

Course Code	Title		
18U1TAM101	PART – I TAMIL - I		
Semester: I	Credits: 4	CIA: 25 Marks	ESE : 75 Marks

(Common to all UG Programmes)

Course Objective : மொழி இலக்கியத்தின் வாயிலாக அறம்சார் பண்பு மற்றும் ஆளுமைமிக்க மாணவர்களை உருவாக்குதல்.

Course Outcomes : தமிழ் இலக்கியங்கள் வாயிலாக சமூகச் சீர்திருத்தச் சிந்தனைகள் பெறப்படும்

Offered by : தமிழ்த்துறை

Course Content

Instructional Hours / Week: 5

Unit	Description		
I	அற இலக்கியம் - திருக்குறள்		
	1. அறன்வலியுறுத்தல் (31 - 40 குறள்)		
	2. நடுவு நிலைமை (111 - 120 குறள்)		
	3. ஈகை (221 - 230 குறள்)		
	4. புகழ் (231 - 240 குறள்)		
	5. வாய்மை (291 - 300 குறள்)		
		Instructional Hours	15
II	புதுக்கவிதைகள்		
	1. பாரதியார்- நிலவுää வானம் ää காற்று		
	2. பாரதிதாசன் - வான்		
	3. ஆரூர் தமிழ்நாடன்- கரிக்கிறது தாய்ப்பால்		
	4. காகிதப்பீக்கள் - நா. காமராசன்		
	5. மரங்கள் - மு. மேத்தா		
	6. சுவாசம் - சல்மா		
		Instructional Hours	15
III	பெண்ணியம்		
	1. ஃசி வாழ்க்கை – ஆண்டாள் பிரியதர்சனி (சுயம் பேசும் கிளி)		
	2. தொட்டிச்செடி – கவிஞர் இளம்பிறை		
	3. அம்மா – சுகிர்தராணி		
	4. நீரில் அலையும் முகம் - அ.வெண்ணிலா		
		Instructional Hours	15
IV	சிறுகதைகள்		
	புதுமைப்பித்தன் சிறுகதைகள் (மூன்றாம் பாகம்)		
		Instructional Hours	15

V	இலக்கண - இலக்கிய வரலாறு		
	1. மாணக்கர்களுக்குரிய இலக்கணம் (நன்னூல் மூன்று நூற்பா)		
	2. பதினெண்கீழ்க்கணக்கு நூல்கள் - அறிமுகம்		
	3. புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும்		
	4. சிறுகதையின் தோற்றமும் வளர்ச்சியும்		
		Instructional Hours	15
		Total Hours	75

பார்வை நூல்கள்:

1. பாரதியார் - பாரதியார் கவிதைத் தொகுப்புää அபிராமி பதிப்பகம்ää 7-பிää கொடிமரத் தெருää சென்னை - 600013.
2. பாரதிதாசன் - அழகின் சிரிப்புää அபிராமி பதிப்பகம்ää 7-பிää கொடிமரத் தெருää சென்னை- 600013.
3. அப்துல் ரகுமான் - அப்துல் ரகுமான் கவிதைகள்ää விஜயா பதிப்பகம்ää கோவை - 641001.
4. மு. மேத்தா - கண்ணீர்ப்பூக்கள்ää குமரன் புத்தக நிலையம்ää மதுரை.
5. திருவள்ளுவர் - திருக்குறள் பரிமேலழகர் உரைää சாரதா பதிப்பகம்ää ஜி-4ää சாந்தி அடுக்ககம்ää 2ஃ3ää ஸ்ரீ கிருஷ்ணாபுரம் தெருää இராயப்பேட்டைää சென்னை - 600014.
6. ஆண்டாள் பிரியதர்சனி - சுயம் பேசும் கிளி கவிதைத்தொகுப்புää ராகவேந்திரா வெளியீடு 163ஃ2 பொன்விழா அச்சகம்ää பாடிக்குட்ட சாலைää அண்ணாநகர்ää சென்னை.
7. கவிஞர் இளம்பிறை - தொட்டிச்செடிää பொன்னி வெளியீடுää சென்னை - 91.
8. சுகிர்தராணி - தீண்டப்படாத முத்தம்ää காலச்சுவடு பதிப்பகம்ää நாகர்கோயில்.
9. அ.வெண்ணிலா - நீரில் அலையும்; முகம் முதல் கவிதைத் தொகுப்பு - 2000
10. முனைவர் ச.சுபாஷ் சந்திரபோஸ் - புதுமைப்பித்தன் சிறுகதைகள் (மூன்றாம் பாகம்) பாவை பப்ளிகேஷன்ஸ்ää சென்னை - 600014.
11. மு.வ. - தமிழ் இலக்கிய வரலாறு சாகித்திய அகாதெமிää புதுதில்லி - 110001.

12. தமிழண்ணல் - புதிய நோக்கில் தமிழ் இலக்கிய வரலாறுää மீனாட்சி புத்தக நிலையம்ää மதுரை – 625001.
13. சல்மா - ஒரு மாலையும் இன்னோறு மாலையும்ää காலச்சுவடு பதிப்பகம்ää நாகர்கோவில்.
14. பவணந்தி - தென்னிந்திய சைவசித்தாந்த நூற்பதிப்புக் கழகம்ää திருநெல்வேலி.

Tools for Assessment (25 Marks)

CIA I	CIA II	Model	Assignment	Seminar	Attendance	Total
5	5	6	3	3	3	25

Course Designed by	Verified by	Checked by	Approved by

Course Code	Title		
18U1TAM202	PART – I TAMIL - II		
Semester: II	Credits: 4	CIA: 25 Marks	ESE: 75 Marks

(Common to all UG Programmes)

Course Objective : மொழி இலக்கியத்தின் வாயிலாக அறம்சார் பண்பு மற்றும் ஆளுமைமிக்க மாணவர்களை உருவாக்குதல்

Course Outcomes : பக்தி இலக்கியங்கள் வழி வாழ்வியல் நெறிகள் பெறப்படும்.

Offered by : தமிழ்த்துறை

Course Content

Instructional Hours / Week: 5

Unit	Description		
I	பக்தி இலக்கியங்கள்		
	1. திருவாசகம் - பிடித்த பத்து பாடல்கள் 1-10		
	2. நாலாயிர திவ்விய பிரபந்தம் பெரியாழ்வார் (கண்ணன் திரு அவதாரச் சிறப்பு (13 - 22) பாடல்கள்)		
	3. நாலாயிர திவ்விய பிரபந்தம் தொண்டரடிப் பொடியாழ்வார் திருப்பள்ளியெழுச்சி (1-5 பாடல்கள்)		
	4. திருவருட்பா- இராமலிங்க அடிகளார் நான்காவது திருமுறை அருள் பிரகாசமாலை 1-10 பாடல்கள்		
Instructional Hours			15
II	சிறீறிலக்கியங்கள்		
	1. கலம்பகம் - நந்திக் கலம்பகம் (91 - 100 பாடல்கள்)		
	2. பள்ளு - முக்கூடற்பள்ளு (350 - 360)		
	3. குறவஞ்சி - திருக்குற்றாலக்குறவஞ்சி (1-10)		
	4. சதகம் - வைராக்கிய சதகம் (1-10)		
5. பட்டினத்தார் பாடல்கள் (358-367)			
Instructional Hours			15
III	நாவல்		
	கல்மரம் - திலகவதி		
Instructional Hours			15

IV	இலக்கணம்		
	1. வல்லினம் மிகும் இடங்கள் 2. வல்லினம் மிகா இடங்கள் 3. தொகை நிலைத் தொடர் 4. தொகா நிலைத் தொடர்		
Instructional Hours			15
V	இலக்கிய வரலாறு பாடத்திட்டத்தைத் தழுவியது.		
	1. சைவமும் தமிழும் 2. வைணமும் தமிழும் 3. சிற்றிலக்கியத்தின் தோற்றமும் வளர்ச்சியும் 4. புதினத்தின் தோற்றமும் வளர்ச்சியும் 5. விண்ணப்பங்கள்ää மடல்கள் எழுதச் செய்தல்		
Instructional Hours			15
Total Hours			75

பார்வை நூல்கள்:

- மாணிக்கவாசகர் அருளிய திருவாசகம் - சித்தாந்த பண்டிதர் திரு.ப.இராமநாத பிள்ளை விளக்க உரையுள் கழகக் வெளியீடுää திருநெல்வேலிää தென்னிந்திய சைவ சித்தாந்த நூற்பதிப்புக் கழகம் லிமிடெட்ää 522 டி.டி.கே. சாலைää சென்னை- 600018.
- புலவர் த.திருவேங்கட இராமானுஜதாசன் - நாலாயிர திவ்வியப் பிரபந்தம் முதல் ஆயிரம் மூலமும் உரையும்ää உமா பதிப்பகம்ää 171ää புதிய எண்.18 பவளக் காரத் தெருää மண்ணடிää சென்னை - 600001.
- தாயுமான திருவருட் பிரகாச வள்ளலார் - திருஅருவட்பா நான்காவது திருமுறைää சகுந்தலை நிலையம்ää 171ää புதிய எண்.18 பவளக் காரத் தெருää மண்ணடிää சென்னை - 600001.
- ஆசிரியர் பெயர்தெரியவில்லை - நந்திக் கலம்பகம் - மணிவாசகர் பதிப்பகம்ää ராஜ வீதிää கோயமுத்தூர் - 641001.
- முனைவர் கதிர்முருகு - முக்கூடற் பள்ளு மூலமும் உரையும்ää சாரதா பதிப்பகம்ää சென்னை.
- புலியூர்க்கேசிகன் தெளிவுரை - திருக்குற்றாலக் குறவஞ்சிää செல்லப்பா பதிப்பகம்ää

- சென்னை.
7. சாந்தலிங்க சாமிகள் - சாந்தலிங்க அடிகளார் திருமடம் வெளியீடு஁஁ பேரூர்஁஁ கோவை-10.
8. அ.மாணிக்கம் உரையாசிரியர் - பட்டினத்தார் பாடல்கள் மூலமும் உரையும்஁஁
வர்த்தமானன் பதிப்பகம்஁஁ 40஁஁ சரோஜினி தெரு஁஁ தியாகராய நகர்஁஁ சென்னை - 17.
9. திலகவதி - கல்மரம்஁஁ அம்ருதா பதிப்பகம் எண் 5஁஁ 5 வது தெரு஁஁ எஸ்.எஸ்
அவென்யூ஁஁ சக்தி நகர்஁஁ போரூர்஁஁ சென்னை - 600116.
10. தமிழண்ணல் - புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு஁஁ மீனாட்சி புத்தக
நிலையம்஁஁ மதுரை - 625001.
11. நல்ல தமிழ் எழுத வேண்டுமா? - அ.கி.பரந்தாமனார். அல்லி நிலையம்஁஁
சென்னை - 600007.
12. முனைவர் பாக்கியமேரி - தமிழ் இலக்கிய வரலாறு -N஁஁டர் வெளியீடு஁஁ கோவை-600098.
13. மு.வ. - தமிழ் இலக்கிய வரலாறு சாகித்திய அகாதெமி஁஁ புதுதில்லி - 110001.

Tools for Assessment (25 Marks)

CIA I	CIA II	Model	Assignment	Seminar	Attendance	Total
5	5	6	3	3	3	25

Course Designed by	Verified by	Checked by	Approved by

Course Code	Title		
18U3CKC611	Core Paper: XVII Data Mining (Common to BCA and IT)		
Semester: VI	Credits: 4	CIA : 25 Marks	ESE: 75 Marks

Course Objective:

To enable the students to explore data using data mining techniques to solve the business problems.

