management	1	1&2
Instructional Hours			6
Suggested Learning Methods : Video lectures			
II	Personal Competence: Meaning Definition Self Awareness: Observing and recognizing one's own feelings, Knowing one's strengths and areas of development. Self-Management: Managing emotions, anxiety, fear, and anger.	1	5&6
Instructional Hours			6
Suggested Learning Methods : Role Play			
III	Social Competence: Social Awareness: Others' Perspectives, Empathy and Compassion Relationship Management: Effective communication, Collaboration, Teamwork and Conflict Management	2	1&2
Instructional Hours			6

Suggested Learning Methods : Peer Teaching			
IV	Emotional Intelligence: Measurement and Development - Meaning Definition, Importance Measures of emotional intelligence Strategies to develop and enhance Emotional Intelligence	2	4&5
Instructional Hours			6
Suggested Learning Methods : Role Play			
V	Self-Management Techniques: Meaning Definition Techniques to regulate emotions such as Mindfulness, Conditioned relaxation response and Boundary setting Techniques of Relationship Management: Display of empathy, Effective Communication , Teamwork , Conflict resolution	2	6&7
Instructional Hours			6
Suggested Learning Methods : Group Discussion			
Total Hours			30
Text Books	<ol style="list-style-type: none"> 1. Bar-On, R., & Parker, J.D.A.(Eds.) (2000). The handbook of emotional intelligence. San Francisco, California: Jossey Bros. 2. Goleman, D. (2005). Emotional Intelligence. New York: Bantam Book. 3. Sternberg, R. J. (Ed.). (2000). Handbook of intelligence. Cambridge University Press. 		
Reference Books	<ol style="list-style-type: none"> 1. HBR's 10 Must Reads on Emotional Intelligence (2015) 2. HBR's 10 Must Reads on Managing Yourself (2011) 3. Self-Discipline: Life Management, Kindle Edition, Daniel Johnson. 		
Course designed by		Verified by Chairman	
Dr. R. A. Ayyapparajan		Dr. R. A. Ayyapparajan	

Course Code	Title		
22U4VBOE11	Value Based Open Elective Course : Fundamentals of Tourism		
Semester: IV	Credits : 2	ESE: 50 Marks	
Course Objective	To impart Knowledge on Tourism and its development in the economic growth and also to identify the tourist needs.		
Course Category	Employability		
Development Needs	Global		
Course Description	To enhance the students to get part in the tourism industry and to know about concepts of tourism.		
Course Outcomes		Teaching Methods	
CO 1	Understand tourism and its development	Direct Instruction	
CO 2	Analyse the Factors influencing the Travel Motivations.	Direct Instruction	
CO 3	Comprehend the Tourist Transport	Video Lessons	
CO 4	Understand the Tourist Accommodations	Direct Instruction	
CO 5	Apply the Travel Agency Operations	Video Lessons	
Course Content		Instructional Hours / Week : 2	
Unit	Description	Text Book	Chapters
I	The Tourism Phenomenon: Definition – Tourism; Tour; Tourist; Visitor; Excursionist; Domestic; International; Inbound; Outbound; Destination. Growth of Tourism / Evolution / History of Tourism & Present status of tourism in India. Thomas Cook – Grand Circular Tour.	1	9, Key Terms
Instructional Hours			6
Suggested Learning Methods : Lecture Based Learning			
II	Travel Motivations: Categories of Motivations: Physical Motivators, Cultural Motivators, Interpersonal Motivators, Status and prestige Motivators. Types of Tourism: Pleasure, relaxation, Rest and recreation, Health, Participation in Sports, Curiosity and Culture, Ethnic and Family, Spiritual and Religious, Professional or Business.	1	3
Instructional Hours			6
Suggested Learning Methods : Group Learning Method			
III	Tourist Transport: Role of Transport in Tourism, Modes of Transport, Road Transport, Air Transport, Rail Transport, Sea Transport.	2	15
Instructional Hours			6
Suggested Learning Methods : Group Learning Method			
IV	Tourist Accommodation: Definition, Types of Hotels, International Hotels, Resort Hotels, Commercial Hotels, Residential Hotels, Floating Hotels. Supplementary Accommodation: Motel, Youth Hostel, Camping Sites, Pension, Bed and Breakfast Establishment, Tourist Holiday Villages, Time and Resort Condominiums.	1	8

Instructional Hours			6
Suggested Learning Methods: Group Learning Method			
V	Travel Agency: Products of Travel Agency, Classification of Travel Agency, Functions, Travel Related Business, International Travel Requirements, Travel Agency Operations.	3	2,3
Instructional Hours			6
Suggested Learning Methods: Lecture Based Learning			
Total Hours			30
Text Books	<ol style="list-style-type: none"> 1. A.K. Bhatia, Tourism Development: Principles & Practices, Sterling Publishers Pvt 2007. 2. A.K. Bhatia, International Tourism Management, Sterling Publishers Pvt 2012. 3. Jagmohan Negi, Travel Agency Operations Concepts and Principles, Kanishka Publishers and Distributors, 2003. 		
Reference Books	<ol style="list-style-type: none"> 1. Biswanth Gosh, Tourism & travel management, Vikas Publishing House, Second Edition, 2008. 2. Christopher Holloway, Business of tourism, Elsevier Publisher, Second Edition, 2006. 		
Course designed by		Verified by Chairman	
Dr. B. Tamilselvan		Dr. B. Tamilselvan	

Course Code		Title	
22U4VBOE12		Value Based Open Elective : Health Education	
Semester: IV		Credits: 2	ESE: 50 Marks
Course Objective		1. Acquire knowledge on different dimensions of health. 2. Inbuilt healthy life style practices	
Course Category		Value education	
Development Needs		Local	
Course Description		It provides knowledge on values and practices for healthy living	
Course Outcomes		Teaching Methods	
CO 1	Recall the importance of health education	Interactive session	
CO 2	Enlist the right choice of foods and dietary pattern	Interactive session	
CO 3	Identify methods to manage mental health issues	Activity based teaching	
CO 4	Practice effective personal health habits	Interactive session	
CO 5	Summarize the importance of environmental health for mankind	Interactive session	
Course Content		Instructional Hours /Week : 2	
Unit	Description	Text Book	Chapters
I	Health Education: Concept of health, Components of wellness, spectrum and determinants of health - Definition of health-health education-Aim, objective and principles of health education - Health services, Related Activity -Measuring the health attitudes of students	1	1
		Instructional Hours	6
Suggested Learning Methods: Group Activity			
II	Food and Health Basic 4, 5and7 food groups; functional food groups-energy yielding, body building and protective foods (only sources and functions), food pyramid, meal planning pattern, healthy eating pattern.Related Activity -Assessing dietary adequacy of students	3,4	1 & 1, 2
		Instructional Hours	6
Suggested Learning Methods: Peer learning			
III	Mental Health Meaning of mental health – importance of mental health-characteristics of emotionally healthy-Self esteem-Values and patterns in decision making- Mental health problem of adolescences – depression & stress -causes and management Related activity-Stress level assessment in students	1	6
		Instructional Hours	6
Suggested Learning Methods: Role play			

IV	Personal Health Definition of personal health- under nutrition and over nutrition -prevalence of life style disease-healthy lifestyle practices- personal hygiene-Importance of physical activities & exercise Related Activity -Analyzing the physical activity pattern of students	1	8
Instructional Hours			6
Suggested Learning Methods: Assignment			
V	Environment and Health Definition of environmental health, Biodiversity, climate change and biodiversity, environmental pollution-causes and consequences of air, water and soil pollution-Food contamination and consequences Related Activity-Group discussion on case studies	2	5,8
Instructional Hours			6
Suggested Learning Methods: Group Discussion			
Total hours			30
Text Books	1. Anspaugh (2001), Teaching Today's Health, Library of Congress Cataloging, 6 th Edition, US 2. Tyler Miller (2006), Environmental Science, Cengage learning India private ltd 3. Srilakshmi (2010), Dietetics, New age International private limited, New Delhi 4. Srilakshmi (2010), Food Science, New age International private limited, New Delhi		
Reference Books	1. Howley & Don Frans(B) (2003) Health Fitness Instructor's Handbook. Human Kinetics publication. 2. Ramachandran. L. Dharmalingam. T (1993) Health Education India. Vikas publishing House Private Limited		
Journals	1. Health education		
Course designed by		Verified by Chairman	
Dr. A. Swarnalatha		Dr. A. Swarnalatha	

Course Code	Title		
22U4VBOE13	Value Based Open Elective Course : Media and Politics		
Semester: IV	Credits: 2	ESE: 50 Marks	
Course Objective	To Impart knowledge of understanding the media and politics		
Course Category	Skill Development		
Development Needs	Global		
Course Description	This course examines how media and political institutions interact to shape public thinking and debates around social problems.		
Course Outcomes		Teaching Methods	
CO 1	Understand the basic idea of media and Politics	Lecture and Demonstration	
CO 2	Summarize the political stance of media.	Lecture	
CO 3	Apply the Skills on writing political news.	Lecture and Demonstration	
CO 4	Evaluate the various characteristics of media Organization.	Video Lectures	
CO 5	Apply the mass media influences as individuals, groups, and society in political contexts	Discussion	
Course Content		Instructional Hours / Week : 2	
Unit	Description	Text Book	Chapters
I	Media -- Meaning and importance. Role of media in Society Political Communication – Mass Media politics and Society- Cinema and political manifestation. Social media and Political narration	1	1
		Instructional Hours	06
Suggested Learning Methods : Learning by Teaching			
II	Characteristics of Modern Mass Media: Print and Electronic Media – Political economy and Ownership	2	2
		Instructional Hours	06
Suggested Learning Methods : Active Learning			
III	Political Economy - State ownership versus private ownership of mass media – Consequences of private and public- Media ownership pattern Government Regulation – Monopoly- Media content and its Censorship.	1	2
		Instructional Hours	06
Suggested Learning Methods : Group Learning			
IV	Public Opinion- The relationship between the mass media and public sphere- Political manipulation of media content- the impact of mass media on global political processes.	3	3
		Instructional Hours	06

Suggested Learning Methods : Visual Learning			
V	Political effects of Mass Media: Individual- group- and Society Public- making public opinion- Setting of Political agenda- Political Socialization- Political mobilization	2	4
Instructional Hours			06
Suggested Learning Methods : Case study based Learning			
Total Hours			30
Text Books	<ol style="list-style-type: none"> 1. Lowe, L. (2016). The Definitive Guide to Creative Writing and Media Productions. United States: Xlibris UK. 2. Marshall, C. (2018). Writing for Social Media. United Kingdom: BCS Learning & Development Limited. 3. Cain, S., Batty, C. (2016). Media Writing: A Practical Introduction. United Kingdom: Palgrave Macmillan. 		
Reference Books	<ol style="list-style-type: none"> 1. Mencher, Melvin."Basic News Writing" Universal Bookstall, New Delhi.1993. 2. Sreenivas Rao. Academic Book Centre, Ahmedabad. 1981. 3. Barnard, J. (2019). The Multimodal Writer: Creative Writing Across Genres and Media. United Kingdom: Bloomsbury Academic. 4. Kuehn, S. A., Lingwall, J. A. (2016). The Basics of Media Writing: A Strategic Approach. United States: SAGE Publications. 		
Web. URLs	<ol style="list-style-type: none"> 1. https://www.bing.com/videos/ 		
Course designed by		Verified by Chairman	
Dr. Bajju Paul		Dr. Paul Benzier	

Course Code		Title	
22U4VBOE14		Value Based Open Elective : Positive Psychology and Work Life	
Semester: IV		Credits: 2	ESE: 50 Marks
Course Objective		To bring an experience marked by predominance of positive emotions and informing them about emerging paradigm of Positive Psychology	
Course Category		Skill Development	
Development Needs		National	
Course Description		Build relevant competencies for experiencing and sharing happiness as lived experience and its implications	
Course Outcomes			Teaching Methods
CO 1	Understand the realities of Psychology and Work life		Lecture/ Case Study
CO 2	Insight on origin and development of Positive Psychology		Lecture/ Role Play
CO 3	Reveal the knowledge about phases of Positive Psychology		Lecture/ Case Study
CO 4	Perceptiveness about Happiness in Psychology and its Traits		Lecture/ Role Play
CO 5	Furnish the specific skills and techniques for working with Trust and Companionship		Lecture/ / Role Play
Course Content			Instructional Hours / Week : 2
Unit	Description		Text Book
I	Introduction to Positive Psychology : Positive Psychology: Concept, History, Nature, Dimension and scope of Positive Psychology Seligman's PERMA		3
			6
Suggested Learning Methods : Seminar			
II	Positive Emotional States and Processes, Positive Emotions and well being: Hope & Optimism, Love, The Positive Psychology of Emotional Intelligence, Influence of Positive Emotions		2
			6
Suggested Learning Methods : Role Play			
III	Strengths and Virtues : Character Strengths and Virtues Resilience in the phase of challenge & Loss, Empathy and Altruism		1
			6
Suggested Learning Methods : Role Play			
IV	Happiness : Introduction to Psychology of happiness, well being and scope, Types of happiness- Eudaimonic and Hedonic History of Happiness, Theories, Measures and Positive correlates of happiness, Traits associated with Happiness, Setting Goals for Life and Happiness		3
			6
Suggested Learning Methods : Creative Art Assignments			