Course Outcomes (CO):

CO1	Know basic concept of Data Mining and its Association Rules
CO2	Understand the different types of Clustering
CO3	Apply the learnt method in splitting the data and creating Decision Tree
CO4	Analyse various type of Mining like Web Mining and Text Mining
CO5	Assess knowledge of What, When and Where the data applied

Offered by: Computer Applications

Course Content

Instructional Hours / Week: 6

Unit	Description	Text Book	Chapter
I	Introduction and Association Rules : Introduction- What is Data Mining – Data Mining Definition – KDD Vs Data Mining – DBMS Vs Data Mining – Data Mining Techniques – Data Mining Application Areas. Association Rules- What is Association Rules - Methods to Discover Association rules – A Priori Algorithm – Partition Algorithm – Pincer Search Algorithm.	1	3, 4
Instructional Hours			18
II	Clustering Techniques: Introduction - Clustering Paradigms – Partitioning Paradigm – m k Medoid Algorithm – CLARA – CLARANS – Hierarchical Clustering – DBSCAN – BIRCH – CURE.	1	5
Instructional Hours			18
III	Decision Tree – What is Decision Tree – Tree Construction Principle – Best Split – Splitting Criteria – Decision Tree Construction – CART – ID3 – CHAID – Decision Tree Construction with Pre-sorting.	1	6

Instructional Hours			18
IV	Web Mining – Web Content Mining – Web Structure Mining – Web Usage Mining. Text Mining – Unstructured Text - Episode Rule Discovery for Texts – Hierarchy of Categories – Text Clustering.	1	8
Instructional Hours			18
V	Temporal and Spatial Data Mining: What is Temporal Data Mining – Temporal Association Rule – Sequence Mining – GSP Algorithm. Spatial Mining – Spatial Mining Tasks – Spatial Clustering – Spatial Trends.	1	9
Instructional Hours			18
Total Hours			90

Text Book(s):

1. Data Mining Techniques by Arun K Purari , Published by University Press India Private Limited.

Reference Book(s):

1. Insight into Data Mining Theory and Practice by Soman, Diwakar and Ajay, Published by Prentice Hall of India Private India.

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar/Quiz		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	M	M	M	M	M
CO 2	M	M	M	H	H
CO 3	H	H	H	H	H
CO 4	H	H	H	H	H
CO 5	H	H	H	H	H

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	M	M	M	M	M	-	-	-	-	-
CO 2	M	M	H	H	H	-	-	-	-	-
CO 3	M	M	H	H	H	-	-	-	-	-
CO 4	M	H	H	H	H	-	-	-	-	-
CO 5	H	H	H	H	H	-	-	-	-	-

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
R. Annamalai Saravanan	Dr.P.K. Manoj Kumar		

Course Code	Title		
19U3CAC506	Core Paper: XIII Software Engineering		
Semester: V	Credits: 3	CIA: 20 Marks	ESE: 55 Marks

Course Objective:

To gain knowledge about basic concepts of Software Engineering and Testing.

Course Outcomes (CO):

CO1	Able to understand the nature of the software and different types of process models
CO2	Gains knowledge about the requirements stage development of the software
CO3	Analyze the different types of architectural designs of the software
CO4	Setting the context on Software Development and Evaluates different testing strategies of the software
CO5	Understand the testing types and test automation

Offered by: Computer Applications**Course Content****Instructional Hours / Week: 5**

Unit	Description	Text Book	Chapter
I	Introduction to Software Engineering: Evolving role of software- Software- The changing nature of Software- Software Myths. A Generic view of Process- A Layered Technology	1	1
	Software Process Models: Prescriptive models- The Waterfall Model - Incremental Process Models- Evolutionary Process Models.	1	3
Instructional Hours			15
II	Requirements Engineering: Requirements Engineering Tasks- Initiating the Requirements Engineering Process- Eliciting Requirements- Building the Analysis Model.	1	7
	Building the Analysis Model: Scenario-Based Modelling- Flow Oriented Modelling.	1	6
Instructional Hours			15
III	Design Engineering: Design Concepts -The design model.	1	9
	Creating an Architectural Design: Representing the System in Context- Defining Archetypes- Refining the Architecture into Components- Describing Instantiations of the System.	1	10
	Modelling Component-Level Design: What is a Component – Designing Class-Based Components.	1	11

	User Interface Design: User Interface Analysis and Design- Interface Design steps.	1	12
Instructional Hours			15
IV	Software Development Life Cycle models: Phases of Software project – Quality, Quality Assurance, Quality control – Testing, Verification and Validation. White-Box Testing- Static Testing – Structural Testing. Black-Box Testing- How to do Black-Box Testing?	2	2,3,4
Instructional Hours			15
V	Integration Testing: Integration Testing as Type of Testing – Integration Testing as a Phase of Testing – Scenario Testing – Defect Bash. System and Acceptance Testing: system Testing Overview – Why System testing is done? – Functional versus Non-functional Testing - Functional testing - Non-functional Testing – Acceptance Testing. Performance Testing: Methodology of Performance Testing – tools for Performance Testing Regression Testing: What is Regression Testing? – Types of Regression Testing. What is Test Automation?	2	5,6,7, 8,16
Instructional Hours			15
Total Hours			75

Text Book(s):

1. Roger S Pressman, **Software Engineering a Practitioner's Approach**, Sixth Edition, McGraw Hill, International Edition, 2013
2. Srinivasan Desikan, Gopaldaswamy Ramesh, **Software Testing Principles and Practices**, Pearson, 2006.

Reference Books(s):

1. Richard Fairley, **Software Engineering Concepts**, Tata McGraw-Hill Publishing Company Limited, 2010.
2. Waman S. Jawadekar, **Software Engineering – Principles and Practice**, Tata McGraw Hill Publishing Company Limited, 2011.

Tools for Assessment (20 Marks)

CIA I	CIA II	Model	Assignment	Seminar/Quiz	Attendance	Total
4	4	5	2	2	3	20

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	M	M	M	M	M
CO 2	M	M	H	H	M
CO 3	M	H	H	H	M
CO 4	H	M	M	M	M
CO 5	M	H	M	H	H

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	M	M	M	M	M	-	-	-	-	-
CO 2	M	M	H	H	H	-	-	-	-	-
CO 3	M	M	H	H	H	-	-	-	-	-
CO 4	M	H	H	H	H	-	-	-	-	-
CO 5	H	H	H	H	H	-	-	-	-	-

H-High; M-Medium: L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Mrs.A.Nandhini	Dr.V.Chitraa		

Course Code	Title		
19U3CKC305	Core Paper VII Operating Systems (Common To CS/CA/IT/CT)		
Semester: III	Credits: 4	CIA:25 Marks	ESE: 75 Marks

Course Objective:

To understand the importance of Operating Systems, its functionalities to manage resources of Computer and Peripherals.

Course Outcome:

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

CO1	Recognize the basic concepts of Operating system
CO2	Understand the concepts of processes and scheduling of process.
CO3	Explain the techniques of managing the deadlock and memory
CO4	Illustrate the Segmentation of Paging and Page Replacement policies.
CO5	Apply various file system implementation

Offered by: Computer Science**Course Content****Instructional Hours / Week: 5**

Unit	Description	Text Book	Chapter
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
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

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	
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	5
Instructional Hours		15	
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	7
Instructional Hours		15	
Total Hours		75	

Text Book(s):

1. D M Dhamdhere, Operating Systems-A concept –Based Approach, 2nd 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 2009.

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Quiz	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	M	M	M
CO2	M	M	H	M	M
CO3	H	H	H	H	M
CO4	H	H	H	M	H
CO5	H	H	M	M	M

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	H	H	M	M	M	-	-	-	-	-
CO 2	H	H	H	M	L	-	-	-	-	-
CO 3	S	H	H	H	H	-	-	-	-	-
CO 4	H	M	H	H	M	-	-	-	-	-
CO 5	H	H	M	M	H	-	-	-	-	-

S - Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by	Checked by	Approved by

Course Code	Title		
20U3CAC404	Core Paper X RDBMS and ORACLE		
Semester: IV	Credits: 4	CIA : 25 Marks	ESE: 75 Marks

Course Objective:

To inculcate fundamental knowledge in RDBMS concepts and make them to create, manipulate information with the real time datasets.

Course Outcomes (CO):

CO1	Remember the Data types and fundamentals of database.
CO2	Understanding the concept of Database and Various queries in SQL , PL/SQL
CO3	Applying the concept in various tables to retrieve information.
CO4	Analysing the different types of queries in SQL.
CO5	Able to evaluate the errors in SQL & PL/SQL statements.

Offered by: Computer Applications

Course Content

Instructional Hours / Week: 5

Unit	Description	Text Book	Chapter
I	Introduction: Database - Purpose of Database Systems - Data Models – Database Language – Transaction Management - Overall System Structure.	2	1
	A Relational approach: Relationships –Relational Database Model – Integrity Rules – Theoretical Relational Languages. Database Design: Data Modelling and Normalization: Data Modeling – Dependency –Normal forms – Dependency Diagrams – De –normalization.	1	1
Instructional Hours			15
II	Oracle9i: Oracle9i an introduction – SQL –SQL *Plus Commands – Errors & Help – Alternate Text Editors. Oracle Tables. DDL: Naming Rules and conventions – Data Types – Constraints – Creating Oracle Table – Displaying Table Information – Altering an Existing Table – Dropping, Renaming, Truncating Table – Table Types – Spooling – Error codes.	1	3,4
Instructional Hours			15

III	Working with Table: Data Management and Retrieval: DML – Adding a new Row/Record – Updating and Deleting an Existing Rows/Records – Retrieving Data from Table -Restricting Data with WHERE clause – Sorting – Revisiting Substitution Variables – DEFINE command – CASE structure. Functions and Grouping: Built-in functions – Grouping Data. Multiple Tables: Joins and Set operations: Join – Set operations	1	5,6
Instructional Hours			15
IV	PL/SQL: A Programming Language: History – Fundamentals – Block Structure – Comments – Data Types – Declaration – Assignment operation – Bind variables – Substitution Variables – Printing – Arithmetic Operators. Control Structures and Embedded SQL: Control Structures – Nested Blocks – SQL in PL/SQL – Data Manipulation – Transaction Control statements. PL/SQL Cursors and Exceptions: Cursors – Implicit & Explicit Cursors and Attributes – Cursor FOR loops – SELECT...FOR UPDATE – WHERE CURRENT OF clause – Cursor with Parameters – Cursor Variables – Exceptions – Types of Exceptions.	1	10, 11&12
Instructional Hours			15
V	PL/SQL Composite Data Types: Records – Tables. Named Blocks: Procedures – Functions – Packages –Triggers –Data Dictionary Views	1	13,14
Instructional Hours			15
Total Hours			75

Text Book(s):

1. NileshShah ,**Database Systems Using Oracle**, 2nd edition, PHI.
2. Abraham Silberschatz, Henry F.Korth, S. Sudarshan , Database system Concepts , 3rd Edition, McGraw – Hill Companies, inc.

Reference Book(s):

1. Arun Majumdar & Pritimoy Bhattacharya,**Database Management Systems**, TMH, 2007.
2. Gerald V. Post ,**Database Management Systems**, 3rd Edition, TMH.

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	M	M	M	M	M
CO 2	M	H	H	M	M
CO 3	M	H	H	H	M
CO 4	M	H	H	H	H
CO 5	M	H	S	S	S

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	L	L	L	H	-	-	-	-	-	H
CO 2	H	L	H	H	-	-	-	-	-	H
CO 3	H	M	H	H	-	-	-	-	--	H
CO 4	H	H	H	H	--	--	--	-	-	H
CO 5	H	H	H	H	-	-	-	-	-	H

S- Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
M. Sheela New sheeba	P.K. Manoj Kumar		

विषय क्रमांक	शीर्षक		
18U1HIN101	भाग-I हिंदी		
सत्र : I	क्रेडिट श्रेय : 4	CIA:25 Marks	ESE:75Marks

(Common to all UG Programmes)

कोर्स लक्ष्य : छात्र-छात्राओं में राष्ट्रीय भावना का विकास करना तथा राष्ट्रभाषा हिंदी एवं उससे संबंधित साहित्य की जानकारी प्रदान करना

कोर्स परिणाम : 1. सामाजिक, सांस्कृतिक और राजनैतिक परिवेश से छात्र. साहित्य के माध्यम से बोधवान होंगे।
2. व्याकरण के शिक्षण के माध्यम से छात्रों में शुद्ध भाषा में बोलने की क्षमता को विकसित होगी।
3. अंतर्राष्ट्रीय भाषा अंग्रेजी से राष्ट्रभाषा हिंदी में सामग्री का अनुवाद करके छात्र हिंदी की ज्ञान संपदा बढ़ाने में कामयाब होंगे।
4. विविध अनुशासनों में अनुवादों को सुचारु बनाने के लिए पारिभाषिक शब्दावली का ज्ञान होगा।

के द्वारा दिया गया अध्ययन विषयवस्तु : हिंदी

निर्देशात्मक घंटे / सप्ताह : 05

इकाई	विवरण	निर्देशात्मक घंटे
I	लडाई-सर्वश्वरदयाल सक्सेना	20
II	एकांकी संग्रह – 1. शिवाजी का सच्चा स्वरूप (सेठ गोविन्ददास) 2. माँ (विष्णु प्रभाकर) 3. घोंसले 4. रीढ़ की हड्डी (जगदीशचन्द्र माथुर) 5. दूसरा दिन (कंचलता सब्बरलाल)	20
III	व्याकरण : संज्ञा, सर्वनाम, विशेषण, क्रिया, वचन, लिंग, काल, वाच्य, प्रत्यय, उपसर्ग, 'ने' का प्रयोग	15
IV	अनुवाद : अंग्रेजी-हिंदी (अनुवाद अभ्यास-3) (1-15)	10
V	पारिभाषिक शब्दावली	10
		कुल घंटे 75

पाठ्यपुस्तकः

1. लडाई : सर्वेश्वरदयाल सक्सेना
2. एकांकी संग्रह
3. अनुवाद अभ्यास-३, दक्षिण भारत हिंदी प्रचार सभा, चेन्नै-17.
4. आलेखन व टिप्पणी

संदर्भ ग्रंथ :

1. डॉ. एन.ई. विश्वनाथ अय्यर, अनुवाद कला, पब्लिशर, संस्करण 2000
2. भोलानाथ तिवारी, अनुवाद विज्ञान, संस्करण 2000
3. रामदेव, व्याकरण प्रदीप। प्रकाशन : हिंदी भवन, 36, टागौर टाउन, इलहाबाद -2
4. नूतन गद्य संग्रह, सुमित्रा प्रकाशन, सुमित्रा निवास, 16/4 हास्टिंग्स रोड, इलहाबाद -211 001. संस्करण 2006

आकलन के लिए उपयुक्त अंक (25 अंक)

सीआईए. I	सीआईए. II	सीआईए. II	असाईनमेंट	संगोष्ठी	उपस्थिति	कुल
5	5	6	3	3	3	25

पाठ्यक्रम द्वारा डिज़ाइन किया गया	एच.ओ.डी. द्वारा सत्यापित	के द्वारा जांचा गया	द्वारा अनुमोदित

विषय क्रमांक	शीर्षक		
18U1HIN202	भाग-I हिंदी		
सत्र : II	क्रेडिट : 4	CIA: 25 Marks	ESE: 75 Marks

(Common to all UG Programmes)

कोर्स लक्ष्य : भारतीयता की साहित्य के माध्यम से पहचान कराना। कहानी के माध्यम से समकालीन समय के सच की पहचान कराना। हिंदी से अंग्रेजी में अनुवाद के माध्यम से भारतीय ज्ञान संपदा को अंतर्राष्ट्रीय स्तर तक पहुँचाने में छात्र को समर्थ बनाना। दैनन्दिन की बातचीत में हिंदी का निर्बाध प्रयोग करने में छात्र को सक्षम बनाना।

कोर्स परिणाम :

- छात्रों में साहित्यिक अभिरुचि के साथ सामाजिक बोध बढ़ेगा। पत्राचार के क्षेत्र में वे स्वावलम्बी हो सकेंगे।
- भारतीय भाषा के ज्ञान को विदेश तक पहुँचाने के क्षेत्र में क्षमता हासिल करेंगे।
- राष्ट्रभाषा हिंदी से अंतर्राष्ट्रीय भाषा अंग्रेजी में सामग्री का अनुवाद करके छात्र हिंदी की ज्ञान संपदा बढ़ाने में कामयाब होंगे।
- रोज़मरा जीवन में हिंदी को बोल पाने में कामयाब होंगे।

के द्वारा दिया गया अध्ययन विषयवस्तु : हिंदी

निर्देशात्मक घंटे / सप्ताह : 05

इकाई	विवरण	निर्देशात्मक घंटे
I	आधुनिक काव्य : रश्मि रथी, रामधारीसिंह दिनकर	25
II	कहानी – 1. पूस की रात (प्रेमचन्द), 2. आकाशदीप (जयशंकर प्रसाद) 3. अकेली (मन्नू भंडारी), 4. खेल (जैनेन्द्र कुमार) 4. सच बोलने की भूल (यशपाल) 5. चीफ की दावत (भीष्म साहनी) 6. आरोहण (संजीव) 7. सलाम (ओमप्रकाश वाल्मीकि)	20
		निर्देशात्मक घंटे

III	पत्र लेखन : (सरकारी पत्र, निजी पत्र, संपादक को पत्र, ज्ञापन, परिपत्र)		
		निर्देशात्मक घंटे	10
IV	अनुवाद : हिंदी से अंग्रेजी		
		निर्देशात्मक घंटे	10
V	बोलचाल हिंदी – 1. साक्षात्कार 2. अध्यापक-विद्यार्थी 3. ग्राहक-दूकानदार 4. डॉक्टर-मरीज 5. मुसाफिर-यात्री		
		निर्देशात्मक घंटे	10
		कुल घंटे	75

पाठ्यपुस्तक :

1. रामधारीसिंह दिनकर, रश्मि रथी।
2. कहानी
3. अनुवाद अभ्यास-3, (दक्षिण भारत हिंदी प्रचार सभा)
4. आदर्श पत्र लेखन
5. व्याकरण

संदर्भ ग्रंथ :

1. प्रोफ. नीरज एम., प्रामाणिक आलेखन और टिप्पणी, राजपाल एंड सन्स, काश्मीर गेट, नई दिल्ली।
2. नीलम कपूर, प्रयोजनमूलक हिंदी, श्री नटराज प्रकाशन, साउथ गारडी, नई दिल्ली-2
3. डॉ. मधुधवन, नवीन एकांकी संग्रह, सुमित्रा प्रकाशन, अशोक नगर, अलहाबाद-1

आकलन के लिए उपयुक्त अंक (25 अंक)

सीआईए. I	सीआईए. II	सीआईए. III	असाईनमेंट	संगोष्ठी	उपस्थिति	कुल
5	5	6	3	3	3	25

पाठ्यक्रम द्वारा डिज़ाइन किया गया	एच.ओ.डी. द्वारा सत्यापित	के द्वारा जांचा गया	द्वारा अनुमोदित

Course Code	Title		
18U3CKC408	Core Paper XI: Computer Networks (Common to CS,CA,CT,IT)		
Semester - IV	Credits - 4	CIA:25 Marks	ESE:75 Marks

Course Objective:

To inculcate knowledge on Networking concepts and technologies like wireless, Broadband and Bluetooth.

Course Outcomes (CO):

CO1	Understand about network hardware, software and uses of computer networks
CO2	Understand Guided Transmission Media, Wireless Transmission, and Communication
CO3	Understand error detection and correction, elementary data link protocol
CO4	Apply various Transport Protocols and Routing algorithms
CO5	Understand the concept of DNS and Cryptography

Offered by: Computer Applications**Course Content****Instructional Hours/Week: 6**

Unit	Description	Text Book	Chapter
I	Uses of computer networks: Business Applications- Home Applications - Mobile Users - and Social Issues. Network Hardware: Personal Area Networks - Local Area Networks - Metropolitan Area Networks - Wide Area Networks, Internetworks. Network software: Protocol Hierarchies - Design Issues for the Layers - Connection-Oriented Versus Connectionless Service - Service Primitives - the Relationship of Services to Protocols - Reference models: The OSI Reference Model - The TCP/IP Reference Model- A Comparison of the OSI and TCP/IP Reference Models.	1	1
Instructional Hours			18
II	Physical Layer - Guided Transmission Media: Magnetic Media – Twisted Pair – Coaxial Cable – Fiber Optics. Wireless Transmission: Electromagnetic Spectrum –Radio Transmission – Microwave Transmission – Infrared and Millimeter Waves – Light Waves. Communication Satellites: Geostationary - Medium-Earth Orbit - Low Earth-orbit Satellites – Satellites versus Fiber.	1	2
Instructional Hours			18
III	Data link Layer: Services Provided to the Network Layer – Framing- Error Control - Flow Control. Error detection and Correction: Error-Correcting Codes - Error-Detecting Codes. Elementary data link Protocols: A Utopian Simplex Protocol- A Simplex Stop-and-Wait Protocol for an Error-Free Channel- A Simplex Stop-and-Wait Protocol for a Noisy Channel. Sliding Window Protocols: One-Bit sliding window protocol – A protocol using Go-Back-N – A Protocol using Selective Repeat.	1	3
Instructional Hours			18

IV	Network layer: Routing algorithm -The Optimality Principle, Shortest Path Algorithm, Flooding, Distance Vector Routing, Link State Routing, Hierarchical Routing, Broadcast Routing, Multicast Routing, Anycast Routing, Routing for Mobile Hosts, Routing in Ad Hoc Networks, Transport layer: Elements of transport protocols -Addressing, Connection Establishment, Connection Release, Error Control and Flow Control, Multiplexing, Crash Recovery The Internet Transport Protocols UDP : Introduction to UDP. TCP - Introduction to TCP, The TCP Service Model, The TCP Protocol, The TCP Segment Header, TCP Connection Establishment, TCP Connection Release, TCP Connection Management Modeling, TCP Sliding Window, TCP Timer Management, TCP Congestion Control.	1	5,6
Instructional Hours			18
V	Application layer :DNS—The Domain Name System, The DNS Name Space, Domain Resource Records, Name Servers, Electronic mail -Architecture and Services, The User Agent, Message Formats, Message Transfer, Final Delivery, Network Security: Cryptography -Introduction to Cryptography, Substitution Ciphers, Transposition Ciphers, One-Time Pads, Two Fundamental Cryptographic Principles.	1	7,8
Instructional Hours			18
Total Hours			90