V	Forgiveness and Gratitude : Forgiveness and Gratitude , Personal transformation and Role of suffering , Trust and Compassion	1	3
Instructional Hours			6
Suggested Learning Methods : Community Participation Program			
Total Hours			30
Text Books	<ol style="list-style-type: none"> 1. Argyle, M. 1987. <i>The psychology of happiness</i>. London: Methuen. 2. Carr, Alan (2007). <i>Positive Psychology: The science of human happiness and human strengths</i>. Routledge, Taylor and Francis Group-London. 3. Csikzentmihalyi, Mihaly (1990) <i>Flow: The Psychology of Optimal Experience</i>, Harper Perennial. 3. Garcia,Hector., & Mirrales. Francesc.(2017) <i>IKIGAI-The Japanese Secret to a Long and Happy Life</i>, Hutchinson London. 		
Reference Books	<ol style="list-style-type: none"> 1. Frankl, Viktor E. (1988). <i>The Will to Meaning: Foundations and Applications of Logotherapy</i>. Meridian/Plume 2. Frankl, Viktor E. (2000) <i>Man's Search for Ultimate Meaning</i>, Basic Books. 3. Snyder, C. R., & Lopez, S. J., & Pedrotti, J. T (2011) <i>Positive Psychology: The Scientific and Practical Explorations of Human Strengths</i>, Sage Publications India Pvt Ltd. 		
Course designed by		Verified by Chairman	
Ms. Merlin Jenefer		Dr. P. Nathiya	

Course Code	Title		
22U4VBOE15	Value Based Open Elective Course : Professional Ethics		
Semester: IV	Credits: 2	ESE: 50 Marks	
Course Objective	Students will understand the importance of Values and Ethics in their personal lives and Professional careers		
Course Category	Employability & Skill Development		
Development Needs	National & Global		
Course Description	Understanding the importance of maintaining Professional Ethics and build effective career.		
Course Outcomes		Teaching Methods	
CO 1	Understand the basic purpose of Profession	Lecture	
CO 2	Summarize the Professional Rights And Responsibilities	Lecture/ Peer Teaching	
CO 3	Apply the various Roles in Applying Ethical Principles at Various Professional Levels	Lecture/ Case Study	
CO 4	Professional Ethical Values and Contemporary Issues	Lecture/ Role Play	
CO 5	Excelling in Competitive and Challenging Environment to Contribute to Industrial Growth.	Lecture/ Group Discussion	
Course Content		Instructional Hours / Week : 2	
Unit	Description	Text Book	Chapters
I	Introduction to Professional Ethics: Meaning Definition Basic Concepts Governing Ethics, Personal & Professional Ethics, Life Skills, Emotional Intelligence Profession and professionalism, Professional Associations, Professional Risks, Professional Accountabilities, Professional Success, Ethics and Profession.	1	1&2
Instructional Hours			6
Suggested Learning Methods : Video lectures			
II	Basic Theories: Basic Ethical Principles, Moral Developments, Deontology Virtue Theory, Rights Theory, Casuist Theory, Moral Absolution, Moral Rationalism, Moral Pluralism Ethical Egoism, Feminist Consequentialism, Moral Issues, Moral Dilemmas, Moral Autonomy	1	5&6
Instructional Hours			6

Suggested Learning Methods : Mini Case Analysis			
III	Professional Practices: Professions and Norms of Professional Conduct, Norms of Professional Conduct vs. Profession Responsibilities, Obligations and Moral Values in Professional Ethics, Professional codes of ethics The Centrality of Responsibilities of Professional Ethics; lessons from 1979 American Airlines DC-10 Crash and Kansas City Hyatt Regency Walk away Collapse.	2	1&2
Instructional Hours			6
Suggested Learning Methods : Group Discussion			
IV	Ethics in changing domains of Research: The US government wide definition of research misconduct, research misconduct distinguished from mistakes and errors, recent history of attention to research misconduct The emerging emphasis on understanding and fostering responsible conduct, responsible authorship, reviewing & editing.	2	4&5
Instructional Hours			6
Suggested Learning Methods : Role Play			
V	Global issues in Professional Ethics: Introduction – Current Scenario, Technology Globalization of MNCs, International Trade, World Summits, Issues Business Ethics and Corporate Governance, Sustainable Development Ecosystem, Energy Concerns, Ozone Deflection, Pollution, Ethics in Manufacturing and Marketing Media Ethics; War Ethics; Bio Ethics, Intellectual Property Rights	2	6&7
Instructional Hours			6
Suggested Learning Methods : Group Discussion			
Total Hours			30
Text Books	1. Professional Ethics: R. Subramanian, Oxford University Press, 2015. 2. Ethics in Engineering Practice & Research, Caroline Whitbeck, 2e, Cambridge University Press, 2015		
Reference Books	1. Business Ethics concepts & Cases: Manuel G Velasquez, 6e, PHI, 2008		
Course designed by		Verified by	
Dr. R. A. Ayyapparajan		Dr. R. A. Ayyapparajan	

Course Code	Title		
22U4VBOE16	Value Based Open Elective Course : The Science of Happiness		
Semester: IV	Credits: 2	ESE: 50 Marks	
Course Objective	To explore the key elements of happiness at work and strategies to cultivate joy, well-being, and productivity in the workplace, relationship between happiness and various work-related factors, such as efficiency, creativity, innovation, work-life balance, and making a difference for others.		
Course Category	Skill Development		
Development Needs	Global		
Course Description	To create a positive work environment and promote happiness for themselves and others.		
Course Outcomes			Teaching Methods
CO 1	Understand the Happiness as a Scientific Construct		Lecture Method
CO 2	Apply the Theories and Models of Well-being		Flipped Teaching
CO 3	Demonstrate the Individual Factors and Happiness		Lecture Method
CO 4	Analyze the Social and Environmental Factors in Happiness		Lecture Method
CO 5	Apply Happiness and Work Efficiency		Flipped Teaching
Course Content		Instructional Hours / Week : 2	
Unit	Description	Text Book	Chapters
I	Introduction to Happiness as a Scientific Construct Defining happiness and its importance in individual and societal well-being, Overview of subjective well-being and its components - life satisfaction, positive emotions, and negative emotions, Exploration of cultural variations in happiness and its measurement	1	1
Instructional Hours			6
Suggested Learning Methods : Group Discussion			
II	Theories and Models of Well-being Prominent theories of well-being - hedonic well-being, eudemonic well-being, PERMA model. Role of factors - autonomy, meaning, and engagement in happiness. Strengths and limitations of different well-being models	1	2
Instructional Hours			6
Suggested Learning Methods : Group Discussion			
III	Individual Factors and Happiness Personality traits - optimism, resilience and their influence on happiness. Role of genetics and biological factors in determining happiness levels. Examination of personal values, goals, and self-esteem and their impact on subjective well-being	1	3
Instructional Hours			6

Suggested Learning Methods : Group Discussion			
IV	Social and Environmental Factors in Happiness Importance of social relationships and social support in promoting happiness. Influence of social comparison, social norms, and cultural factors on well-being. Impact of environmental factors - access to nature, quality of living conditions on happiness.	1	4
Instructional Hours			6
Suggested Learning Methods : Group Discussion			
V	Happiness and Work Efficiency Impact of happiness on work efficiency and productivity, strategies for managing daily hassles and reducing stress in the workplace, link between happiness and creativity in the workplace, Strategies for fostering a creative and innovative work environment	1	5
Instructional Hours			6
Suggested Learning Methods : Group Discussion			
Total Hours			30
Text Books	1. Susan A. David, Ilona Boniwell, and Amanda Conley Ayers; The Oxford Handbook of Happiness.		
Reference Books	1. Achor, S. (2010). The happiness advantage: The seven principles of positive psychology that fuel success and performance at work. Random House. 2. Lyubomirsky, S. (2008). The how of happiness: A scientific approach to getting the life you want. Penguin. 3. Diener, E., & Seligman, M. E. P. (2002). Very happy people. Psychological Science, 13(1), 81-84.		
Web. URLs	1. https://onlinecourses.nptel.ac.in/noc23_hs06/preview		
Course designed by		Verified by Chairman	
Dr. S. Balaji		Dr. K. Rajarajeswari	

Course Code	Title		
23U3DFC508	Core Paper XIII – Cloud Security		
Semester: V	Credits: 3	CIA: 20 Marks	ESE: 55 Marks
Course Objective	Understand the need of secure system in Cloud environment		
Course Category	Employability		
Development Needs	Global		
Course Description	This course helps the students to understand the different fundamental concept of cloud and its various applications. It also helps to understand the application of different security techniques in cloud.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Understand the Cloud fundamentals	Video Lecture	Assignment
CO 2	Understand the applications of cloud.	Flipped Classrooms	Group Discussion
CO 3	Understand and Apply various securities in cloud.	Group Discussion	Seminar
CO 4	Analysis various contagion and threshold models	Tutorial / Case Studies	Quiz
CO 5	Analysis of various virtualization securities.	Video Lecture	Seminar
Offered by	DCFS		
Course Content		Instructional Hours / Week : 5	
Unit	Description	Text Book	Chapters
I	WHAT IS CLOUD COMPUTING? - Cloud Computing Defined - The SPI Framework for Cloud Computing - The Traditional Software Model - The Cloud Services Delivery Model - Cloud Deployment Models - Key Drivers to Adopting the Cloud - The Impact of Cloud Computing on Users - Governance in the Cloud	1	2
Instructional Hours			15
Suggested Learning Methods : Video Lectures			
II	INFRASTRUCTURE SECURITY - Infrastructure Security: The Network Level - Infrastructure Security: The Host Level - Infrastructure Security: The Application Level DATA SECURITY AND STORAGE - Aspects of Data Security - Data Security Mitigation - Provider Data and Its Security	1	3, 4
Instructional Hours			15

Suggested Learning Methods :Group Discussion			
III	IDENTITY AND ACCESS MANAGEMENT - Trust Boundaries and IAM - Why IAM? - IAM Challenges - IAM Definitions - IAM Architecture and Practice - Getting Ready for the Cloud - Relevant IAM Standards and Protocols for Cloud Services - IAM Practices in the Cloud - Cloud Authorization Management	1	5
Instructional Hours			15
Suggested Learning Methods : Exploring the different IAM Standards and Protocols			
IV	SECURITY MANAGEMENT IN THE CLOUD - Security Management Standards - Security Management in the Cloud - Availability Management - SaaS Availability Management - PaaS Availability Management - IaaS Availability Management - Access Control - Security Vulnerability, Patch, and Configuration Management	2	6
Instructional Hours			15
Suggested Learning Methods : Case Study			
V	PRIVACY - What Is Privacy? - What Is the Data Life Cycle? - What Are the Key Privacy Concerns in the Cloud? - Who Is Responsible for Protecting Privacy? - Changes to Privacy Risk Management and Compliance in Relation to Cloud Computing - Legal and Regulatory Implications - U.S. Laws and Regulations - International Laws and Regulations EXAMPLES OF CLOUD SERVICE PROVIDERS - Amazon Web Services (IaaS) - Google (SaaS, PaaS) - Microsoft Azure Services Platform (PaaS) - Proofpoint (SaaS, IaaS) - RightScale (IaaS) - Salesforce.com (SaaS, PaaS) - Sun Open Cloud Platform - Workday (SaaS) - SECURITY-AS-A-[CLOUD] SERVICE	2	7, 9, 10
Instructional Hours			15
Suggested Learning Methods : Video Lecture			
Total Hours			75 Hrs
Text Books	1. Tim Mather, Subra Kumaraswamy, and Shahed Latif, “Cloud Security and Privacy”, O’Reilly Media, Inc., 2009		
Reference Books	1. Gautam Shroff, “Enterprise Cloud Computing Technology Architecture Applications”, Cambridge University Press; 1 edition [ISBN: 978- 0521137355], 2010. 2. Toby Velte, Anthony Velte, Robert Elsenpeter, “Cloud Computing, A Practical Approach”, Tata McGraw- Hill Osborne Media; 1 edition 22, [ISBN: 0071626948], 2009. 3. Tim Mather, Subra Kumaraswamy, Shahed Latif, “Cloud Security and Privacy: An Enterprise Perspective on Risks and Compliance”, O’Reilly Media; 1 edition, [ISBN: 0596802765], 2009. 4. Ronald L. Krutz, Russell Dean Vines, “Cloud Security”, Wiley [ISBN: 0470589876], , 2010.		