Text Book(s):

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

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	M	M	M
CO2	M	M	M	M	M
CO3	H	H	H	H	H
CO4	H	H	H	H	H
CO5	H	H	H	S	S

S - Strong; H-High; M-Medium; L-Low

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	S	H	M	M	H	-	-	-	-	-
CO 2	S	M	H	M	H	-	-	-	-	-
CO 3	H	H	H	H	M	-	-	-	-	-
CO 4	M	H	H	S	M	-	-	-	-	-
CO 5	H	H	H	L	M	-	-	-	-	-

Course Designed by	Verified by HOD	Checked by	Approved by
N.P. Shiju	Dr. V.Chitraa		

Course Code	Title		
19U3CKC306	Core Paper VIII Java Programming		
Semester: III	Credits: 4	CIA : 25 Marks	ESE: 75 Marks

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 Outcomes (CO):

CO1	Remember the fundamental concepts of Object-oriented Programming
CO2	Understand the different data types and statements
CO3	Apply the principles of packages and interfaces
CO4	Illustrate the Concepts of Exception Handling and Multithreading.
CO5	Develop applications using Applet and AWT

Offered by: Computer Science

Course Content**Instructional Hours / Week: 5**

Unit	Description	Text Book	Chapter
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			15
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			15
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 Package-Hiding Classes-Static Import.	1	10,11 & 12
Instructional Hours			15

IV	Exception Handling: Fundamentals-Hierarchy of the Exception Classes- Types of Exception –Exception Class-Uncaught Exceptions-Handling Exception-User Defined Exception. 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.	2	10 & 11
		Instructional Hours	15
V	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. Applets: Applet Basics-Applet Life Cycle-Running Applets-Methods of the Applet Class-Graphics Class-Color Class-Font Class-Limitations of Applets. Abstract Window Toolkit: AWT-AWT Classes-Hierarchy of Classes in Java.awt Package-Control Fundamentals-Component Class-Basic Component Classes-Container Class.-Various Container Class.	2	16,18& 19
		Instructional Hours	15
		Total Hours	75

Text Book(s):

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.

Reference Book(s):

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

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Quiz	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	H	M	M	H
CO 2	H	H	M	H	H
CO 3	H	H	H	M	M
CO 4	H	H	H	H	H
CO 5	H	H	H	H	M

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	S	L	M	S	S	-	-	-	-	-
CO 2	H	H	H	M	H	-	-	-	-	-
CO 3	H	H	H	H	M	-	-	-	-	-
CO 4	S	H	H	H	M	-	-	-	-	-
CO 5	H	M	M	M	S	-	-	-	-	-

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Mrs. D. J. Anitha Merlin	Dr. N. Kavitha		

Course Code	Title		
20U3CAC507	Core Paper XIV: Visual Programming		
Semester: V	Credits: 4	CIA: 25 Marks	ESE:75 Marks

Course Objectives:

- To understand the concept of GUI Design Tool, also to make them aware of controls in VB.NET.
- Code programs and develop interface using Visual Basic .NET.

Course Outcomes (CO):

CO1	Remember the .Net Framework and Controls
CO2	Understand the Structures and OOPs Concepts
CO3	Develop and implement windows, console and web-based application
CO4	Examine webpage, file management, ADO.Net for Database Connection
CO5	Understand and ability to design ASP Page

Offered by: Computer Applications

Course Content

Instructional Hours/Week: 5

Unit	Description	Text Book	Chapter
I	What is .Net? – An Overview of the .Net Framework- The Common Language Runtime – The.Net Class Framework. Introduction VB.Net: Visual Studio.Net – Working with VB.Net – Variables and Types: Difference of value and Reference Types – Value Types – explicit Conversion – Reference Types.	1	1,2,4
	Instructional Hours		15
II	Object Syntax Introduction: Object Oriented Terminology – Working with objects- Creating Classes – Advanced Concepts. Inheritance and Interface: Inheritance – Multiple Inheritance - Abstraction – Encapsulation – Polymorphism – What is Namespace? - Exception in .Net – Structured Exception Handling Keywords in VB.Net.	1	5,6,7,8,9
	Instructional Hours		15
III	Windows Forms: Forms as classes – Forms at Design Time – Forms at Runtime - Controls – Data Access with ADO.Net: why do we need ADO.Net? – The ADO.Net Architecture - .Net Data Provider – The Dataset Component.	1	11,12
	Instructional Hours		15

IV	What is ASP.Net? – Setting up for ASP.Net – An Overview Programming Basics – Basics of Programming – ASP.Net Data types – Operators – Common ASP.Net Page Syntax – Built-in ASP.Net objects and interactivity- The Response object – The ASP Server object.	2	1,2,3
Instructional Hours			15
V	Web Forms and ASP.Net – Web Forms – ASP.Net and Configuration – ASP.Net and state- The Application Scope – ASP Sessions – The Session Object – The Scripting Object Model – Active Server Components and Controls– More Active Server Component.	2	4,5,6
Instructional Hours			15
Total Hours			75

Text Book(s):

1. Bill Evjen, Billy Hollis, Rockford Lhotka, Tim McCarthy, Jonathan Pinnock, Rama Ramachandran, Bill Sheldon, “Professional VB.Net 2003”, Wiley India Edition, Reprint 2007.
2. Dave Mercer, “ASP.Net: A Beginner’s Guide”, Tata McGraw Hill, Fifth Reprint 2008.

Reference Book(s):

1. Peter Aitken’s “Visual Basic .Net Programming”, Dreamtech Press, Reprint 2004.
2. Steven Holzner, “Visual Basic .Net Programming”, Dreamtech Press, 2005 Edition.
3. Mridula Parihar, “ASP.Net Bible”, Wiley India Edition, Reprint 2007.
4. George Shepherd, “Microsoft VB.Net 2.0”, Prentice Hall, 2005.

Tools for Assessment (25 Marks)

CIA I	CIA 2	CIA 3	Assignment	Seminar / Quiz	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	M	M	M
CO2	M	M	H	H	H
CO3	H	H	H	H	H
CO4	H	H	H	H	H
CO5	S	S	H	H	S

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	L	L	L	H	-	-	-	-	-	H
CO 2	H	L	H	H	-	-	-	-	-	H
CO 3	H	M	H	H	-	-	-	-	--	H
CO 4	H	H	H	H	--	--	--	-	-	H
CO 5	H	H	H	H	-	-	-	-	-	H

S-Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by	Checked by	Approved by
Mr.D.Sakthivel	Mr.D.Sakthivel		

Course Code	Title		
20U3CAV612	Core Paper: XVIII Project and 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 Outcomes (CO):

CO1	Remember the fundamental concepts of algorithm and designs
CO2	Understand the optimal methods and Software Engineering concepts to be applied
CO3	Apply the knowledge and what they learned
CO4	Analyze the Economical and Technical feasibility
CO5	Develop software based applications and Deployment of software

Offered by: Computer Applications**Course Content****Instructional Hours/Week: 6**

<p>Project work & Viva Voce</p> <p>Project Guidelines</p> <p>Project shall be Application / System Oriented/ Web enabled online applications</p> <p>Individual project is permissible. There should be no team project.</p> <p>Report should be in the following sequence</p> <ul style="list-style-type: none"> ▪ Declaration ▪ Certificate from the company/organization ▪ Bonafide Certificate <p>Guidelines to prepare documentation:</p> <ul style="list-style-type: none"> ▪ The cover should be in the silver gray colour and hard binding ▪ Font type : Times New Roman ▪ Font size : 12 ▪ Sub heading size :14 ▪ Heading size :16 ▪ Margin : top,bottom,right-2.5 cm, left -3 cm ▪ Line spacing between two lines - 1.5 ▪ Every paragraph should start with one tab space.
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Sample Templates

Title of the Project

A project report submitted to the Bharathiar University in the partial fulfillment
of the requirements for the award of the degree of

BACHELOR OF COMPUTER APPLICATIONS

Submitted by

Name of the Student

(Reg.No)

Under the Guidance of

Guide Name (Designation)



NEHRU ARTS AND SCIENCE COLLEGE

(Autonomous)

(Reaccredited by NAAC with “A” Grade, ISO 9001-2008 & ISO 14001 : 2004 Certified)

RECOGNIZED BY UGC & AFFILIATED TO BHARATHIAR UNIVERSITY

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

Month & year

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2.2. Proposed system	
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2.3. System specification	
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3. SYSTEM DESIGN	
3.1 Design Notations	
3.1.1 Data flow diagram	
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3.2.1 Input design	
3.2.2 Database design	
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Declaration

I, (*Student Name* , *Reg.No*) hereby declare that the project entitled (*Title Of The Project*) submitted to Bharathiar University in partial fulfillment for the award of the Bachelor Degree of Computer Applications is an independent project report done by me during the project duration of the period of study in Nehru Arts and Science College, Coimbatore (Recognized by UGC &Affiliated to Bharathiar University)under the guidance of (*Name Of The Guide*) during the academic year 2021-22.

PLACE :
DATE :

Signature of the student

DEPARTMENT OF COMPUTER APPLICATIONS

NEHRU ARTS AND SCIENCE COLLEGE

(Reaccredited by NAAC with “A” Grade, ISO 9001-2008 & ISO 14001: 2004 Certified)

RECOGNIZED BY UGC & AFFILIATED TO BHARATHIAR UNIVERSITY

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



CERTIFICATE

This is to certify that the project report entitled (*Title Of The Project*) , is a bonafied work done by (*Student Name , Reg. No*) in partial fulfillment of the requirement of the award of the degree of Bachelor of Computer Applications, Bharathiar University, Coimbatore during the academic year (Academic Year).