Web. URLs	https://www.ibm.com/topics/cloud-security												
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assignment					Seminar		Quiz		Total	
4	4	5	2					2		3		20	
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by								Verified by Chairman					
Dr. B. Karthikeyan								Dr. J. Maria Shyla					

Course Code	Title		
23U3DFC509	Core Paper XIV- Vulnerability Assessment and Penetration Testing		
Semester: V	Credits: 3	CIA: 20 Marks	ESE: 55 Marks
Course Objective	1. Understand Ethical Hacking terminologies. 2. Study about Network and Vulnerability Scanning 3. Apply Information gathering methodologies.		
Course Category	Entrepreneurship		
Development Needs	Global		
Course Description	This course helps to understand the ethical hacking and helps to apply the vulnerability scanning		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Understand the fundamentals of Penetration Testing	Flipped Classroom	Assignment
CO 2	Understand and apply the concept of Vulnerability Scanning	Video Lecture	Seminar
CO 3	Examine the different exploitation toolkits	Problem Solving	Assignment
CO 4	Gain knowledge on exploiting the network vulnerabilities	Tutorial/ Case Studies	Seminar
CO 5	Exploring the different Application Testing Tools	Interactive Teaching	Quiz
Offered by	DCFS		
Course Content	Instructional Hours / Week :5		
Unit	Description	Text Book	Chapters
I	Penetration Testing - What Is Penetration Testing? - Reasons for Penetration Testing - Planning and Scoping Penetration Tests - Scoping and Planning Engagements - Key Legal Concepts for Penetration Tests - Understanding Compliance-Based Assessments - Information Gathering - Footprinting and Enumeration - Active Reconnaissance and Enumeration - Information Gathering and Defenses	1	1, 2, 3
Instructional Hours			15
Suggested Learning Methods : Video Lectures			
II	Vulnerability Scanning - Identifying Vulnerability Management Requirements - Configuring and Executing Vulnerability Scans - Software Security Testing - Developing a Remediation Workflow - Overcoming Barriers to Vulnerability Scanning Analyzing Vulnerability Scans - Reviewing and Interpreting Scan Reports - Validating Scan Results - Common Vulnerabilities	1	4, 5
Instructional Hours			15
Suggested Learning Methods :Group Discussion			

III	Exploit and Pivot - Exploits and Attacks - Exploitation Toolkits - Exploit Specifics - Leveraging Exploits - Persistence and Evasion		6										
Instructional Hours			15										
Suggested Learning Methods : Worked examples													
IV	Exploiting Network Vulnerabilities - Conducting Network Exploits - Exploiting Windows Services - Exploiting Common Services - Wireless Exploits FTP Enumeration – SSH Enumeration – TELNET Enumeration – SMTP Enumeration – HTTP Enumeration – SAMBA Enumeration – JAVA – RMI Enumeration – BINDSHELL Enumeration – DISTCC Enumeration – VNC Enumeration – UNREALIRC Enumeration		7										
Instructional Hours			15										
Suggested Learning Methods : Problem Based Learning													
V	Exploiting Application Vulnerabilities - Exploiting Injection Vulnerabilities - Exploiting Authentication Vulnerabilities - Exploiting Authorization Vulnerabilities - Exploiting Web Application Vulnerabilities - Unsecure Coding Practices - Application Testing Tools CIA Triags, OWASP, SANS, WASC, OWASP Top 10		9										
Instructional Hours			15										
Suggested Learning Methods : Video Lecture													
Total Hours			75 Hrs										
Text Books		Mike Chapple, David Seidl, CompTIA® PenTest+ Study Guide, Cybek, 2019											
Reference Books		1.Sagar Rahalkar, Network Vulnerability Assessment Packet Publishing 2.Metasploit, The Penetration Tester’s Guide (1st Edition)											
Web. URLs		www.guru99.com/vulnerability-assessment-testing-analysis.html											
Tools for Assessment (20 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
4	4	5	2	2	3	20							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. T. Ramaprabha							Dr. J. Maria Shyla						

Course Code	Title		
23U3DFC510	Core Paper XV – Cryptography and Network Security		
Semester: V	Credits: 4	CIA:25 Marks	ESE:75 Marks
Course Objective	To introduce and explain various cryptographic algorithms		
Course Category	Employability		
Development Needs	Global		
Course Description	This course helps to understand about the security aspects and types of attacks		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Explain the various security aspects and its importance	Flipped Classroom	Assignment
CO 2	Outline the several types of security attacks and various cryptographic algorithms	Video Lecture	Group Discussion
CO 3	Summarize about message authentication and security practices.	Case Studies	Seminar
CO 4	Apply symmetric key and public key cryptographic algorithms to perform the process of cryptography.	Problem Solving	Quiz
CO 5	Analyze the various cryptographic algorithms and apply them accordingly	Video Lecture	Flip Test
Offered by	DCFS		
Course Content	Instructional Hours / Week : 6		
Unit	Description	Text Book	Chapters
I	INTRODUCTION: Security trends - Legal, Ethical and Professional Aspects of Security, Need for Security at Multiple levels, Security Policies - Model of network security – Security attacks, services and mechanisms – OSI security architecture – Classical encryption techniques: substitution techniques, transposition techniques, steganography- Foundations of modern cryptography: perfect security – information theory – product cryptosystem – cryptanalysis.		
Instructional Hours			18
Suggested Learning Methods : Video Lectures			
II	MATHEMATICS OF SYMMETRIC KEY CRYPTOGRAPHY: Algebraic structures – Modular arithmetic-Euclid's algorithm- Congruence and matrices - Groups, Rings, Fields- Finite fields- SYMMETRIC KEY CIPHERS: SDES – Block cipher Principles of DES – Strength of DES – Differential and linear cryptanalysis - Block cipher design principles – Block cipher mode of operation – Evaluation criteria for AES – Advanced Encryption Standard - RC4 –Key distribution.		

Instructional Hours						18
Suggested Learning Methods : Group Discussion						
III	MATHEMATICS OF ASYMMETRIC KEY CRYPTOGRAPHY: Primes – Primality Testing – Factorization – Euler’s totient function, Fermat’s and Euler’s Theorem - Chinese Remainder Theorem – Exponentiation and logarithm - ASYMMETRIC KEY CIPHERS: RSA cryptosystem – Key distribution – Key management – Diffie Hellman key exchange - ElGamal cryptosystem – Elliptic curve arithmetic-Elliptic curve cryptography.					
Instructional Hours						18
Suggested Learning Methods : Demonstrations						
IV	MESSAGE AUTHENTICATION AND INTEGRITY : Authentication requirement – Authentication function – MAC – Hash function – Security of hash function and MAC – SHA – Digital signature and authentication protocols – DSS- Entity Authentication: Biometrics, Passwords, Challenge Response protocols- Authentication applications - Kerberos, X.509					
Instructional Hours						18
Suggested Learning Methods : Case Study						
V	SECURITY PRACTICE AND SYSTEM SECURITY : Electronic Mail security – PGP, S/MIME – IP security – Web Security – SYSTEMSECURITY: Intruders – Malicious software – viruses – Firewalls.					
Instructional Hours						18
Suggested Learning Methods : Video Lecture						
Total Hours						90 Hrs
Text Books		1. William Stallings, Cryptography and Network Security: Principles and Practice, PHI 3rd Edition, 2006.				
Reference Books		1. C K Shyamala, N Harini and Dr. T R Padmanabhan: Cryptography and Network Security, Wiley India Pvt.Ltd 2. Behrouz A. Forouzan, Cryptography and Network Security, Tata McGraw Hill 2007. 3. Charlie Kaufman, Radia Perlman, and Mike Speciner, Network Security: PRIVATE Communication in a PUBLIC World, Prentice Hall, ISBN 0-13-046019-2				
Web. URLs		1 https://onlinecourses.swayam2.ac.in/aic20_sp06/preview 2 https://onlinecourses.swayam2.ac.in/arp19_ap79/preview				
Tools for Assessment (25 Marks)						
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total
5	5	6	3	3	3	25

Mapping													
CO \ PO	PO 1	PO 2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO 2	PSO 3	PSO 4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by								Verified by Chairman					
Ms. G. Bharathi								Dr. J. Maria Shyla					

Course Code		Title		
23U3DFP506		Core Paper XVI – Practical in Vulnerability Assessment and Penetration Testing		
Semester: V		Credits: 3	CIA: 30 Marks	ESE: 45 Marks
Course Objective		This course exploits of the technological ecosystem comprising of various hardware, software, network, OS and applications and identify suitable counter measures.		
Course Category		Skill Development		
Development Needs		Global		
Course Description		The course helps to understand the different vulnerability scanning and assessment methods		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	Understand the Network VAPT on FTP : 21, SSH : 22 and Telnet : 23	Demonstration Method	Laboratory Experiments	
CO 2	Understand the Network VAPT on SMTP : 25 and HTTP : 80			
CO 3	Understand the Network VAPT on Samba 139, 445 and Java-rmi : 1099			
CO 4	Understand the Web VAPT on OWASP Top 10			
CO 5	Evaluate Website mirroring.			
Offered by	DCFS			
Course Content			Instructional Hours / Week :4	
Programme	Description			
1	To implement the Network VAPT – FTP : 21			
2	To implement the Network VAPT – SSH : 22			
3	To implement the Network VAPT – TELNET : 23			
4	To implement the Network VAPT – SMTP : 25			
5	To implement the Network VAPT : HTTP : 80			
6	To implement the Network VAPT: Samba : 139, 445			
7	To implement the Network VAPT: Java – rmi : 1099			
8	To implement the Web VAPT a) A01: 2021 – Broken Access Control b) A02: 2021 – Cryptographic Failures			
9	To implement the Web VAPT – a) A03: 2021 – Broken Access Control			

	b) A04: 2021 – Cryptographic Failures												
10	To implement the Web VAPT a) A05: 2021 – Security Misconfiguration b) A06: 2021 – Vulnerable and Outdated Components												
11	To implement the Web VAPT a) A07: 2021 – Identification and Authentication Failures b) A08: 2021 – Software and Data Integrity Failures												
12	To implement the Web VAPT a) A09: 2021 - Security Logging and Monitoring Failures b) A10 : 2021 – Server Side Request Forgery												
Instructional Hours												60	
Tools for Assessment (30 Marks)													
Application of Logic	Program Creativity	Program Debugging	Test 1	Test 2	Observation Note Book	Total							
4	4	4	7	7	4	30							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. T. Ramaprabha							Dr. J. Maria Shyla						

Code		Title		
23U3DFE501		Discipline Specific Elective Paper I: Mobile and Network Forensics		
Semester: V		Credits: 4	CIA: 25 marks	ESE: 75 Marks
Course Objective		To introduce the concepts of mobile and network forensics		
Course Category		Employability		
Development Needs		Global		
Course Description		This course explains the various mobile technologies and mobile eco system security		
Course Outcomes:		Teaching method		Assessment method
CO 1	Explain about the various mobile technologies	Lecture/Demonstration		Assignment
CO 2	Illustrate the concepts of mobile eco system security	Lecture/ Case studies		Case studies
CO 3	Apply the various techniques of mobile forensics to solve problems	Lecture/Demonstration		Seminar
CO 4	Organize various operations like mobile tracking and analyzing of mobile data	Lecture/Video lecture		Quiz
CO 5	Appraise the various forensic tools and techniques	Lecture/Demonstration		Assignment
Offered by		DCFS		
Course Content			Instructional Hours / Week :6	
Unit	Description	Text Book	Chapters	
I	Introduction to Mobile Technologies Asynchronous Transfer Mode (ATM), Wireless Application Protocol (WAP). Cellular technologies including Advanced Mobile Phone System (AMPS), Imode, Time Division Multiple Access (TDMA), Code Division Multiple Access (CDMA) and Global System for Mobile Communications (GSM) including features and relative strengths. Functions of Subscriber Identity Module (SIM), International Mobile Equipment Identity (IMEI), Bluetooth and Mobile Payment Gateways. Understanding of the mobile phone operating systems – Android, iOS, Windows. Basics of Rooting Jailbreaking.			
			Instructional Hours	18 Hrs
Suggested Learning Methods: Library extra reading				
II	Introduction to Mobile Eco-System Security Mobile Security Model, Enterprise Mobile Environment, Mobile Crypto Algorithm. Mobile phones including SIM cloning and other Bluetooth vulnerabilities. Attacks - Denial of Service (DOS), Packet Spoofing & Masquerading, Eavesdropping etc. Wireless Public Key Infrastructure. Securing WLAN, WEP Decryption script, Understanding of SQLite Databases. Voice, SMS and Identification Data Interception in GSM. SMS security issues – Availability,			

	Confidentiality and Integrity issues.		
Instructional Hours			18 Hrs
Suggested Learning Methods: Video lectures			
III	Introduction to Mobile Forensics Mobile Forensic, Types of Evidence present in mobile phones - Files present in SIM card, phone memory dump, and evidences in memory card. Seizure and Preservation of mobile phones and PDA. Mobile phone evidence extraction process, Data Acquisition Methods – Physical, Logical and File System\Manual Acquisition. Good Forensic Practices, Mobile Forensic Investigation Toolkit.		
Instructional Hours			18 hrs
Suggested Learning Methods: Hands on training			
IV	Tracking Tracking of mobile phone location. Analysis of mobile data like SMS, call logs, contacts, media files, recordings and important mobile application data (IM Chats like whatsapp, telegram, iMessage, Email clients, Calendar, Reminder and Note apps). Challenges to Mobile forensics. CDR and IPDR analysis.		
Instructional Hours			18 Hrs
Suggested Learning Methods: Laboratory practice			
V	Introduction to Network Forensics Monitoring of computer network and activities, Live Packet Capturing and Analysis. Searching and collection of evidences from the network. Network Intrusion Detection and Analysis. Event Log Aggregation – role of logs in forensic analysis, tools and techniques. Investigating network attacks. Evidence collection from Routers & CCTV DVRs. Forensic analysis of online browsing activity and related artifacts.		
Instructional Hours			18 Hours
Suggested Learning Methods: Online training			
Total Hours			90 Hrs
Text Books	<ol style="list-style-type: none"> 1. William Stallings; "Network Security Essentials", 3rd Edition, Pearson Education, 2006. 2. AtulKahate; "Cryptography and Network Security" McGraw Hill Education (India), 2008 3. Beherouz. A Forouzan; "Data Communication and Networking", 4th Edition, TMH, 2000. 4. Sherri Davidoff and Jonathan Ham; "Network Forensics – Tracking Hackers through Cyberspace", Pearson Publications, 2012. 5 Samir Datt; "Learning Network Forensics – Identify and Safeguard your Networks against both Internal and External Threats, hackers and malware attacks", PACKT Publishing, 2016 6. John R. Vacca; "Network and Systems Security", Syngress Publications. 		
Reference Books	<ol style="list-style-type: none"> 1 Satish Bommisetty, RohitTamma and Heather Mahalik, "Practical Mobile Forensics – Dive into mobile Forensics on iOS, Android, Windows and Blackberry Devices with action-packed, practical guide", PACKT Publishing, 2015. 2 Iosif I. Androulidakis, "Mobile Phone Security and Forensics – A Practical 		

	Approach”, Springer New York Heidelberg, 2012. 3 Jonathan Zdziarski, “iOS Forensic Investigative Methods”, 2012.												
Web link	1 https://onlinecourses.swayam2.ac.in/aic20_sp06/pre view 2 https://onlinecourses.swayam2.ac.in/arp19_ap79/preview												
Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
5	5	6	3	3	3	25							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
Course designed by							Verified by Chairman						
Ms. G. Bharathi							Dr. J. Maria Shyla						

Course Code		Title		
23U3DFE502		Discipline Specific Elective I - Malware Analysis and Cyber threat		
Semester: V		Credits: 4	CIA:25 Marks	ESE:75 Marks
Course Objective				
		To gain knowledge in malware analysis and cyber threat		
Course Category				
		Employability		
Development Needs				
		Global		
Course Description				
		This course helps to understand about the working culture of malwares		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	To Know about the computer virology	Flipped Classroom	Assignment	
CO 2	To understand about the working culture of malwares	Video Lecture	Group Discussion	
CO 3	To understand about the virus design	Problem Solving	Seminar	
CO 4	To understand about the malware design	Tutorial/ Case Studies	Quiz	
CO 5	To understand about the virus and worm analysis	Video Lecture	Flip Test	
Offered by		DCFS		
Course Content		Instructional Hours / Week : 6		
Unit	Description	Text Book	Chapters	
I	INTRODUCTION: Computer Infection Program- Life cycle of malware- Virus nomenclature- Worm nomenclature- Tools used in computer virology.	1	1	
			Instructional Hours	
			18	
Suggested Learning Methods : Video Lectures				
II	IMPLEMENTATION OF COVERT CHANNEL :Non self-reproducing Malware-Working principle of Trojan Horse-Implementation of Remote access and file transfer- Working principle of Logical Bomb- Case Study: Conflicker C worm.	1	2	
			Instructional Hours	
			18	
Suggested Learning Methods :Group Discussion				
III	VIRUS DESIGN AND ITS IMPLICATIONS :Virus components- Function of replicator, concealer and dispatcher- Trigger -Mechanisms- Testing virus codes-Case Study: Brute force logical bomb.			
			Instructional Hours	
			18	
Suggested Learning Methods : Demonstrations of Virus Design				

IV	MALWARE DESIGN USING OPEN SOURCE :Computer Virus in Interpreted programming language- Designing Shell bash virus - under Linux- Fighting over infection- Anti – antiviral fighting – Polymorphism- Case study: Companion virus.						2	5,6					
Instructional Hours							18						
Suggested Learning Methods : Case Study on malware design using open source													
V	VIRUS AND WORM ANALYSYS :Klez Virus- Clone Virus- Doom Virus- Black wolf worm- Sassar worm- Happy worm 99.						2	7,8					
Instructional Hours							18						
Suggested Learning Methods : Video Lecture													
Total Hours							90 Hrs						
Text Books		1.ErciFiliol, “Computer Viruses: from theory to applications”, Springer, 1st edition, ISBN 10: 2-287-23939-1, 2005. 2.Mark.A .Ludwig, “The Giant black book of computer viruses, Create Space Independent Publishing Platform, 2 nd edition, ISBN 10: 144140712X, 2009											
Reference Books		1.Monnappa K A by Learning Malware Analysis: Explore the concepts, tools, and techniques to analyze and investigate Windows malware. 2.Jessey Bullock ,Wireshark for Security Professionals: Using Wireshark and the Metasploit Framework 1st Edition											
Web. URLs		www.geekforgeeks.com											
Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
5	5	6	3	3	3	25							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. P. Jeyanthi							Dr. D. Suryaprabha						

Course Code		Title		
23U3DFE503		Discipline Specific Elective Paper I: System Administration		
Semester: V		Credits: 4	CIA : 25 Marks	ESE:75 Marks
Course Objective		To enable the students to understand the various aspects of System Administration in the local and global scenario.		
Course Category		Employability		
Development Needs		Global		
Course Description		The various methods and techniques available for effective system administration are discussed.		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	Understand the basics of Information Security	Smart Board	Assignment	
CO 2	Identify the legal, ethical and professional issues in Information Security	Video Lessons	Seminar	
CO 3	Survey the standards available	Smart Board	Seminar	
CO 4	Assess the technologies essential to provide Information Security	Case study Assignments	Group Discussion	
CO 5	Analyze hacking threats and attacks and determine appropriate methods to combat them	Flipped Classroom	Assignment	
Offered by		DCFS		
Course Content			Instructional Hours / Week : 6	
Unit	Description	Text Book	Chapters	
I	System Components: The System: Handling hardware – Operating systems – File systems – Processes and Job Control – Networks – IPV4 networks – Address space in IPv4 – Ipv6 networks – Networked Communities: Clients, servers and delegation – Host identities and name services – Common network sharing models – Local network orientation and analysis	1	1	
Instructional Hours			18	
Report Presentation				
II	Host Management: Global view, local action – Physical considerations of server room – Computer startup and shutdown – Configuring and personalizing workstations – Installing a Unix Disk – Installation of the operating system – Software installation - User management: Issues – User Registration – Account policy – Login Environment – User Support Services – Controlling user Resources – Online user Services – User well-being – Ethical conduct of administrators and users – Computer usage policy	1	2, 3	
Instructional Hours			18	
Report Presentation				
III	Models of network and system administration – Information models and directory services – System infrastructure organization – Network Administration models – Network Management Technologies –	1	4	

	Creating infrastructure – System Maintenance models – Competition, immunity and convergence – Policy and Configuration automation – integrating multiple Oss – Configuration and Maintenance: System Configuration policy – Methods: Controlling Causes and Symptoms – Change Management – Policy Configuration and its ethical usage – Human Computer job scheduling – Automation of host configuration – SNMP Tools – Database Configuration management												
Instructional Hours			18										
Group Discussion													
IV	Diagnostic, fault and change management: Fault tolerance and propagation – Networks and small worlds – Casualty and dependency – Defining the system – Faults – Cause trees – Probabilistic fault trees – Change management revisited – Game-theoretical strategy selection – monitoring – System performance tuning – Principles of quality assurance	1	5										
Instructional Hours			18										
Group Discussion													
V	Security Implementation: System Design and normalization – The recovery plan – Data integrity and protection – Authentication methods – Analyzing network security – VPNs: secure shell and FreeS/WAN – Role-based security and capabilities – WWW security – IPSec –secure IP – Ordered access control and policy conflicts – IP filtering for firewalls – Firewalls – Intrusion Detection and Forensics – Compromised machines	1	10, 12										
Instructional Hours			18										
Video Presentation													
Total Hours			90										
Text Books	Mark Burgess, Principles of Network and System Administration, Second Edition, Wiley India Pvt., Ltd., 2008												
Reference Books	System Administration, Aeleen Frisch, 2002												
Web. URLs	www.wikiversity.com												
Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
5	5	6	3	3	3	25							
Mapping													
CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	M	M	H	H	H	H	M	M	M	M	M
CO2	M	M	H	M	H	M	M	M	M	H	M	M	H
CO3	H	H	M	H	M	M	L	H	L	M	H	M	M
CO4	H	H	L	M	H	M	H	M	H	H	M	H	M
CO5	H	M	M	H	M	H	L	H	H	M	M	M	M
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. B. Karthikeyan							Dr. J. Maria Shyla						

Course Code		Title		
23U3DFE504		Discipline Specific Elective Paper I: Cloud Infrastructure and Services		
Semester: VI		Credits: 4	CIA: 25 Marks	ESE: 75 Marks
Course Objective				
		This course helps to understand the concepts and various models of cloud computing		
Course Category				
		Entrepreneurship		
Development Needs				
		Global		
Course Description				
		The course presents a top down view of cloud computing, from applications and administration to programming, infrastructure, billing and security.		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	Explain the core concepts of the cloud computing paradigm: how and why this paradigm shift came about, the characteristics, advantages and challenges brought about by the various models and services in cloud computing	Flipped Classroom	Group Discussion	
CO 2	Discuss system virtualization and outline its role in enabling the cloud computing system model.	Video Lecture	Assignment	
CO 3	Undertand various cloud programming models and apply them to solve problems on the cloud.	Problem Solving	Seminar	
CO 4	Analyse various management and other distinguish services of AWS.	Tutorial/ Case Studies	Quiz	
CO 5	Deploy applications over commercial cloud computing infrastructures such as Amazon	Virtual Lab	Flip Test	
Offered by		DCFS		
Course Content		Instructional Hours / Week : 6		
Unit	Description	Text Book	Chapters	
I	Cloud Computing definition, private, public and hybrid cloud. Cloud types; IaaS, PaaS, SaaS. Benefits and challenges of cloud computing, public vs private clouds, role of virtualization in enabling the cloud; Business Agility: Benefits and challenges to Cloud architecture. Application availability, performance, security and disaster recovery; next generation Cloud Applications.	1	1	
Instructional Hours			18	
Suggested Learning Methods : Video Lectures				
II	Exploring virtualization, Load balancing, Hypervisors, Machine imaging, Cloud marketplace overview, Comparison of Cloud providers.	1	2	
Instructional Hours			18	
Suggested Learning Methods :Group Discussion				

III	Reliability, availability and security of services deployed from the cloud. Performance and scalability of services, tools and technologies used to manage cloud services deployment; Cloud Economics: Cloud Computing infrastructures available for implementing cloud based services.												
Instructional Hours				18									
Suggested Learning Methods : Video Lectures													
IV	AWS history, AWS Infrastructure, AWS services, AWS ecosystem.		1										
Instructional Hours				18									
Suggested Learning Methods : Demonstration													
V	Service creation environments to develop cloud based applications. Development environments for service development; Amazon, Azure, Google App.		1										
Instructional Hours				18									
Suggested Learning Methods : Video Lectures													
Total Hours				90 Hrs									
Text Books	1.Ray J. Rafaels , "Cloud Computing: From Beginning to End", April 2015. 2.Gautam Shroff, "Enterprise Cloud Computing Technology Architecture Applications", Cambridge University Press; 1 edition,[ISBN: 978-0521137355], 2010.												
Reference Books	1.Amazon Web Services For Dummies. Bernard Golden. For Dummies. 2.Rajkumar Buyya, Cloud Computing: Principles and Paradigms, John Wiley & Sons, First Edition 3.Amazon Security overview whitepaper- https://aws.amazon.com/whitepapers												
Web. URLs	https://aws.amazon.com/whitepapers												
Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
5	5	6	3	3	3	25							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. T. Ramaprabha							Dr. J. Maria Shyla						

Course Code	Title	
23U3DFV511	In-plant Training	
Semester: V	Credits: 2	ESE:50 Marks
Objective:		
To give optimum exposure on the practical side of industrial society		
Guidelines:		
<ol style="list-style-type: none"> 1. Duration of the internship training is 20 days during the summer vacation which falls at the end of the 4th semester. 2. The departments concerned will prepare on exhaustive panel of institutions, industries and practitioners. 3. The individual student has to identify the institution / industry / practitioners of their choice and inform the same to the HOD / staff-in-charge. 4. The students hereafter will be called as trainees should maintain a work diary in which the daily work done should be entered and the same should be attested by the section in-charge. 5. The departments should prepare an outline of the job to be done, sections in which they have to be attached both in the office as well as in the field. 6. The trainees should strictly adhere to the rules and regulations and office timings of the institutions to which they are attached. 7. The trainees have to obtain a certificate on successful completion of the internship from the chief executive of the organization. 8. Monitoring and inspection by staff on a regular basis. 9. Report writing manual and format should be prepared by the respective departments. 10. All model forms are to be attached wherever it is necessary. 11. Report evaluation: Internal viva-voce examination will be conducted and the maximum mark awarded is 50. 12. In-Plant Training has to be carried out only in the approved industries by the department/College 13. Report should be submitted in the 5th semester at end of the September 		
Course designed by		Verified by Chairman
Dr. T. Ramaprabha		Dr. J. Maria Shyla

Course Code		Title		
23U4DFZ503		Skill Based Paper – III Practical in Cryptography and Network Security		
Semester: V		Credits: 3	CIA: 30 Marks	ESE: 45 Marks
Course Objective		To introduce the concepts of Procedure Oriented Programming and the various programming constructs of C programming		
Course Category		Skill Development		
Development Needs		Global		
Course Description		To have a knowledge on using different cloud computing applications		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	Relate encryption, decryption using the substitution techniques	Demonstration Method	Laboratory Experiments	
CO 2	Develop DES algorithms for various practical applications			
CO 3	Examine AES algorithms for various practical applications			
CO 4	Apply RSA algorithms			
CO 5	Apply Diffie- Hellman algorithms			
Offered by	DCFS			
Course Content			Instructional Hours / Week :4	
Programme	Description			
1	Perform encryption, decryption using the Ceaser cipher substitution techniques			
2	Perform encryption, decryption using the playfair cipher substitution techniques			
3	Perform encryption, decryption using the Hill Cipher substitution techniques			
4	Perform encryption, decryption using the Vigenere cipher substitution techniques			
5	Perform encryption and decryption using Rail fence transposition techniques			
6	Perform encryption and decryption using row & Column Transformation transposition techniques			
7	Apply DES algorithm for practical applications.			
8	Apply AES algorithm for practical applications.			
9	Implement RSA Algorithm using HTML and JavaScript			
10	Implement the Diffie-Hellman Key Exchange algorithm for a given problem.			
			Instructional Hours	60

References: 1. William Stallings, Cryptography and Network Security: Principles and Practice, PHI3rd Edition, 2006.