Internal Guide

Head of the Department

Certify that we examined the Candidate in the Project Work / Viva-Voce Examination held at NEHRU ARTS AND SCIENCE COLLEGE on _____

Internal Examiner

External Examiner
Total Hours: 90

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	M	M	M
CO2	H	H	H	H	H
CO3	H	H	H	H	H
CO4	H	H	H	H	H
CO5	H	H	H	S	S

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	L	L	L	L	-	-	H	H	H	-
CO 2	H	L	H	H	-	-	H	H	H	-
CO 3	H	M	H	H	-	-	H	H	H	-
CO 4	H	H	H	H	--	--	H	H	H	-
CO 5	H	H	H	H	-	-	H	H	H	-

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HOD	Checked by	Approved by

Course Code	Title		
18U1MAL101	PART-I MALAYALAM -I		
Semester-I	Credits - 4	CIA:25 Marks	ESE:75 Marks

(Common to all UG Programmes)

Course Objective : ആധുനിക കാലഘട്ടങ്ങളിലെ കഥകളേയും കഥകാരൻമാരേയും കുറിച്ചുള്ള അവബോധം

Course Outcomes :

CO1	ചെറുകഥകളും കഥാകാരൻമാരേയും കുറിച്ച് അറിവ് ലഭിക്കുന്നു.
CO2	ഭാഷയുടെ ഉപയോഗക്രമങ്ങളെക്കുറിച്ചുള്ള അറിവ്

Offered by : Malayalam

Course Content

Instructional Hours / Week : 5

Unit	Description	Instructional Hours
I	ചെറുകഥകൾ - കഥാമാലിക	16
II	ചെറുകഥകൾ - കഥാമാലിക	16
III	ചെറുകഥകൾ - കഥാമാലിക	16
IV	പ്രായോഗിക മലയാളം	16
V	ആശയവിപുലനം, പൊതുവായ വിഷയത്തെക്കുറിച്ച് ഉപന്യാസവും വിവർത്തനവും. (ഏകദേശം 100 വാക്കുകൾ)	11
Total Hours		75

പഠനപുസ്തകങ്ങൾ

- 1 ചെറുകഥകൾ - കഥാമാലിക (10 ചെറുകഥകൾ)
2. പന്മന രാമചന്ദ്രൻനായർ - നല്ല ഭാഷ - വാസുദേവ ഭട്ടതിരി - നല്ല മലയാളം

സൂചനാഗ്രന്ഥങ്ങൾ

1. എം. അച്യുതൻ - ചെറുകഥ - ഇന്നലെ, ഇന്ന് (ഡി.സി. ബുക്സ്, കോട്ടയം)
2. കെ.എം. ജോർജ്ജ് - സാഹിത്യചരിത്രം പ്രസ്ഥാനങ്ങളിലൂടെ (ഡി.സി. ബുക്സ്, കോട്ടയം)
3. സുകുമാർ അഴീക്കോട് - മലയാള സാഹിത്യ വിമർശനം (ഡി.സി. ബുക്സ്, കോട്ടയം)
4. എരുമേലി പരമേശ്വരൻ പിള്ള - മലയാളസാഹിത്യം കാലഘട്ടങ്ങളിലൂടെ (ഡി.സി. ബുക്സ്, കോട്ടയം)

Tools for Assessment (25 Marks)

CIA I	CIA II	Model	Assignment	Seminar	Attendance	Total
5	5	6	3	3	3	25

Course Designed by	Verified by	Checked by	Approved by

Course Code		Title	
18U1MAL202	PART-I MALAYALAM -II		
Semester-II	Credit-4	CIA:25 Marks	ESE:75 Marks

(Common to all UG Programmes)

Course Objective: വിദ്യാർത്ഥികളിൽ വായനാശീലം വർദ്ധിപ്പിക്കുക

Course Outcomes:

CO 1	മലയാള ഭാഷയുടെ ഉൽപത്തിയേയും വികാസത്തേയും കുറിച്ചുള്ള അറിവ്
CO 2	മലയാള സാഹിത്യത്തിൽ നോവലുകൾക്കുള്ള സ്ഥാനം

Offered by : Malayalam

Course Content

Instructional Hours / Week : 5

Unit	Description	Instructional Hours
I	നോവൽ - ആഴ്ചജീവിതം	15
II	നോവൽ - ആഴ്ചജീവിതം	15
III	നോവൽ - ആഴ്ചജീവിതം	15
IV	പ്രായോഗിക മലയാളം ഭാഗം 2	15
V	പ്രായോഗിക മലയാളം ഭാഗം 2	15
Total Hours		75

പഠനപുസ്തകങ്ങൾ

1. ബെന്യാമിൻ - ആഴ്ചജീവിതം (ഗ്രീൻ ബുക്സ്, കോട്ടയം)
2. കേരളപാണിനീയം - ഏ.ആർ. രാജരാജവർമ്മ (ഡി.സി. ബുക്സ്, കോട്ടയം)

സൂചനാഗ്രന്ഥങ്ങൾ

1. പ്രൊ. എൻ. കുഷ്ണപിള്ള - കൈരളിയുടെ കഥ (ഡി.സി. ബുക്സ്, കോട്ടയം)

2. ഡോ. പത്മന രാമചന്ദ്രൻനായർ - സമ്പൂർണ്ണ മലയാള സാഹിത്യചരിത്രം
(ഡി.സി. ബുക്സ്, കോട്ടയം)
3. ഡോ. കെ.എം. ജോർജ്ജ് - ആധുനിക മലയാള സാഹിത്യചരിത്രം
(പ്രസ്ഥാനങ്ങളിലൂടെ) (ഡി.സി. ബുക്സ്, കോട്ടയം)
4. എരുമേലി പരമേശ്വരൻപിള്ള - മലയാള സാഹിത്യം - കാലഘട്ടങ്ങളിലൂടെ
(ഡി.സി. ബുക്സ്, കോട്ടയം)

Tools for Assessment (25 Marks)

CIA I	CIA II	Model	Assignment	Seminar	Attendance	Total
5	5	6	3	3	3	25

Course Designed by	Verified by	Checked by	Approved by

Course Code	Title		
19U4CAZ604	Skill Based Paper IV: Practical in R Programming		
Semester - VI	Credits - 3	CIA: 30 Marks	ESE: 45 Marks

Course Objective:

To enable the students to gain an in-depth understanding of data structure used in R and learn to import/export data using R.

Course Outcomes (CO):

CO1	Remember various data types, conditional and looping statements
CO2	Understand about R-studio, workspace setup and the various R packages
CO3	Apply data Structures: Vectors, Lists, Matrices and Arrays and Factors and Data Frame in R language and manipulate
CO4	Analyze the feasible logics
CO5	Evaluate the optimal solution of the problem

Offered by: Computer Applications**Course Content****Instructional Hours/Week: 6**

S. No	List of Practical
1	Write a Program to generate Random Number using Standard Deviation
2	Write a Program to find Minimum and Maximum number from given input.
3	Write a Program to check whether the given number is Armstrong Number or not.
4	Write a Program to Convert Decimal number into Binary number using Recursion.
5	Write a Program to find the sum of 'n' natural numbers
6	Write a Program to create a list and to append, modify and delete the elements in the list.
7	Write a Program to create a matrix addition and subtraction.
8	Write a Program to check whether the given number is palindrome or not using function.
9	Write a Program to create the Data Frame and extract the value.
10	Write a Program to Find Sum, Mean and Product of Vector
11	Write a Program to Sample from a Population
12	Write a Program to Sort a Vector
	Total Hours 90

Tools for Assessment (30 Marks)

Logical Thinking	Program Execution	Test I	Test II	Observation	Attendance	Total
5	5	5	5	7	3	30

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	M	M	M
CO2	H	H	H	H	H
CO3	H	H	H	H	H
CO4	H	H	H	H	H
CO5	H	H	H	S	S

S - Strong; H-High; M-Medium; L-Low

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	L	L	L	H	-	-	-	-	-	H
CO 2	H	L	H	H	-	-	-	-	-	H
CO 3	H	M	H	H	-	-	-	-	--	H
CO 4	H	H	H	H	--	--	--	-	-	H
CO 5	H	H	H	H	-	-	-	-	-	H

Course Designed by	Verified by HOD	Checked by	Approved by
D.Sakthivel	Dr.V.Chitraa		

Course Code	Title		
20U3CAC508	Core Paper XV: Problem Solving with Python		
Semester: V	Credits 3	CIA:20 Marks	ESE:55 Marks

Course Objective: To acquire programming skills in Python and to develop ability in writing applications using Python.

Course Outcomes (CO):

CO1	Interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements.
CO2	Understand about how to program python using strings and functions .
CO3	Apply the methods to create and manipulate Python programs by utilizing the data structures like lists, dictionaries, tuples and sets.
CO4	Able to write programs by applying the commonly used operations involving file systems and regular expressions.
CO5	Develop applications by applying the Object-Oriented Programming concepts such as encapsulation, inheritance and polymorphism .

Offered by: Computer Applications

Course Content

Instructional Hours/Week: 5

Unit	Description	Text Book	Chapter
I	Introduction : Introduction to Python, Origin, Comparison, Identifiers, Keywords, Statements and Expressions, Variables, Operators, Precedence and Associativity, Data Types, Indentation, Comments, Reading Input, Print Output, Type Conversions, The type() Function and Is Operator, Dynamic and Strongly Typed Language, Control Flow Statements: The continue and break Statements, Exception Handling, Functions: Built-In Functions, User defined Functions, Scope and Lifetime of Variables, Default Parameters, Keyword Arguments, Command Line Arguments.		
Instructional Hours			15
II	Python Objects: Python Objects, Standard Types, Other Built-in Types, Internal Types, Standard Type Operators, Standard Type Unsupported Types. Introduction to Numbers, Integers, Floating Point Real Numbers, Complex Numbers, Operators, Strings: Creating Strings, Basic String Operations, String Methods, Formatting Strings, Lists: Creating Lists, Basic List Operations, Indexing and Slicing in Lists, Built-In Functions Used on Lists, List Methods, Turtle Graphics – Turtle attributes.		

		Instructional Hours	15
III	Dictionaries : Creating Dictionary, Accessing and Modifying key:value Pairs in Dictionaries, Built-In Functions Used on Dictionaries, Dictionary Methods, The del Statement, Tuples and Sets :Creating Tuples, Basic Tuple Operations, Indexing and Slicing in Tuples, Built-In Functions Used on Tuples, Relation between Tuples and Lists, Relation between Tuples and Dictionaries, Tuple Methods, Using zip() Function, Sets, Set Methods, Traversing of Sets, Frozenset.		
		Instructional Hours	15
IV	Files : Types of Files, Creating and Reading Text Data, File Methods to Read and Write Data, Reading and Writing Binary Files, The Pickle Module, Reading and Writing CSV Files, Python os and os.path Modules, Regular Expression Operations , Using Special Characters, Regular Expression Methods, Named Groups in Python Regular Expressions, Regular Expression with glob Module. Special Symbols and Characters for REs, REs and Python		
		Instructional Hours	15
V	Object-Oriented Programming : Classes and Objects, Creating Classes in Python, Creating Objects in Python, The Constructor Method, Classes with Multiple Objects, Class Attributes versus Data Attributes, Encapsulation, Inheritance, The Polymorphism.		
		Instructional Hours	15
		Total Hours	75

Text Book(s):

1. Y.Daniel Liang, “**Introduction to Programming using Python**”, Pearson India, Third Impression, 2018.
2. Charles Dierbach, “Introduction to Computer Science using Python - A computational Problem solving Focus”, Wiley India Edition, 2015.