Tools for Assessment (30 Marks)

Application of Logic	Program Creativity	Program Debugging	Test 1	Test 2	Observation Note Book	Total
4	4	4	7	7	4	30

Mapping

CO \ PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H

H-High; M-Medium; L-Low

Course designed by	Verified by Chairman
Mr. T. Maria Mahajan	Dr. J. Maria Shyla

Course Code	Title		
23U3DFC611	Core Paper XVII: Ethical Hacking		
Semester: VI	Credits: 4	CIA: 25 Marks	ESE: 75 Marks
Course Objective	To help students understand how ethical hacking is used as a method to prevent hacking. To make it possible for students to learn the process of identifying vulnerabilities and exploits of the technological ecosystem		
Course Category	Entrepreneurship		
Development Needs	Global		
Course Description	This course helps to facilitate students, appreciate the need for understanding non-technology aspects of ethical hacking such as legal frameworks, documentation and report writing.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	To know about the basics of Ethical Hacking, Ethics, and Legality	Flipped Classroom	Group Discussion
CO 2	To understand the concept of Footprinting and Social Engineering	Video Lecture	Assignment
CO 3	To examine the different scanning and enumeration techniques	Problem Solving	Seminar
CO 4	To familiarize with the methodologies that can be used for system Hacking.	Tutorial/ Case Studies	Quiz
CO 5	To explore the Hacking Web Servers, Web Application Vulnerabilities, and Web-Based Password Cracking Techniques	Virtual Lab	Flip Test
Offered by	DCFS		
Course Content		Instructional Hours / Week : 6	
Unit	Description	Text Book	Chapters
I	Introduction to Ethical Hacking, Ethics, and Legality - Understanding Ethical Hacking Terminology - Identifying Different Types of Hacking Technologies - Understanding the Different Phases Involved in Ethical Hacking and Listing the Five Stages of Ethical Hacking - What Is Hacktivism? - Listing Different Types of Hacker Classes - Defining the Skills Required to Become an Ethical Hacker - What Is Vulnerability Research? - Describing the Ways to Conduct Ethical Hacking	1	1
Instructional Hours			18
Suggested Learning Methods : Video Lectures			

II	Footprinting and Social Engineering – Footprinting - Describe the Information Gathering Methodology - Describe Competitive Intelligence - Understand DNS Enumeration - Understand Whois and ARIN Lookups - Identify Different Types of DNS Records - Understand How Traceroute Is Used in Footprinting - Understand How E-Mail Tracking Works- Understand How Web Spiders Work	1	2
	Social Engineering - What Is Social Engineering? - What Are the Common Types Of Attacks? - Understand Identity Theft - Describe Phishing Attacks - Understand Online Scams - Understand URL Obfuscation - Social-Engineering Countermeasures	1	2
Instructional Hours			18
Suggested Learning Methods : Group Discussion			
III	Scanning and Enumeration – Scanning - Define the Terms Port Scanning, Network Scanning, and Vulnerability Scanning - Understand the CEH Scanning Methodology - Understand Ping Sweep Techniques - Understand Nmap Command Switches - Understand SYN, Stealth, XMAS, NULL, IDLE, and FIN Scan - List TCP Communication Flag Types - Understand War- Dialing Techniques - Understand Banner Grabbing and OS Fingerprinting Techniques - Understand How Proxy Servers Are Used in Launching an Attack - How Do Anonymizers Work? - Understand HTTP Tunneling Techniques - Understand IP Spoofing Techniques Enumeration - What Is Enumeration? - What Is Meant by Null Sessions? - What Is SNMP Enumeration? - Windows 2000 DNS Zone Transfer - What Are the Steps Involved in Performing Enumeration?	1	3
Instructional Hours			18
Suggested Learning Methods : Worked examples			
IV	System Hacking - Understanding Password-Cracking Techniques - Understanding Different Types of Passwords - Understanding Keyloggers and Other Spyware Technologies - Understand Escalating Privileges - Understanding Rootkits - Understanding How to Hide Files - Understanding Steganography Technologies - Understanding How to Cover Your Tracks and Erase Evidence Trojans, Backdoors, Viruses, and Worms - Trojans and Backdoors – What is Trojan - List the Different Types of Trojans - Trojan Construction Kit and Trojan Makers - What Are the Countermeasure Techniques in Preventing Trojans? - Viruses and Worms - Understand the Difference between a Virus and a Worm - Understand the Types of Viruses - Understand Antivirus Evasion Techniques - Understand Virus Detection Methods	1	4, 5
Instructional Hours			18
Suggested Learning Methods : Problem Based Learning			

V	Wireless Hacking - Overview of WEP, WPA Authentication Mechanisms, and Cracking Techniques - Overview of Wireless Sniffers and Locating SSIDs, MAC Spoofing - Understand Rogue Access Points - Understand Wireless Hacking Techniques - Describe the Methods Used to Secure Wire less Networks Evading IDSs, Honeypots, and Firewalls - List the Types of Intrusion Detection Systems and Evasion Techniques - List the Firewall Types and Honeypot Evasion Techniques Cryptography - Overview of Cryptography and Encryption Techniques - Describe How Public and Private Keys Are Generated - Overview of the MD5, SHA, RC4, RC5, and Blowfish Algorithms						1	10, 13, 14					
	Instructional Hours							18					
Suggested Learning Methods : Video Lectures													
Total Hours							90 Hrs						
Text Books	1. Kimberly Graves, CEH™ Official Certified Ethical Hacker Review, Wiley Publishing, Inc., 2007												
Reference Books	1. Patrick Engebretson,—The Basics of Hacking and Penetration Testing : Ethical Hacking and Penetration Testing Made Easy, Syngress Media, Second Revised Edition, 2013. 2. Michael T. Simpson, Kent Backman, James E. Corley,— Hands On Ethical Hacking and Network Defense, Cengage Learning, 2012.												
Web. URLs	www.simplilearn.com												
Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Assignment	Se mi nar	Quiz	Total							
5	5	6	3	3	3	25							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. P. Jeyanthi							Dr. J. Maia Shyla						

Course Code		Title		
23U4DFZ604		Skill Based Paper IV – Practical in Ethical Hacking		
Semester: V		Credits: 3	CIA: 30 Marks	ESE: 45 Marks
Course Objective		This course exploits of the technological ecosystem comprising of various hardware, software, network, OS and applications and identify suitable counter measures.		
Course Category		Skill Development		
Development Needs		Global		
Course Description		The course helps to implement the importance of ethical hacking in achieving the goals of information security.		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	Implement the importance of ethical hacking in achieving the goals of information security.	Demonstration Method	Laboratory Experiments	
CO 2	Differentiate the processes of vulnerability assessment and ethical hacking from penetration testing.			
CO 3	Comprehend the importance of appropriate countermeasures for managing vulnerabilities.			
CO 4	Justify the need for meticulous documentation in writing reports for consumption of both technical and management audiences.			
CO 5	Articulate the rationale for having an adequate legal framework for dealing with hacking and ethical hacking.			
Offered by		DCFS		
Course Content			Instructional Hours / Week :6	
Programme	Description			
1	Perform network scan to revile active hosts, open ports and services running			
2	Perform privilege escalation attack on Client operating system and gain control of a Client operatingsystem and write a short note on its mitigation strategy			
3	Demonstrate ARP Poisoning and detect ARP Poisoning in switch-based network			
4	Perform man-in-the-middle attack and hijack an established session of a user. Write a report on the same with mitigation strategy			
5	Crack FTP credentials using dictionary attack and write a report of possible suggestion on hardeningthe login services			
6	Perform user system surveillance and write a mitigation report on the same			

7	Exploiting NetBIOS vulnerability and password revelation from browsers and social networking application using Key Logger and Trojan													
8	Perform denial service attack on a server operating system and write a report on the same with mitigation strategy													
Instructional Hours												90		
Tools for Assessment (30 Marks)														
Application of Logic	Program Creativity	Program Debugging	Test 1	Test 2	Observation Note Book									Total
4	4	4	7	7	4									30
Mapping														
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L	
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H	
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M	
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L	
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H	
H-High; M-Medium; L-Low														
Course designed by								Verified by Chairman						
Dr. P. Jeyanthi								Dr. J. Maria Shyla						

Course Code	Title		
23U3DFE605	Discipline Specific Elective Paper II : Web Application Security		
Semester: VI	Credits: 4	CIA: 25 Marks	ESE: 75 Marks
Course Objective	To Understand and apply securities in web application		
Course Category	Employability		
Development Needs	Global		
Course Description	The course helps to understand the different web application security techniques.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	To understand the basics of top ten list of OWASP	Flipped Classroom	Group Discussion
CO 2	To know about the fundamentals of authentication and its access control	Video Lecture	Assignment
CO 3	To know about Authorization and its access control techniques	Problem Solving	Seminar
CO 4	To analyze the browser security principles	Tutorial/ Case Studies	Quiz
CO 5	To examine the data base security principles and file security principles	Video Lecture	Flip Test
Offered by	DCFS		
Course Content	Instructional Hours / Week : 6		
Unit	Description	Text Book	Chapters
I	Welcome to the Wide World of Web Application Security - Network Security Vs Application Security - The OWASP Top Ten List – Security Fundamentals – Input Validation – Attack Surface Reduction – Classifying and Prioritizing Threats	1	1, 2
Instructional Hours			18
Suggested Learning Methods : Video Lectures			
II	Authentication – Access Control Overview – Authentication Fundamentals – Two-Factor and Three Factor Authentication – Web Application Authentication – Securing Password-Based Authentication – Secure Authentication Best Practices	1	3
Instructional Hours			18
Suggested Learning Methods : Group Discussion			
III	Authorization – Access Control Continued – Session Management Fundamentals – Securing Web Application Session Management	1	4
Instructional Hours			18
Suggested Learning Methods : Worked examples			

IV	Browser Security Principles: The Same-Origin Policy – Defining the Same-Origin Policy – Exception to the Same-Origin Policy – Browser Security Principles: Cross-Site Scripting and Cross-Site Request Forgery – Cross-Site Scripting – Cross-Site Request Forgery		1	5, 6									
Instructional Hours				18									
Suggested Learning Methods : Problem Based Learning													
V	Database Security Principles – SQL Injection – Setting Database Permissions – Stored Procedure Security – Insecure Direct Object References File Security Principles – Keeping the Source Code Secret – Security Through Obscurity – Forceful Browsing – Directory Traversal		1	7, 8									
Instructional Hours				18									
Suggested Learning Methods : Video Lectures													
Total Hours				90 Hrs									
Text Books	1. Bryan Sullivan, Vincent Liu, Web Application Security, A Beginner's Guide, McGraw-Hill Osborne Media., 2011												
Reference Books	Andrew Hoffman, Web Application Security: Exploitation and Countermeasures for Modern Web Applications, O'Reilly Media, 2011												
Web. URLs	www.simplilearn.com												
Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
5	5	6	3	3	3	25							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. B. Karthikeyan							Dr. J. Maria Shyla						

Course Code	Title		
23U3DFE606	Discipline Specific Elective Paper II: Information Technology for Management		
Semester: VI	Credits: 4	CIA: 25 Marks	ESE: 75 Marks
Course Objective	To introduce the concepts of Management in Information Technology		
Course Category	Employability		
Development Needs	Global		
Course Description	This course helps to understand the different Information Technology Ma		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Interpret and Understand the Information Technology for Organization	Flipped Classroom	Group Discussion
CO 2	Analyse the impact of IT on the Organization	Video Lecture	Assignment
CO 3	Outline the concepts of Building systems with creativity	Problem Solving	Seminar
CO 4	Examine the reengineering concept.	Tutorial/ Case Studies	Quiz
CO 5	Classify the compare the various types of privacy laws	Tutorial/ Case Studies	Flip Test
Offered by	DCFS		
Course Content	Instructional Hours / Week : 6		
Unit	Description	Text Book	Chapters
I	Using Technology to Transform the Organization: Information Technology in the Workplace – What is Information Technology – Transforming Organizations – Information Technology and the Manager – The Challenge of Change – Six Major Trends – Interpreting and Understanding Information: The Nature of Information – How people Interpret Information – From Information to Knowledge – Information Technology in Perspective: Frameworks for Information Technology – A Framework Based on IT – The Basics of Information Systems – The Case of Chrysler	1	1,2
Instructional Hours			18
Suggested Learning Methods : Video Lectures			
II	The Impact of Information Technology on the Organization: Modern Organizations – Creating New Types of Organizations – Building a T-Form Organization – Strategic Issues of Information Technology – Information Technology and Corporate Strategy – Creating and Sustaining a Competitive Edge – Integrating Technology with the Business Environment – Managing Information Technology – International Business and Information Technology – The Impact of Globalization on Business – Key Issues in International Environment – Managing Information Technology Internationally – Business Models and IT Management	1	3,4
Instructional Hours			18
Suggested Learning Methods :Group Discussion			

III	Building Systems: Creativity with Technology: The Design Task – A Systems Design Life Cycle – The Roles of Managers, Users and Designers – User-Oriented Design – The Spiral Model of Development – Data Collection for Analysis and Design – Structured versus Object-Oriented Design – Building Systems: Further Developments: System Analysis – Survey and Feasibility Study – Determining Feasibility – Selecting an Alternative Undertaking System Analysis – Undertaking System Designs – General Design Considerations – Computer-Aided Software Engineering		5,7										
Instructional Hours			18										
Suggested Learning Methods : Worked examples													
IV	Reengineering: Changing Businesses and Business Processes: What is Reengineering? – What is a Process? – Reengineering a Process at Mutual Benefit Life – Reengineering a Process at Merrill Lynch – Reengineering the Entire Firm at Oticon – Implementing Change: Implementation – Research on Implementation – An Implementation Strategy – Implementing IT-Based Transformation of the Organization – Beyond Structural Change		8										
Instructional Hours			18										
Suggested Learning Methods : Problem Based Learning													
V	Organization Support Systems: Decision-Support Systems – Examples of DSSs – The Promise of DSSs – Executive Information Systems – Group Decision-Support Systems – Groupware and Organizational Knowledge – Multimedia for Business, Education and Entertainment		9, 10										
Instructional Hours			18										
Suggested Learning Methods : Problem Based Learning													
Total Hours			90 Hrs										
Text Books	1. Henry C. Lucas, Jr. Information Technology for Management, 7 th Edition, Tata Mc Graw Hill 2001												
Reference Books	Earl, Michael J. Management strategies for information technology. Prentice-Hall, Inc., 1989.												
Web. URLs	www.techtarget.com												
Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
5	5	6	3	3	3	25							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by						
Dr. D. Suryaprabha							Dr. J. Maria Shyla						

Course Code	Title		
23U3DFE607	Discipline Specific Elective Paper II: Intellectual Property Rights and Privacy Laws		
Semester: VI	Credits: 4	CIA: 25 Marks	ESE: 75 Marks
Course Objective	To introduce the concepts of Intellectual Property rights and privacy laws		
Course Category	Entrepreneurship		
Development Needs	Global		
Course Description	This course helps to understand the different IPR, Copyright and Privacy laws.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Define that various laws associated with intellectual property rights	Flipped Classroom	Group Discussion
CO 2	Explain the concept of commercialization of IPR by licensing	Video Lecture	Assignment
CO 3	Outline the concepts of copyrights and international protection of copyrights	Problem Solving	Seminar
CO 4	Recall the history and perspective of privacy laws.	Tutorial/ Case Studies	Quiz
CO 5	Classify and compare the various types of privacy laws	Virtual Lab	Flip Test
Offered by	DCFS		
Course Content	Instructional Hours / Week : 6		
Unit	Description	Text Book	Chapters
I	Intellectual Property Overview - Concept of Property vis-à-vis Intellectual Property. Types of Intellectual Property- Origin and Development- An Overview. Intellectual Property Rights as Human Right. Role of International Institutions.	1	1,2
Instructional Hours			18
Suggested Learning Methods : Video Lectures			
II	Intellectual Property Rights -Commercialization of Intellectual Property Rights by Licensing. Determining Financial Value of Intellectual Property Rights. Negotiating Payments Terms in Intellectual Property Transaction. Intellectual Property Rights in the Cyber World	1	3,4
Instructional Hours			18
Suggested Learning Methods :Group Discussion			
III	Copyright -Introduction to Copyright- International Protection of Copyright and Related rights- An Overview (International Convention/Treaties on Copyright).		5,7
Instructional Hours			18
Suggested Learning Methods : Worked examples			

IV	Indian Copyright Law - Indian Copyright Law- The Copyright Act, 1957 with its amendments, Copyright works, Ownership, transfer and duration of Copyright, Renewal and Termination of Copyright, Infringement of copyrights and remedies.		1	8									
Instructional Hours				18									
Suggested Learning Methods : Problem Based Learning													
V	Privacy Laws - History and Perspective of Privacy Laws- Global Privacy Issue- Legal Tools – The Constitution. Statutes & State Protection.		1	10,12									
Instructional Hours				18									
Suggested Learning Methods : Laboratory practice													
Total Hours				90 Hrs									
Text Books		1.Vikas Vashishth.; “Law and practice of intellectual property in India” 2.Sreenivasulu N.S; “Law Relating to Intellectual Property”, Patridge Publishing, 2013 3.Vakul Sharma; “Information Technology: Law and Practice”, Universal Law Publishing Co., India, 2011.											
Reference Books		1.The Copyright Act, 1957 2.The Patent Act, 1970											
Web. URLs		Ipindia.gov.in											
Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
5	5	6	3	3	3	25							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. P. Jeyanthi							Dr. J. Mari Shyla						

Course Code		Title		
23U3DFE608		Discipline Specific Elective Paper II: Cyber Attacks		
Semester: VI		Credits: 4	CIA: 25 Marks	ESE:75 Marks
Course Objective		This course helps to understand the concepts and various models of cloud computing		
Course Category		Employability		
Development Needs		Global		
Course Description		The course presents a top down view of cloud computing, from applications and administration to programming, infrastructure, billing and security.		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	To explain the core concepts of the cloud computing paradigm: how and why this paradigm shift came about, the characteristics, advantages and challenges brought about by the various models and services in cloud computing	Flipped Classroom	Group Discussion	
CO 2	To discuss system virtualization and outline its role in enabling the cloud computing system model.	Video Lecture	Assignment	
CO 3	To analyze various cloud programming models and apply them to solve problems on the cloud.	Problem Solving	Seminar	
CO 4	To understand various management and other distinguish services of AWS.	Video Tutorial	Quiz	
CO 5	To deploy applications over commercial cloud computing infrastructures such as Amazon	Virtual Lab	Flip Test	
Offered by		DCFS		
Course Content		Instructional Hours / Week : 6		
Unit	Description	Text Book	Chapters	
I	Cloud Computing Architecture: Cloud Reference Architecture – Cloud Service Models - Saas, PaaS, IaaS – Cloud Deployment Models - private, community, public and hybrid cloud. Control over Security in the Cloud Model – Making Sense of Clod Deployment – Making Sense of Service Models – Real-Works Cloud Usage Scenario	1	2	
		Instructional Hours		18
Suggested Learning Methods : Video Lectures				
II	Security Concerns, Risk Issues, and Legal Aspects: Cloud Computing: Security Concerns – Assessing Risk Tolerance in Cloud Computing – Legal and Regulatory Issues	1	3	
		Instructional Hours		18

Suggested Learning Methods : Video Lectures														
III	Securing the Cloud: Architecture: Security Requirements for the Architecture. - Security Patterns and Architectural Elements - Cloud Security Architecture - Planning Key Strategies for Secure Operation										4			
Instructional Hours												18		
Suggested Learning Methods : Worked examples														
IV	Securing the Cloud: Data Security: Overview of Data Security in Cloud Computing - Data Encryption: Applications and Limits - Cloud Data Security: Sensitive Data Categorization - Cloud Data Storage - Cloud Lock-in										1	5		
Instructional Hours												18		
Suggested Learning Methods : Problem Based Learning														
V	Securing the Cloud: Key Strategies and Best Practices: Overall Strategy: Effectively Managing Risk - Overview of Security Controls - The Limits of Security Controls - Best Practices - Security Monitoring										1	6		
Instructional Hours												18		
Suggested Learning Methods : Group Discussion														
Total Hours												90 Hrs		
Text Books			1. Securing The Cloud: Cloud Computing Security Techniques and Tactics by Vic (J.R.) Winkler (Syngress/Elsevier) - 978-1-59749-592-9											
Reference Books			1. Cloud Computing Design Patterns by Thomas Erl (Prentice Hall) - 978-0133858563											
Web. URLs			www.cloud.ibm.com											
Tools for Assessment (25 Marks)														
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz									Total
5	5	6	3	3	3									25
Mapping														
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L	
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H	
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M	
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L	
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H	
H-High; M-Medium; L-Low														
Course designed by							Verified by Chairman							
Dr. T. Ramaprabha							Dr. J. Maria Shyla							

Course Code		Title		
23U3DFE609		Discipline Specific Elective Paper III: Cyber Policing		
Semester: VI		Credits: 4	CIA: 25 Marks	ESE: 75 Marks
Course Objective				
		To gain knowledge in cyber policing		
Course Category				
		Entrepreneurship		
Development Needs				
		Global		
Course Description				
		This course helps to understand the state police organization and structure; also it gives an overview on different crime prevention techniques.		
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	To know about the history of Indian Police	Flipped Classroom	Group Discussion	
CO 2	To gain knowledge in Police organization and structure	Video Lecture	Assignment	
CO 3	To analysis about the crime prevention	Problem Solving	Seminar	
CO 4	To understand about the police station routine work	Tutorial/ Case Studies	Quiz	
CO 5	To understand about the public perception	Video Lecture	Flip Test	
Offered by		DCFS		
Course Content		Instructional Hours / Week : 6		
Unit	Description	Text Book	Chapters	
I	History of Indian Police: Ancient period, Medieval period and British period- Modern policing-Community policing- Police Act, 1861- Police Commission Reforms and Recommendations- National Police Commission recommendations (NPC), 1979	1	1	
Instructional Hours			18	
Suggested Learning Methods : Video Lectures				
II	State police organization and structure – Urban and rural policing- Hierarchy in city police, district police and police battalion- Functioning of State Police: Law and Order, Intelligence and Special Unit- Central police organizations: RAW, IB, NIA,CBI, CISF, CRPF, RPF- Police research and Crime Statistics Organizations: BPR&D, NCRB.	1	2	
Instructional Hours			18	
Suggested Learning Methods :Group Discussion				

III	Crime prevention: Patrolling, beat, surveillance, traffic regulation and maintenance of law & order- Collection of intelligence and its use- Use of scientific methods to tackle crime- Examination of crime scene and investigation- Methods of Investigation: Information, Modus Operandi and Interrogation, Recording of FIR, Case Diary, NC register, Collection of Evidence, Examination of Witnesses and Suspects, Confession of the accused and filing of charge Sheet.	2	3,4
Instructional Hours			18
Suggested Learning Methods : Worked examples			
IV	Police Station Routine: Roll Call, Duties of Prevention of Crime, Station Guards, Weekly routine duties of police men in cities and villages- Records maintained in police stations : General Diary, KD register, Prisoners Search Register, Duty Roster, Sentry Relief Book, Duty Roster, Gun license register, Tapal register arrest card and bail bond- New challenges faced by police: Cybercrime, financial frauds, terrorists, coastline security and organized crime- Community policing models and initiatives.	1	5,6
Instructional Hours			18
Suggested Learning Methods : Problem Based Learning			
V	Public perception of police – Measures to improve police image in urban and rural areas- Measurements to improve police-public relationship through community policing- Measures to tackle corruption – Treatment of victims and offender by the police- Campaign to prevent drug abuse and to ensure safety of women in cities.	1	7,8
Instructional Hours			18
Suggested Learning Methods : Video Lecture			
Total Hours			90 Hrs
Text Books	1. Aleem, S. (1991). Women in Indian police (15th ed.). Chicago: Sterling Publishers Private Limited. 2. Barker, M., & Petley, J. (2001). Ill effects: The media/violence (2nd Ed.). London: Routledge Belson..		
Reference Books	1. Fisher, Barry A. J. (2000). Techniques of crime scene investigation (6th Ed.). New York: CRC Press. 2. Diaz, S. M. (1976). New dimensions to the police role and functions in India. Hyderabad: National Police Academy. 3. Gautam, D. N. (1993). The Indian police: A study in fundamentals. New Delhi: Mittal Publications. 4. Krishna Mohan Mathur. (1994). Indian Police: Roles and Challenges. Gyan Publishing House, New Delhi. 5. Krishna Mohan Mathur. (1989). Internal Security Challenges and Police in a Developing Society. RBSA Publishers.		
Web. URLs	Cybercrime.gov.in		

Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
5	5	6	3	3	3	25							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. P. Jeyanthi							Dr. J. Maria Shyla						