Reference Book(s):

1. Mark Lutz ,”**Learning Python: Powerful Object-Oriented Programming**”,O’Reilly,Fifth Edition,2013.
2. Wesley J Chun, “**Core Python Applications Programming**”, 3rd Edition, Pearson Education India, 2015

Tools for Assessment (20 Marks)

CIA I	CIA II	Model	Assignment	Seminar/Quiz	Attendance	Total
4	4	5	2	2	3	20

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	M	H	H	H
CO 2	M	H	H	S	H
CO 3	H	H	M	H	H
CO 4	H	S	H	M	H
CO 5	S	H	H	H	M

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	L	L	L	H	-	-	-	-	-	H
CO 2	H	L	H	H	-	-	-	-	-	H
CO 3	H	M	H	H	-	-	-	-	--	H
CO 4	H	H	H	H	--	--	--	-	-	H
CO 5	H	H	H	H	-	-	-	-	-	H

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Dr.K.Selvavinayaki	Dr.K.Selvavinayaki		

Course Code	Title		
20U3CAP303	Core Paper IX : Practical in Java Programming		
Semester: III	Credits: 4	CIA : 40 Marks	ESE: 60 Marks

Course Objective:

To enable the students to develop problem solving skills and programming ability in Java Language

Course Outcomes (CO):

CO1	Develop the applications using programming concepts
CO2	Demonstrate the creation of objects, classes, methods and inheritance
CO3	Construct Java programs using Exception Handling
CO4	Able to do the AWT controls and Mouse Events in Java
CO5	Implement the concepts to solve the real word problems

Offered by: Computer Applications

Course Content

Instructional Hours / Week: 6

S. No.	List of Practical
1	Write a Java Applications to extract a portion of a character string and print the extracted String.
2	Write a Java Program to implement the concept of multiple inheritance using Interfaces.
3	Write a Java Program to create an Exception called payout-of-bounds and throw the Exception.
4	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.
5	Write a Java Program to draw several shapes in the created windows.
6	Write a Java Program to create a frame with four text fields 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.
7.	Write a Java Program to demonstrate the Multiple Selection List-box.
8	Write a Java program to import classes from user defined package and creating package.
9	Write a Java Program to create Menu Bars and pull-down menus.
10.	Write a Java Program to create frames which respond to the mouse clicks. For each events with mouse such as mouse up, mouse down, etc., the corresponding message to be displayed.
11	Write a Java Program to draw circle, square, ellipse and rectangle at the mouse click positions.
12	Write a Java Program which open an existing file and append text to that file.
	Total Hours : 90

Tools for Assessment (40 Marks)

Logical Thinking	Program Execution	TEST I	TEST II	Observation	Attendance	Total
5	5	10	10	7	3	40

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	S	H	H	M
CO 2	H	S	H	H	M
CO 3	H	S	H	H	H
CO 4	H	S	H	H	H
CO 5	H	S	H	H	H

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	M	M	M	H	H	-	-	-	-	-
CO 2	H	H	M	M	H	-	-	-	-	-
CO 3	H	H	H	H	S	-	-	-	-	-
CO 4	S	H	H	H	S	-	-	-	-	-
CO 5	S	L	M	M	S	-	-	-	-	-

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HoD	Checked by	Approved by
Mrs. N. P. Shiju	Dr. Selvavinayaki		

Course Code	Title		
20U3CAP405	Core Paper XII : Practical in Oracle Programming		
Semester: IV	Credits: 4	CIA : 40 Marks	ESE: 60 Marks

Course Objective:

To make the students to understand Relational Database Management System concepts using Oracle and able to do the various operations on Tables.

Course Outcomes (CO):

CO1	Remember to transform an information model into a relational database schema and to use a data definition language and/or utilities to implement the schema using a RDBMS.
CO2	Understand the processes of Database Development and Administration using SQL and PL/SQL.
CO3	Apply the Programming and Software Engineering skills and techniques using SQL.
CO4	Analyze the relational data model with optimal and feasible solutions
CO5	Evaluate the Optimal Solutions

Offered by: Computer Applications**Course Content****Instructional Hours / Week: 6**

Prog. No.	List of Programs
1	Create a table for Employee details with Employee Number as primary key and following fields: Name, Designation, Gender, Age, Date of Joining and Salary. Insert at least ten rows and perform various queries using any one Comparison, Logical, Set, Sorting and Grouping operators.
2	Create tables for library management system which demonstrate the use of primary key and foreign key. Master table should have the following fields: Accno, Title, Author and Rate. Transaction table should have the following fields: User id, Accno, Date of Issue and Date of Return. Create a Report(Select verb) with fields Accno, Title, Date of Issue for the given Date of Return with column formats.
3	Write a PL/SQL to update the rate field by 20% more than the current rate in inventory table which has the following fields: Prono, ProName and Rate. After updating the table a new field (Alter) called for Number of item and place for values for the new field without using PL/SQL block.

4	Write a PL/SQL program to check whether given string is palindrome or not
5	Write a PL/SQL program to find factorial of numbers using function and procedure.
6	Create a PL/SQL Program to perform updation using various triggers.
7	Create a database trigger to implement on master and transaction tables which are based on inventory management system for checking data validity. Assume the necessary fields for both tables.
8	Write a PL/SQL to split the student table into two tables based on result (One table for —Pass and another for —Fail). Use cursor for handling records of student table.
9	Write a PL/SQL to raise the exceptions in Bank Account Management table
10	Write a PL/SQL to handle package
11	Write a PL/SQL Cursor for referencing fields in a record
12	Write a PL/SQL trigger for entering mark in the student table
Total Hours	
90	

Tools for Assessment (40 Marks)

Logical Thinking	Program Execution	TEST I	TEST II	Observation	Attendance	Total
5	5	10	10	7	3	40

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	H	H	H	H
CO 2	H	H	H	H	H
CO 3	H	H	H	H	H
CO 4	H	H	H	H	H
CO 5	H	H	H	H	S

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	L	L	L	H	-	-	-	-	-	H
CO 2	H	L	H	H	-	-	-	-	-	H
CO 3	H	M	H	H	-	-	-	-	--	H
CO 4	H	H	H	H	--	--	--	-	-	H
CO 5	H	H	H	H	-	-	-	-	-	H

S- Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
Mrs. R. Pandiammal	Dr. K. Kanagalakshmi		

Course Code		Title	
18U3BAA404	Allied Paper IV: Accounting for Cost and Management		
Semester: IV	Credits: 4	CIA: 25 Marks	ESE:75 Marks

Course Objective:

To enable the students to know the fundamental concepts of Accounting.

Course Outcomes (CO):

CO1	Capable of fixing product price
CO2	Ability to prepare quotations and tenders
CO3	Ability to differentiate Financial, Cost and Management Accounting
CO4	Interpret the Financial Statement

Offered by: Commerce

Course Content

Instructional Hours / Week: 6

Unit	Description	Text Book	Chapter
I	Introduction-Accounting Principles-Banches of Accounting-Accounting rules	1	1
	Journal - Ledger – Subsidiary Books	1	2
	Trial Balance	2	3
Instructional Hours			18
II	Preparation of Final accounts: Trading Account, Profit & Loss Account and Balance Sheet	1	3,4
	Depreciation – Accounting for Methods of providing depreciation – straight line method, Written Down Value method	2	11
Instructional Hours			18
III	Cost Accounts – meaning- elements of cost	4	1
	Preparation of cost sheet (simple problems only)	5	2
Instructional Hours			18
IV	Material cost: stores ledger – FIFO-LIFO- weighted Average, simple Average	5	3
	Management Accounting – meaning- objectives- Management Account with Financial Account, Management Accounting & Cost Accounting	3	1
Instructional Hours			18

V	Budget and Budgetary control – preparation of various budgets- Flexible Budget - Production Budget-Cash Budget-Sales Budget.	3	10
Instructional Hours			18
Total Hours			90

Text Book(s):

1. N.P. Srinivasan and Sakthivel Murugan , **Accounting for Management**, Sultan Chand & Sons, 2012.
2. T.S. Reddy and A. Murthy, **Financial Accounting** , Margham Publications, 2016.
3. Shashi K. Gupta and R.K. Sharma, **Management Accounting**, Kalyani Publishers, 2006.
4. S.P. Jain and KL. Narang , **Cost Accounting**, Kalyani Publishers, New Delhi.Edn.2014.
5. Dr. A. Murthy & Dr. S. Gurusamy, **Cost Accounting** , Vijay Nicole Imprints Private Limited, Chennai. 2014.

Reference Books:

1. T.S Reddy and A. Murthy, **Financial Accounting**, Margham Publications, 2015.
2. T.S Reddy and A. Murthy, **Management Accounting**, Kalyani publishers, 2009.
3. T.S.Grewal, **Double Entry Book Keeping**, Sultan Chand & Sons., 2004.
4. Reddy & Hari Prasad Reddy, **Cost Accounting**, Margham Publications, 2009

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar / Critical Thinking		Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	S	H	H	M
CO 2	H	S	H	H	M
CO 3	H	S	H	H	H
CO 4	H	S	S	S	S
CO 5	S	S	S	S	S

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
	Dr. K. Kanagalakshmi		

Course Code	Title		
19U3MIA303	Allied Paper III : Operations Research		
Semester: III	Credits : 4	CIA: 25 Marks	ESE: 75 Marks

Course Objective:

To enable the students to learn various mathematical applications in industries, decision making for real time environment.

Course Outcome:

CO1	To gain knowledge about the basic concepts of the optimal solutions.
CO2	To understand the concepts of Transportation And Assignment Problem.
CO3	To apply the concepts of various Strategies in Game Theory.
CO4	To analyze the concepts of Queuing Theory.
CO5	To find the Critical Path and expected duration for a project.

Offered by: Mathematics

Course Content

Instructional Hours / Week: 5

Unit	Description	Text Book	Chapter
I	Linear Programming: Mathematical Model assumption of linear Programming	1	2
	Graphical method - Principles of Simplex method, Big-M Method, Duality.	1	3, 4, 5
Instructional Hours			15
II	Transportation And Assignment Problem: Assignment and Traveling Salesman Problem.	1	10, 11
Instructional Hours			15
III	Game Theory: Concept of Pure and Mixed Strategies – Solving 2 x 2 matrix with and without saddle point - n x 2 - 2 x m games, Dominance property	1	17
	Replacement models : Elementary replacement models - Present value - Rate of return - Depreciation - Individual replacement – Group replacement.	1	18
Instructional Hours			15
IV	Queuing Theory (Derivations not included): Definition of waiting line model - Queue discipline - Traffic intensity - Poison arrival – Birth death process -	1	20
	Problem from single server: finite and infinite population model – Problems from multi server: finite and infinite population model.	1	20
Instructional Hours			15

V	PERT & CPM: Network representation - backward pass - Forward pass - computation - Pert Network.	1	21, 22
Instructional Hours			15
Total Hours			75

Text Book(s):

- Kanti Swarup, P.K. Gupta, Man Mohan, **Operations Research**, S. Chand & Sons, 1997.
Unit 1: Chapter 2, 3, 4, Section : 4.1, 4.3, 4.4 (Big-M Method only)
Chapter 5, Section: 5.1, 5.2, 5.3, 5.4, 5.7
Unit II: Chapter 10 Section: 10.1, 10.2, 10.3, 10.5, 10.6 10.8, 10.9, 10.10.
Chapter 11
Unit III: Chapter 17, Section: 17.1 – 17.7.
Chapter 18, Section: 18.1 – 18.3.
Unit IV: Chapter 20, Section: 20.1 – 20.4, 20.6, 20.7, 20.8 (Model I, III, V, VI)
Unit V : Chapter 21
Chapter 22, Section: 22.1, 22.2, 22.3.

Reference Book(s):

- Hamdy A Taha, **Operations Research – An introduction**, Prentice Hall of India PVT.LTD, 8th edition, 2008.
- J. K. Sharma, **Operations Research Theory and Applications**, MacMillan India Ltd, 2008.

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Problem Solving Skill	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4
CO1	H	M	H	H
CO2	M	M	H	H
CO3	M	M	H	H
CO4	M	H	H	M
CO5	H	H	H	M

Course Designed by	Verified by HOD	Checked by	Approved by

Course Code		Title	
20U1FRN101		PART – I FRENCH – I	
Semester - I	Credits: 4	CIA: 25 Marks	ESE: 75 Marks

(Common to all UG Programs except B. Sc. Catering Science and Hotel Management)

Course Objective : To make the students know and understand the value of French language and help them to follow the culture and tradition.