Course Code	Title		
23U3DFE610	Discipline Specific Elective Paper III: - M-Commerce		
Semester: VI	Credits: 4	CIA: 25 Marks	ESE: 75 Marks
Course Objective	Understand the basics of e-Commerce, m-Commerce its technology and applications.		
Course Category	Entrepreneurship		
Development Needs	Global, Local		
Course Description	This course focuses on the basics of electronic commerce and its application using the mobile technology.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Understand the basics of electronic commerce	Video Lectures	Group Discussion
CO 2	Understand the basics of mobile commerce	Tutorial	Assignment
CO 3	Understand the mobile commerce technology	Flipped Classroom	Seminar
CO 4	Analysis about its applications	Tutorial/ Case Studies	Quiz
CO 5	Analysis about its business – business mobile commerce	Video Lectures	Flip Test
Offered by	DCFS		
Course Content	Instructional Hours / Week : 6		
Unit	Description	Text Book	Chapters
I	Introduction - The Domain of Mobile Commerce - A Framework for Mobile Commerce Research - Mobile Commerce Technology - NTT DoCoMo's i-mode: Developing Win-Win Relationships for Mobile Commerce - What Is i-mode in Reality - i-mode and Mobile Commerce - Successful Business Models - Horizontal Integration and the Expansion of Mobile Commerce Opportunities	1	1
Instructional Hours			18
Suggested Learning Methods : Video Lectures			
II	Wireless Devices for Mobile Commerce: User Interface Design and Usability - Wireless Devices and Their Interfaces - Wireless Device Usability - Developer Issues Location Based Services: Locating the Money - Location-Based Services Defined - Locating the Perfect Business Model - Real-World User Behaviour - Deploying LBS Services Towards a Classification Framework for Mobile Location Service - MLS Applications and Services - Enabling Technologies of MLS - Facilitating Technologies - Business Models and Pricing Schemes - Synthesis: a Classification Framework for MLS	1	2, 3, 4
Instructional Hours			18
Suggested Learning Methods :Group Discussion			

III	Wireless Personal and Local Area Networks - Radio Standards – Organizations - The Impact of Technology Advances on Strategy Formulation in Mobile Communications Networks - Stakeholders and Business Relationships in Mobile and Data Networks - Business Relationship Models In 3rd Generation Technologies - Business Relationship Models in 4th Generation Technologies - Impact of Spectrum Cost in 4G Networks	1	5, 6			
Instructional Hours			18			
Suggested Learning Methods : Worked examples						
IV	The Ecology of Mobile Commerce: Charting a Course for Success Using Value Chain Analysis - Challenges of Developing a Mobile Commerce Strategy - Employing Value Chain Analysis to Create a Business Model - Elements of the Mobile Value Chain - The Advantaged Position of Wireless Operators - Expectations for Next-Generation Mobile Commerce The Wireless Application Protocol- Background - A Strategic Analysis of the Implications of Wap and the Wireless Internet - A Framework for Strategic Wap Services	1	7, 8			
Instructional Hours			18			
Suggested Learning Methods : Problem Based Learning						
V	Mobile Business Services:A Strategic Perspectiv. - A Silent Revolution: Gradual Change is Leading to Fundamental Transformations - The Opportunity Landscapes Offered by the Mobile Consumer and Business Services Differ Substantially from One Another - The Competitive Landscape: A Mixture of It and Telecom Value Chains Mobile Portals: The Development of M-Commerce Gateways - Issues, Controversies and Problems Associated with Mobile Portals - Solutions and Recommendations	1	9, 10			
Instructional Hours			18			
Suggested Learning Methods : Collaborative Learning						
Total Hours			90 Hrs			
Text Books	1. Brian Mennecke, J.Troy Strader, “Mobile Commerce: Technology,Theory and Applications”, Idea Group Inc., IRM press, 2003. 2. Ravi Kalakota, B.AndrewWhinston, “Frontiers of Electronic Commerce”, Pearson Education, 2003.					
Reference Books	1. P. J. Louis, “M-Commerce Crash Course”, McGraw- Hill Companies February 2001. 2. Paul May, “Mobile Commerce: Opportunities, Applications, and Technologies Of Wireless Business” Cambridge University Press March 2001.					
Web. URLs	www.bigcommerce.com					
Tools for Assessment (25 Marks)						
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total
5	5	6	3	3	3	25

Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. D. Suryaprabha							Dr. J. Maria Shyla						

Course Code	Title		
23U3DFE611	Discipline Specific Elective Paper III: Network Security and Management		
Semester: VI	Credits: 4	CIA: 25 Marks	ESE: 75 Marks
Course Objective	To understand the various network security policies and management techniques		
Course Category	Employability		
Development Needs	Global		
Course Description	To introduce the concepts of network security and qualities of a good network.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Explain about the qualities of good network and various network security policies	Lecture / Flipped Classroom	Assignment
CO 2	Understand the various types of security like software/ hardware security and database security	Constructivist Approach/ Tutorial	Seminar
CO 3	Apply the concepts of intrusion detection in network	Lectures / Video Lessons	Quiz
CO 4	Determine the network management strategies	Tutorial/ Case Studies	Assignment
CO 5	Explore the and security management standards	Lecture / Class Projects	Seminar
Offered by	DCFS		
Course Content	Instructional Hours / Week : 6		
Unit	Description	Text Book	Chapters
I	Introduction: Why Network Security is needed–Management principles– Securityprinciples - Network management - Security attacks – Qualities of a Good Network. Organizational Policy and Security: Security policies, Standards and Guidelines–Information Policy – Security Policy - Physical Security – Social Engineering – Security Procedures – Building a Security Plan. Security Infrastructure: Infrastructure Components – Goals of Security Infrastructure – Design Guidelines – Security Models.		
Instructional Hours			18
Suggested Learning Methods : Assignment			
II	Cryptography: Terminology and background–Data Encryption Methods– Cryptographic Algorithms- Secret Key Cryptography - Public key cryptography – Message Digest – Security Mechanisms – Speech Cryptography. Hardware and Software Security: Hardware security – Smart Card – Biometrics – Virtual Private Networks (VPNs) - Trusted Operating Systems – Pretty Good Privacy (PGP) – Security Protocols. Database Security: Introduction to Database – Characteristics of a Database Approach – Database Security Issues - Database Security – Vendor-Specific Security – Data Warehouse Control and Security		
Instructional Hours			
Suggested Learning Methods : Seminar			
			02 Hrs

III	<p>Intrusion Detection Systems: What is not ad IDS–Infrastructure of IDS–Classification of Intrusion Detection Systems – Host-Based IDS – Network-Based IDS - Anomaly Vs Signature Detection – Manage an IDS – Intrusion Detection Tools – IDS Products and Vendors. Network Security: Fundamental Concepts – Identification and Authentication – Access Control – A Model for Network Security – Malicious Software – Firewalls.</p>												
Instructional Hours			18										
Suggested Learning Methods : Quiz													
IV	<p>Network Management: Goal of Network Management–Network Management Standards – Network Management Model – Infrastructure for Network Management - Simple Network Management Protocol (SNMP). Security Management: Security Plan - Security Analysis - Change Management - Disaster Recovery - Systems Security Management - Protecting Storage Media- Protection of System Documentation - Exchanges of Information and Software – Security Requirements of Systems.</p>												
Instructional Hours			18										
Suggested Learning Methods : Video Lectures													
V	<p>Electronic Mail–What is the E-mail threats that organization“s face -Why do you need an E-mail Policy - How do you create an E-mail Policy - Publishing the E-mail Policy - University E-mail Policy. Security of Internet Banking Systems: Introduction Banking System–Security Problem– Methodology for Security Problem – Schematic flow of Internet Banking – A layered approach to security.</p>												
Instructional Hours			18										
Suggested Learning Methods : Group Discussion													
Total Hours			90 Hrs										
Text Books	1. Network Security and Management, Brijendra Singh, PHI 2007.												
Reference Books	<p>1. Network Security: The Complete Reference by Bragg, Tata Mcgraw Hill Education Private Limited</p> <p>2. Applied Network Security Monitoring: Collection, Detection, and Analysis 1st Edition by Chris Sanders, Jason smith</p>												
Web. URLs	<p>1 https://onlinecourses.swayam2.ac.in/aic20_sp06/preview</p> <p>2 https://onlinecourses.swayam2.ac.in/arp19_ap79/preview</p>												
Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Class Participation	Assignment	Seminar	Total							
5	5	6	3	3	3	25							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	H	M	H	M	L	L	H	H	H	M	H
CO2	H	M	H	M	H	M	M	M	H	M	H	H	H
CO3	H	M	M	H	M	M	H	H	H	H	M	H	H
CO4	H	M	H	M	H	M	L	L	H	H	M	H	H
CO5	H	M	H	M	H	M	H	M	H	H	H	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Ms. G. Bharathi							Dr. J. Maria Shyla						

Course Code	Title		
23U3DFE612	Elective Paper III: Cyber Crime		
Semester: VI	Credits: 4	CIA: 25 Marks	ESE: 75 Marks
Course Objective	To explain the concept of cybercrime and various types of attacks To explain the impact of cybercrime on society		
Course Category	Entrepreneurship		
Development Needs	Global and National		
Course Description	This helps to give an overview on the major cyber crimes and the global perspectives on cybercrimes.		
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Understand the concept of cybercrime and emerging crime threats and attacks in cyberspace	Flipped Classroom	Group Discussion
CO 2	To have the basic idea on cyber offenses, cyberstalking and Cybercafe	Video Lecture	Assignment
CO 3	Evaluate the different Mobile and wireless devices used for cyber crime	Problem Solving	Seminar
CO 4	To analyse the tools and methods used in Cyber Crime	Tutorial/ Case Studies	Quiz
CO 5	To understand the concept of cyber terrorism	Video Lecture	Flip Test
Offered by	DCFS		
Course Content	Instructional Hours / Week : 6		
Unit	Description	Text Book	Chapters
I	Introduction to Cybercrime, Introduction, Cyber Crime - Definition and Origins of the word, Cyber Crime and Information Security, Who are cyber criminals? Classifications of Cybercrime, Cybercrime: The Legal Perspectives, Cybercrime: An Indian perspective, Cybercrime and the Indian ITA 2000, A global perspective on cybercrimes, Cybercrime Era: Survival Mantra for the Netizens.	1,2	1,3
Instructional Hours			18
Suggested Learning Methods : Video Lectures			
II	Cyberoffenses: Introduction, How criminals plan the attacks, Social Engineering, Cyberstalking, Cybercafe and Cybercrimes, Botnets: The fuel for Cybercrime, Attack vector, Cloud Computing.	2	4,5
Instructional Hours			18
Suggested Learning Methods :Group Discussion			
III	Cybercrime: Mobile and Wireless Devices – Introduction, Proliferation of mobile and Wireless Devices, Trends in Mobility, credit cards frauds in mobile and Wireless computing Era, Security Challenges Posed by mobile devices, Registry settings for mobile devices, Authentication Service Security, Attacks on Mobile/Cell phones, Mobile devices: Security implications for organisations, Organizational Measures for handling Mobile devices – Related Security Issues, Organizational security policies and Measures in mobile computing Era, Laptop	2	6,7

Instructional Hours			18										
Suggested Learning Methods : Worked examples													
IV	Tools and Methods used in Cybercrime: Introduction, Proxy servers and Anonymizers, Phishing, Password Cracking, Key Loggers and Spywares, Virus and Worms, Trojan Horses Backdoors, Steganography, DoS and DDoS attacks, SQL Injection, Buffer Overflow, Attacks on Wireless Networks.			2	8								
Instructional Hours			18										
Suggested Learning Methods : Problem Based Learning													
V	Cybercrime and Cyberterrorism: Social, Political, Ethical and Psychological Dimensions – Introduction, Intellectual Property in the cyberspace, The Ethical Dimension of Cybercrimes, The psychology, Mindset and Skills of Hackers and other Cyber Criminals, Sociology of Cyber Criminals, Information Warfare: Perception or An Eminent Reality?.			2	20								
Instructional Hours			18										
Suggested Learning Methods : Group Discussion													
Total Hours			90 Hrs										
Text Books		1. Nina Godbole, Sunit Belapure “Cyber Security” First Edition 2011, Copyright by Wiley India Pvt, Ltd											
Reference Books		1. William Stallings; “Cryptography and Network Security: Principles and Practices”, Fifth Edition, Prentice Hall Publication Inc., 2007. 2. Atul Jain; “Cyber Crime: Issues, Threats and Management”, 2004. 3. Majid Yar; “Cybercrime and Society”, Sage Publications, 2006.											
Web. URLs		https://www.fbi.gov/investigate/cyber											
Tools for Assessment (25 Marks)													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
5	5	6	3	3	3	25							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	L	M	M	L	M	H	M	H	M	L
CO2	M	M	M	M	H	M	M	M	M	L	M	H	H
CO3	H	L	M	H	M	M	L	H	H	L	H	L	M
CO4	M	H	L	M	L	L	H	M	M	L	L	M	L
CO5	M	M	H	H	M	H	M	H	H	L	M	M	H
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. T. Ramaprabha							Dr. J. Maria Shyla						

Course Code		Title		
23U3DFV613		Project & Viva-Voce		
Semester: VI		Credits: 4	CIA : 40 Marks	ESE: 60 Marks
Course Objective	To give project based learning which makes the students to apply practically what they learned.			
Course Category	Skill Development			
Development Needs	Global			
Course Description	Develop Problem Solving Skills to solve the computer based problems at Global needs.			
Course Outcomes		Teaching Methods	Assessment Methods	
CO 1	Remember the fundamental concepts of algorithm and designs	Lecture	Review	
CO 2	Understand the optimal methods and Software Engineering concepts to be applied	Constructivist Approach	Review	
CO 3	Apply the knowledge and what they learned	Video Lessons	Review	
CO 4	Analyze the Economical and Technical feasibility	Tutorial	Program Execution	
CO 5	Develop software based applications and Deployment of software	Class Projects	Program Execution	
Offered by	Digital and Cyber Forensic Science			
Course Content		Instructional Hours / Week : 6		
Unit	Description	Text Book	Chapters	
I	<p align="center">PROJECT WORK</p> <p align="center">Title of the Project</p> <p align="center">A project report submitted to the Bharathiar University in the partial fulfillment</p> <p align="center">of the requirements for the award of the degree of</p> <p align="center">BACHELOR OF DIGITAL AND CYBER FORENSIC SCIENCE</p> <p align="center">Submitted by</p> <p align="center">Name of the Student</p> <p align="center">(Reg.No)</p> <p align="center">Under the Guidance of</p> <p align="center">Guide Name (Designation)</p> <p align="center"><College emblem></p> <p align="center">NEHRU ARTS AND SCIENCE COLLEGE</p> <p align="center">(Autonomous)</p> <p align="center">(Reaccredited by NAAC with “A+” Grade, ISO 9001-2008 & ISO 14001 : 2004 Certified)</p>			

RECOGNIZED BY UGC & AFFILIATED TO BHARATHIAR
UNIVERSITY

“NEHRU GARDENS”, T. M. PALAYAM, COIMBATORE – 641
105.