Course Outcomes (CO)

CO1	Empowering reading skill
CO2	Translation

Offered by : The French department

Course Content

Instructional Hours / Week : 5

Unit	Description	Instructional Hours	
I	Bonjour		
		Instructional Hours	15
II	Rencontres		
		Instructional Hours	15
III	100 % questions		
		Instructional Hours	15
IV	Enquête		
		Instructional Hours	15
V	Invitations		
		Instructional Hours	15
		Total Hours	75

Text Book:

1. **CONNEXIONS 1 Methode de Français Niveau 1** – Régine Mérieux Yves Loiseau

Tools for Assessment (25 Marks)

CIA I	CIA II	Model	Assignment	Seminar	Attendance	Total
5	5	6	3	3	3	25

Course designed by	Verified by	Checked by	Approved by

Course Code		Title	
20U1FRN202		PART-I FRENCH -II	
Semester-II	Credit-4	CIA:25 Marks	ESE:75 Marks

(Common to all UG Programmes except B. Sc. Catering Science and Hotel Management)

Course Objective : To make the students know and understand the value of French language and help them to follow the culture and tradition.

Course Outcome:

CO1	Empowering reading skill
CO2	Translation

Offered by: The French Department

Course Content

Instructional Hours / Week : 5

Unit	Description	
I	À table!	
	Instructional Hours	15
II	Rallye	
	Instructional Hours	15
III	Chez moi	
	Instructional Hours	15
IV	Les Vacances	
	Instructional Hours	15
V	Au jour le jour	
	Instructional Hours	15
	Total Hours	75

Text Book:

1. CONNEXIONS 1 Methode de Français Niveau 1 – Régine Mérieux
Yves Loiseau

Tools for assessment (25 marks)

CIA-I	CIA-II	Model	Assignment	Seminar	Attendance	Total
5	5	6	3	3	3	25

Course designed by	Verified by	Checked by	Approved by

Course Code	Title		
20U3CAP509	Core Paper XVI: Practical in Visual Programming		
Semester: V	Credits: 4	CIA : 40 Marks	ESE: 60 Marks

Course Objectives:

- To inculcate the programming algorithm, process, and structure of VB.Net and ASP.Net.
- To demonstrate the connectivity from VB.Net and ASP.Net to MS Access and Oracle.

Course Outcomes (CO):

CO1	Remember the various Controls.
CO2	Understand the methods and properties of Controls.
CO3	Apply the structure to design window based and Web Base Applications.
CO4	Analyze the optimal and feasible solution.
CO5	Evaluate the feasibility of the solution to be implemented.

Offered by: Computer Applications

Course Content

Instructional Hours / Week: 5

Prog. No.	List of Programs
1	Write VB.Net program to develop a calculator with basic operations.
2	Write VB.Net program to create menus in a form using menu editor.
3	Design a form in VB.Net using common dialog control to display the save and open dialog box.
4	Write VB.Net program to maintain student mark list using MS Access
5	Write VB.Net program for a various font application
6	Write VB.Net program to use a tool bar to set editor properties.
7	Write VB.Net program to create and reading text file.
8	Write VB.Net program to implement a binary search using collection class.
9	Design College Website using ASP.Net.
10	Write ASP.Net Program to create online examination system.
11	Write ASP.Net Program to develop website for online mobile shop.
12	Design Online Registration Form using ASP.Net
	Total Hours
	75

Tools for Assessment (40 Marks)

Logical Thinking	Program Execution	TEST I	TEST II	Observation	Attendance	Total
5	5	10	10	7	3	40

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	H	H	H	H	H
CO 2	H	H	H	H	H
CO 3	H	H	H	H	H
CO 4	S	S	S	S	S
CO 5	S	S	S	S	S

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	L	L	L	H	-	-	-	-	-	H
CO 2	H	L	H	H	-	-	-	-	-	H
CO 3	H	M	H	H	-	-	-	-	--	H
CO 4	H	H	H	H	--	--	--	-	-	H
CO 5	H	H	H	H	-	-	-	-	-	H

S - Strong; H-High; M-Medium; L-Low.

Course Designed by	Verified by HoD	Checked by	Approved by
Mr.D.Sakthivel	Dr. V.Chitraa		

Course Code	Title		
20U2ENG101	Part II- English I		
Semester: I	Credits: 4	CIA: 25 Marks	ESE : 75 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 Outcomes:

CO1	Recognize listening, and reading proficiency through the prose discourses
CO2	Use and interpret imaginative, and creative skills through the poetic genre
CO3	Enhance the students to use English effectively
CO4	Execute and exercise LSRW skills in academic and career
CO5	Evaluate the language skills through literature

Offered by: English

Instructional Hours / Week: 5

Unit	Description	Text Book	Chapter
I	Prose Leigh Hunt – Getting Upon Cold Morning Rajagopalachari – Tree Speaks Swami Vivekananda – The Secret of Work	1	1-3
	Instructional Hours		
II	Poetry DG Rossetti – The Blessed Damozel Maya Angelou -Phenomenal Women A. K. Ramanujan – A River	1	4-6
	Instructional Hours		
III	Short Stories O. Henry – The Last Leaf R. K. Narayan – The Missing Mail Oscar Wilde - The Happy Prince	1	7-9
	Instructional Hours		
IV	Grammar and Vocabulary Parts of speech Tenses – Present, past, Vocabulary of the specific domain, Punctuations, Kinds of Sentences.	1	10-13
	Instructional Hours		

V	Oral & Written Communication Listening : (UNIT I – IV) Listening – Comprehension practice from Poetry, Prose, Short-stories, 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, speak about Tongue Twisters, Critical Thinking, and Seminar Presentations on Classroom-Assignments, and Peer-Team interactions. Reading – Pronunciation practice and enhancement from Poetry, Prose, Short-stories, Magazines, News Paper etc Writing – Asking & Giving Directions/Instructions, Developing Hints, and Filling Forms.	1	14-17
	Instructional Hours		15
		Total Hours	75

Books for study:

Unit I – V: Will be compiled by the PG & Research Department of English

Books for Reference:

1. 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)

Tools for Assessment (25 Marks)

CIA I	CIA II	Model	Assignment	Seminar	Attendance	Total
5	5	6	3	3	3	25

Course Designed by	Verified by HOD	Checked by	Approved by
V.Shanthi	Dr.R.Malathi		

Course Code	Title		
20U2ENG202	Part II- English II		
Semester: II	Credits: 4	CIA: 25 Marks	ESE: 75 Marks

(All UG Programmes)

Course Objective:

To equip the students with the Language Skills, Functional usage. Facilitate the insight and taste of Literature

Course Outcomes: (CO)

CO1	Remember the themes of literary pieces
CO2	Understand the authors context
CO3	Comprehend the writing skills and practice it
CO4	Enhance fluency over language with self confidence.
CO5	Assess the language skills using literature

Offered by: English

Instructional Hours / Week: 5

Unit	Description	Text Book	Chapter
I	Prose Learning the Game - Sachin Tendulkar Women Not the Weaker Sex – Mahatma Gandhi The fun they had – Issac Asimov	2	
	Instructional Hours		
II	Poetry Stopping by Woods on a Snowy Evening – Robert Frost A Poison Tree – William Blake The Village School Master – Oliver Goldsmith	2	
	Instructional Hours		
III	Short Stories The Cat and the Pain Killer – Mark Twain The Envious Neighbour – Japanese Folk Tale Karma – Khushwanth Singh	1	
	Instructional Hours		
IV	Grammar Active and Passive Voices Direct and Indirect Speech Sentence Connectors and Linkers	1	
	Instructional Hours		

V	<p>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-Voice, Seminar Presentations on Classroom-Assignments, and Peer-Team-interactions. Reading – Different Reading Strategies in Poetry, Prose, Novel, Newspaper etc Writing– Dialogue/Conversation Writing, Advertisement Writing, and Creative Writing (autobiography, article etc,) for publication in Mass Media.</p>	2
	Instructional Hours	15
Total Hours		75

Books for study:

Unit I – V : Will be compiled by the PG & Research Department of English

Books for Reference:

1. CLIL (Content & Language Integrated Learning) – Module by TANSCHÉ

NOTE: (Text: Prescribed chapters or pages will be given to the students by the department and the college)

Tools for Assessment (25 Marks)

CIA I	CIA II	Model	Assignments	Seminars	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	H	H
CO2	H	M	M	H	H
CO3	H	M	M	M	M
CO4	H	M	M	H	M
CO5	S	H	M	M	M

S: Strong, H: High, M: Medium, L: Low

Course Designed by	Verified by HOD	Checked by	Approved by
D.Pradeek	Dr.R.Malathi		

Course Code	Title		
20U4CAZ301	Skill Based Paper I: Practical in Multimedia and its Applications		
Semester - III	Credits - 3	CIA: 30 Marks	ESE: 45 Marks

Course Objective:

To make the students to be a proficient in a broad range of design skills and animation.

Course Outcomes (CO):

CO1	Remember the graphics concepts
CO2	Understand the multimedia tools and techniques
CO3	Apply the graphical designs and functions using Photoshop, CorelDraw and Flash
CO4	Create Professional design & animation
CO5	Create Animated Objects

Offered by: Computer Applications

Course Content

Instructional Hours/Week: 4

S. No.	List of Practical for Photoshop
1	Combine aspects of several images into one professional images using Photoshop.
2	Animate Plane Flying the Clouds using Photoshop.
3	Create Plastic Surgery for Nose using Photoshop.
4	Create 3D shapes and text using Photoshop
5	Create Web Page using Photoshop.
	List of Practical for CorelDraw
6	Create a 3D text in Corel Draw
7	Create a logo for your department in Corel Draw.
8	Create an advertisement for a Textile company in Corel Draw.
9	Using Corel Draw, design a business card for a company.
10	Using Corel Draw, design a banner for a marriage function.
	List of Practical for Flash
11	Create a shape tween and include guide layer using Flash
12	Create an Advertisement
13	Create a banner Advertisement using Flash
14	Create a story telling and representing animatic using flash.
15	Create an interactive game using Flash ActionScript
	Total Hours 60

Tools for Assessment (30 Marks)

Logical Thinking	Program Execution	Test I	Test II	Observation	Attendance	Total
5	5	5	5	7	3	30

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	H	H
CO2	H	H	H	H	H
CO3	H	H	H	H	H
CO4	H	H	H	H	H
CO5	S	S	S	S	S

CO \ PO	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	H	M
CO2	H	S	M	M	H
CO3	H	H	H	H	M
CO4	M	H	H	H	M
CO5	H	H	H	M	H

S - Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HOD	Checked by	Approved by
Mr.D.Sakthivel	Dr. V.Chitraa		

Course Code	Title		
20U4CAZ402	Skill Based Paper II: Practical in Web Programming using PHP and MYSQL		
Semester - IV	Credits - 3	CIA: 30 Marks	ESE: 45 Marks

Course Objective:

To make the students to improve the skill set in developing Web sites using the open source software PHP and MySQL.

Course Outcomes (CO):

CO1	To Understand how to code a PHP application and other programming concepts.
CO2	To Understand how to work with arrays and string functions.
CO3	To Create applications using forms, files, sessions and cookies.
CO4	To Design and Implement database applications.
CO5	To Create dynamic web Pages.

Offered by: Computer Applications

Course Content

Instructional Hours/Week: 4

S. No	List of Practical
1	Write a PHP program to illustrate Conditional and Looping Statements
2	Write a PHP program to demonstrate Array Functions, string, numeric and date functions.
3	Write a PHP program to create user defined functions
4	Write a PHP program for file creation and file manipulation.
5	Write a PHP program for creating sessions.
6	Write a PHP program for creating cookies
7	Create a Simple application using forms in PHP
8	Write a PHP program for creating tables with constraints and demonstrate table join.
9	Write a PHP program for Database connectivity , Create,Insertion, Updation and Deletion of rows in MYSQL tables
10	Write a PHP program for sorting and searching a data.