Month & year

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<p>B. Reports</p> <p>EVALUATION PROCESS</p> <p>Review – I has to be conducted during the Last week of December</p> <p>Review – II has to be conducted during the Last week of January</p> <p>Review – III has to be conducted during the Last week of February</p> <p>Document, Preparation and Implementation has to be done during the First week of March</p> <p>Viva-Voce examination will be conducted at the end of the semester by both Internal (Respective Guides) and External Examiners, after duly verifying the Project Report available in the College.</p>													
Instructional Hours												90	
Tools for Assessment (40 Marks)													
Review I		Review II		Review III			Document, Preparation and Implementation				Total		
10		10		10			10				40		
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	M	M	H	M	L	L	H	H	H	H	M
CO2	H	H	M	M	H	H	H	H	H	M	M	H	H
CO3	H	M	M	H	M	M	H	H	H	H	M	H	H
CO4	H	H	H	M	H	M	L	L	M	H	H	M	H
CO5	H	M	H	M	H	M	H	M	H	H	H	H	M
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. T. Ramaprabha							Dr. J. Maria Shyla						

**Extra
Departmental
Course**

Course Code		Title	
22U4IT3ED1 / SBOEC		Extra Departmental Course: Practical in LibreOffice Suite	
Semester: III		Credits : 2	ESE: 50 Marks
Course Objective		Introduces the basic features of LibreOffice, Writer, Calc, Impress.	
Course Category		Skill Development	
Development Needs		Global	
Course Description		This course helps to understand the basic working of Libreoffice	
Course Outcomes		Teaching Methods	Assessment Methods
CO1	Relate each of the LibreOffice programs to create professional business documents.	Demonstration Methods	Laboratory Experiments
CO2	Develop personal and/or business documents following current professional and/or industry standards.		
CO3	Implement various components and functions in Libreoffice suite.		
CO4	Create application with various toolbar components in Libreoffice suite.		
CO5	Demonstration with various presentation tools in Libreoffice suite.		
Offered by: Information Technology			
Course Content		Instrucion Hour / Week : 2	
S.No	List of Practical		
1	Create a Document in Libre Office Writer perform formatting operations using line spacing, font type and size, alignment, insert bullets. Save and close the document.		
2	Design a National Level Seminar Invitation with the following specifications using of Libre office writer. <ul style="list-style-type: none"> ➤ Attractive Page Border. ➤ Design the name of the Seminar using WordArt. ➤ Use ClipArt ➤ With backgroundcolor 		
3	Design a Visiting Card for a person with a card size of 4" X 3" including necessary details.		
4	Create a Document in Libre Office Writer with the following tools <ul style="list-style-type: none"> ➤ Inserting List and Tables ➤ Inserting Shapes ➤ Inserting Header, Footer and Page Number 		
5	Create a calc sheet with the following <ul style="list-style-type: none"> ➤ Insert Auto format Tables ➤ Perform Conditional Formatting to a cell ➤ Apply Formula to a cell 		

6	Draw a line, XY, bar and pie chart for a given user data in LibreOffice Calc
7	Create a Libre office calc sheet with student strength of ten having marks in five subjects for three semesters. Perform total and average using standard functions.
8	Perform Autofilter, Standard Filter and Advanced Filter to find the fast learner, medium learner and average learner to the problem given in exercise 7.
9	Create a presentation on tourism using different colours and text formats using Libreoffice Impress.
10	Create a presentation about your department using animations, sound effects, ole objects.
11	Create a flow chart for a given problem in the Libreoffice draw using basic shapes.
12	Perform Editing operations to a object in Libreoffice Draw with selection mode, size, and with necessary transformations.
Total Hours	
30	

Text Book:

1. LibreOffice – Getting Started Guide, 2017

Reference Books

1. <http://www.open-of-course.org/courses/course/view.php?id=86>.

Mapping

CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	M	L	H	M	M	M	H	M	H	H	M
CO2	H	M	H	H	M	M	H	H	M	M	M	M	L
CO3	H	M	H	M	L	H	M	M	H	H	M	H	M
CO4	M	H	M	M	H	L	M	L	H	H	H	M	L
CO5	M	H	H	M	H	H	H	H	H	H	H	H	M

H-High; M-Medium; L-Low

Course Designed by

Verified by Chairman

Dr. T. Ramaprabha

Dr. J. Maria Shyla

Course Code		Title	
22U4IT3ED2 / SBOEC		Extra Departmental Course: GIMP	
Semester: III		Credits : 2	ESE: 50 Marks
Course Objective	The objective of the course is to understand the animation technique through open source animation tool		
Course Category	Skill Development		
Development Needs	Global		
Course Description	This course helps to understand the basic working of GIMP		
Course Outcomes		Teaching Methods	Assessment Methods
CO1	Understand the basics of GIMP	Demonstration Methods	Laboratory Experiments
CO2	Manipulating a photograph to drawing		
CO3	Apply work with tools		
CO4	Apply work with Images		
CO5	Create animations using Text and colors		
Offered by: Information Technology			
Course Content		Instrucion Hour / Week : 2	
S.No	List of Practical		
1	Create Sun Flower		
2	Animate Plane flying in the Clouds		
3	Create Plastic Surgery for the Nose		
4	Create See-through text.		
5	Create a Web Page		
6	Convert Black and White Photo to Color Photo		
7	Design a visiting card containing at least one Graphic and text information.		
8	Create an animation to represent the growing Moon.		
9	Create an animation to indicate a ball Bouncing on steps		
10	Simulate movement of a cloud		
11	Display the background given (filename: Tulip.jpg) through your name		
12	Create an animation with the following features. Welcome * letters should appear one by one * the fill color of the text should change to a different color after. The display of the full word using flash		
		Total Hours	30
Text Book:			

<ol style="list-style-type: none"> 1. Karian Kylandar & Olof S. Kylandar, <i>GIMP: The Official Handbook</i>, The Coriolis Group, 2014. 2. Philip Whitt, <i>Beginning Photo Retouching & Restoration Using GIMP</i>, APress, 2014 													
Reference Books													
<ol style="list-style-type: none"> 1. Kay Ritcher, Das GIMP 2.8-Buch, O'Reilly, 2013. 													
Mapping													
CO / PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	M	M	M	L	L	L	H	M	H	H	M
CO2	M	H	M	H	M	H	H	M	M	M	M	M	L
CO3	M	M	M	H	H	L	H	L	H	H	M	H	M
CO4	H	H	L	M	M	L	L	L	H	H	H	M	L
CO5	H	M	M	M	L	M	L	L	H	H	H	H	M
H-High; M-Medium; L-Low													
Course Designed by							Verified by Chairman						
Dr. P. Jeyanthi							Dr. J. Maria Shyla						

Self Study Paper

Course Code		Title	
23UCJSS01		Self Study Paper: Practical in WordPress	
Semester: II - IV		Credits: 2	ESE:100 Marks
Course Objective		To gain knowledge in Word Press and apply the same in development of the applications and to build and run some of the largest and most powerful websites on the Internet	
Course Category		Skill Development	
Development Needs		Global/Local	
Course Description		To development skill set in Machine Learning and apply the concepts to develop applications in order to meet the Local and Global needs	
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Understand the basics of Word Press	Program Demonstration	Program Creativity
CO 2	Gains knowledge on content management	Program Demonstration	Debugging
CO 3	Learns basic HTML and Word Press content	Program Demonstration	Application of Logic
CO 4	Apply smiles and links to the content	Program Demonstration	Program Development
CO 5	Create customizing feedbacks	Program Demonstration	Program Development
Offered by	Information Technology		
Course Content		Instructional Hours / Week :	
Program List			
1. To Create a Login and its First steps with word press			
2. To Create a Blog in Word Press			
3. To Develop a page using semantics-learning the jargon in WordPress			
4. Develop a page New to word press-where to start using Themes and Media			
5. To create a new page Using images in WordPress			
6. To create a new page Wrapping text around images			
7. To develop a page and using Comments in WordPress			
8. How to add Typewriter (Typing) Animated Text Effect using Typed.js to WordPress Site			

9. Create a new web page and using Post formats in WordPress														
10. Develop a new page with Linking to posts, categories in WordPress														
11. To create login and pages Using smiles and links manager														
12. To develop a new page and using Word press feeds, customizing feeds, how to use gravitas in Word Press, writing code in your posts.														
Solving Case studies and Program development														
Total Hours														
Tools for Assessment														
Laboratory Performance-Application of Logic	Laboratory Performance-Program Creativity	Laboratory Performance-Program Debugging	Test 1	Test 2	Observation Note Book									Total
-	-	-	-	-	-									-
Mapping														
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	H	H	H	H	M	H	H	H	H	H	H	H	M	
CO2	H	H	H	H	M	H	H	H	H	H	H	H	M	
CO3	H	H	H	H	H	H	H	H	H	H	H	H	H	
CO4	H	H	H	H	H	H	H	H	H	H	H	H	H	
CO5	H	H	H	H	H	H	H	H	H	H	H	H	H	
H-High; M-Medium; L-Low														
Course designed by							Verified by Chairman							
Dr. T. Ramaprabha							Dr. J. Maria Shyla							

Course Code		Title	
23UCJSS02		Self Study Paper: Quantitative Aptitude	
Semester: II - IV		Credits: 2	ESE: 100 Marks
Course Objective			
		This course presents shortcut methods to solve quantitative problems and increases the problem solving ability of students.	
Course Category			
		Skill Development	
Development Needs			
		Global	
Course Description			
		This course emphasizes on the different quantitative techniques which assists in real time problem solving	
Course Outcomes		Teaching Methods	Assessment Methods
CO 1	Understand and gain knowledge about L.C.M & H.C.F.	NA	NA
CO 2	Analyze Profit and Loss and Ratio.	NA	NA
CO 3	Enhance the skill of understanding problems on Ages and Calendar.	NA	NA
CO 4	Evaluate the Problems on Train and Boats and Streams.	NA	NA
CO 5	Evaluate the Problems on Pipes and Cistern.	NA	NA
Offered by		Information Technology	
Course Content		Instructional Hours / Week :	
Unit	Description	Text Book	Chapters
I	Numbers	1	1
	L.C.M. & H.C.F.	1	2
	Average	1	6
Instructional Hours			
Suggested Learning Methods : Video Lectures			
II	Percentage	1	10
	Profit and Loss	1	11
	Ratio and Proportion	1	12
Instructional Hours			
Suggested Learning Methods : Video Lectures			
III	Simple Interest	1	21
	Compound Interest	1	22

	Problems on Ages	1	8										
	Problems on Calendar	1	27										
	Problems on Clocks	1	28										
Instructional Hours													
Suggested Learning Methods : Worked examples													
IV	Time and distance	1	17										
	Problems on Trains	1	18										
	Boats and Streams	1	19										
Instructional Hours													
Suggested Learning Methods : Problem Based Learning													
V	Time and Work	1	15										
	Pipes and Cisterns	1	16										
Instructional Hours													
Suggested Learning Methods : e-content													
Total Hours													
Text Books	1 Dr. R. S. Aggarwal, Quantitative Aptitude , S. Chand, 7 th Edition, 2008												
Reference Books	1. Dr. N. K. Singh, Quantitative aptitude test, Upkar's, 1 st Edition, 2009												
Web. URLs	https://www.toppr.com/guides/quantitative-aptitude/												
Tools for Assessment													
CIA I	CIA II	CIA III	Assignment	Seminar	Quiz	Total							
-	-	-	-	-	-	-							
Mapping													
CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	M	M	L	H	M	L	M	H	M	H	L	M
CO2	M	M	H	H	M	M	H	H	M	L	M	M	L
CO3	H	M	H	M	L	H	M	M	H	H	M	L	M
CO4	M	H	H	M	M	L	H	L	H	M	H	M	M
CO5	H	M	H	M	H	L	H	H	L	H	L	H	M
H-High; M-Medium; L-Low													
Course designed by							Verified by Chairman						
Dr. T. Ramaprabha							Dr. J. Maria Shyla						