11	Write a PHP Program to illustrate the usage of subqueries ,aggregate functions, set operators.
12	Write a PHP program to create a simple web page. Validate the Input and apply appropriates to format the output.
Total Hours 60	

Tools for Assessment (30 Marks)

Logical Thinking	Program Execution	Test I	Test II	Observation	Attendance	Total
5	5	5	5	7	3	30

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	H	H
CO2	H	H	H	H	H
CO3	H	H	H	H	H
CO4	H	H	H	H	H
CO5	H	H	H	H	H

CO \ PO	PO1	PO2	PO3	PO4	PO5
CO1	M	M	M	H	H
CO2	H	H	M	M	H
CO3	H	H	H	H	S
CO4	S	H	H	H	S
CO5	S	L	M	M	S

S - Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HOD	Checked by	Approved by
Dr.K.Selvavinayaki	Dr.K.Selvavinayaki		

Course Code	Title		
20U4CAZ503	Skill Based Paper III: Practical in Python Programming		
Semester - V	Credits - 3	CIA: 30 Marks	ESE: 45 Marks

Course Objective: To develop applications in Python using Procedural statements, Data structures, Regular expressions ,Object Oriented Programming concepts and Files to perform various task using Python.

Course Outcomes (CO):

CO1	Describe the Python language syntax including control statements, loops and functions to write programs for a wide variety problem in mathematics.
CO2	Apply the core data structures like lists, dictionaries, tuples and sets in Python to store, process and sort the data.
CO3	Demonstrate Python regular expression for data verification and utilize matrices for building performance efficient Python programs.
CO4	Interpret the concepts of Object-oriented programming as used in Python using encapsulation, polymorphism and inheritance.
CO5	Identify the external modules for creating and writing data to excel files and inspect the file operations to navigate the file systems.

Offered by: Computer Applications

Course Content

Instructional Hours/Week: 4

S. No	List of Practicals
1	Write a Python Program to Explore string functions.
2	Write a python program to make a simple calculator.
3	Write a python program for Linear Search.
4	Write a python program to implement merge sort.
5	Write a Python program to encrypt the text using Caesar Cipher technique. Display the encrypted text. Prompt the user for input and the shift pattern.
6	Write a Python program to construct a linked list. Prompt the user for input. Remove any duplicate numbers from the linked list.
7	Read a file content and copy only the contents at odd lines into a new file.

8	Create a menu driven Python program with a dictionary for words and their meanings.
9	Using Regular Expressions, develop a Python program to a) Identify a word with a sequence of one upper case letter followed by lower case letters. b) Find all the patterns of “1(0+)1” in a given string. c) Match a word containing ‘z’ followed by one or more o’s. Prompt the user for input.
10	Write a python program to illustrate the concept of inheritance.
11	Write a python program to demonstrate Exception Handling
12	Write a python program to Create Comma Separate Files (CSV), Load CSV files into internal Data Structure.
Total Hours 60	

Tools for Assessment (30 Marks)

Logical Thinking	Program Execution	Test I	Test II	Observation	Attendance	Total
5	5	5	5	7	3	30

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	H	H
CO2	H	H	H	H	H
CO3	H	H	H	H	H
CO4	H	H	H	H	H
CO5	S	S	S	S	S

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	L	L	L	H	-	-	-	-	-	H
CO 2	H	L	H	H	-	-	-	-	-	H
CO 3	H	M	H	H	-	-	-	-	--	H
CO 4	H	H	H	H	--	--	--	-	-	H
CO 5	H	H	H	H	-	-	-	-	-	H

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by HOD	Checked by	Approved by
Dr.K.Selvavinayaki	Dr.K.Selvavinayaki		

Course Code	Title			
18U3CKC101	Core Paper I Programming in C			
Semester: I	Credits:4	CIA :25	Marks	ESE:75 Marks

Course Objective:

To develop programming skills using the basics and fundamentals of C programming language and enable effective usage of arrays, structures, pointers and file management.

Course Outcomes:

CO1	Identify the different data types in C programming
CO2	Develop programs using control statements
CO3	Design and implement applications using arrays, strings and functions
CO4	Explain utilization of memory using pointer and file concept
CO5	Design application using sequential and random-access file processing

Offered by: Computer Application

Course Content

Instructional Hours / Week: 4

Unit	Description	Text Book	Chapter
I	Basics of C Programming: History and Features of C - Importance of C – Sample Programs-The Structure of a C Program - Programming Style - Executing C Program - Constants ,Variables and Data Types- Operators and Expression	1	1,2,3
Instructional Hours			12
II	Input – Output Organization: Input and Output Operation – Reading / Writing Character- Formatted input/output Functions- Decision Making and Branching - Decision Making and Looping	1	4,5,6
Instructional Hours			12
III	Arrays, Strings and Functions: One Dimensional - Two Dimensional Arrays –Multi Dimensional Arrays -String operations: length, compare, concatenate, copy–Introduction to functions: Function prototype, function definition, function call, Built-in functions (string functions, math functions) – Recursion	1	7,8,9
Instructional Hours			12

	Structures and Unions: Defining a Structure - Advantage of Structure -Size of Structure - Structures and Functions -Unions		
IV	Pointers in C: Understanding Pointers –Accessing the Address of a Variable-Declaring Pointer variable- Pointer Expressions-Pointer and Arrays-Pointer and Character Strings-Array of Pointers	1	10,11
Instructional Hours			12
V	File Management in C: Introduction to File Management - Opening/Closing a File – Input / Output operations on Files-Random Access File	1	12
Instructional Hours			12
Total Hours			60

Text Book(s):

1. E. Balagurusamy , **Programming in ANSI C**, Tata McGraw- Hill Publications, Fourth Edition, 2008

Unit I: Sections: 1.1 to 1.9, 2.1 to 2.8, 3.1 to 3.13 (Chapter 1,2 and 3)

Unit II: Sections: 4.1 to 4.5, 5.1 to 5.9, 6.1 to 6.6 (Chapter 4, 5 and 6)

Unit III: Sections: 7.1 to 7.7, 8.1, 8.8.6 to 8.8 (Chapter 7, 8 and 9)

Unit IV: Section: 10.1 to 10.5, 10.9, 11.1 to 11.8 (Chapter 10 and 11)

Unit V: Sections: 12.1 to 12.6 (Chapter 12)

Reference Book(s):

1. Yashwant Kanitkar , **Let us C**, BPB publications, Seventh Edition, 2007
2. V. Rajaraman , **Computer Programming in C**, PHI publications, First Edition, 2002
3. Byron S. Gottfried, **Theory and Problems of Programming with C**, Schaum’s Outline Series, Tata McGraw- Hill Publications, 2006

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Quiz	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	M	M
CO2	H	H	H	M	M
CO3	H	H	H	H	H
CO4	H	H	H	H	H
CO5	H	H	H	H	H

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	L	L	L	H	-	-	-	-	-	H
CO 2	H	H	H	H	-	-	-	-	-	H
CO 3	H	H	H	H	-	-	-	-	-	H
CO 4	H	M	H	H	-	-	-	-	-	H
CO 5	H	H	H	H	-	-	-	-	-	H

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by	Checked by	Approved by

Course Code	Title		
18U3CKC203	Core Paper IV C++ Programming		
Semester: II	Credits: 4	CIA : 25 Marks	ESE:75 Marks

Course Objective:

To make the students understand the Object Oriented Paradigm, design technique, syntax of C++ and file processing and exception handling techniques.

Course Outcomes:

CO1	Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects
CO2	Understand the concepts of functions, Classes and Objects.
CO3	Apply inheritance concepts and understand of early and late binding, usage of exception handling
CO4	Implement compile time polymorphism
CO5	Interpret and design the exception handling techniques for resolving run-time errors and handle large data set using file I/O

Offered by: Computer Applications

Course Content

Instructional Hours / Week: 4

Unit	Description	Text Book	Chapter
I	Fundamentals – Basic Concepts of Object–Oriented Programming – Benefits of OOP– Object oriented Languages – Applications of OOP What is C++?- Applications of C++- A simple C++ Program- Structure of C++- I/O Statements- Creating the source file- Compiling and Linking- Tokens- Keywords- Identifiers and Constants- Basic Datatypes- User defined Datatypes- Derived Datatypes.	1	1,2,3
Instructional Hours			12
II	Expressions and Control Structures- Declaration of variables-Operators in C++- Scope Resolution Operator- Manipulators-Expressions in C++- control structures. Functions-The Main Function- Function Prototyping- Call by reference- return by reference- Inline functions.	1	3,4
Instructional Hours			12

III	Classes and Objects- Specifying a class- Defining member functions- A C++ Program with class-Private Member Functions- Static Data Members- Static Member Functions- Friend Functions. Constructors and Destructors-Parameterized Constructor-Copy Constructor- Constructors with Default arguments- Dynamic Constructors- Destructors.	1	5,6
Instructional Hours			12
IV	Operator Overloading- Defining- Unary Operator Overloading- Binary Operator Overloading-Type Conversions -Inheritance - Introduction- Defining Derived classes-single-multilevel-multiple-Hierarchical-Hybrid Inheritance. Pointers- Pointers to Objects- Pointers to derived classes- Virtual Functions.	1	7,8,9
Instructional Hours			12
V	Working With Files- Classes for file Stream Operations- Opening and closing a file – Detecting EOF – File modes- Sequential Input-Output Operations- -Command Line arguments- Exception Handling-Basics- Exception Handling Mechanism- Throwing Mechanism- Catching Mechanism.	1	11,13
Instructional Hours			12
Total Hours			60

Text Book(s):

1.E.Balagurusamy,**Object–Oriented Programming with C++**, Tata McGraw- Hill Publications, Sixth Edition, 2013.

Unit I : Sections: 1.4 to 1.8, 2.1 to 2.8, 3.2 to 3.7(Chapter 1,2 and 3)

Unit II : Sections: 3.10, 3.13 to 3.14, 3.17, 3.19, 3.24, 4.2 to 4.6 (Chapter 3 and 4)

Unit III: Sections: 5.3 to 5.5, 5.8, 5.11 to 5.12, 5.15, 6.3,6. 5, 6.7, 6.8, 6.11(Chapter 5 and 6)

Unit IV: Sections: 7.2 to 7.4, 7.8,8.1 to 8.3,8.5 to 8.8,9.2,9.4 to 9.5 (Chapter 7,8 and 9)

Unit V : Sections: 11.2 to 11.5, 11.7, 11.10, 13.1 to 13.5 (Chapter 11, 13)

Reference Book(s) :

1. Kamthane, **Object Oriented Programming with ANSI and Turbo C++**, Person Education, 2016.

2. John R Hubbard, **Programming with C++**, Tata McGraw- Hill Publications, Second Edition, 2015.

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Quiz	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	H	H
CO2	H	H	M	M	M
CO3	H	H	M	M	M
CO4	H	H	H	M	M
CO5	H	H	H	M	M

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	H	H	H	H	-	-	-	-	-	H
CO2	L	L	L	H	-	-	-	-	-	H
CO3	H	H	H	H	-	-	-	-	-	H
CO4	H	H	H	H	-	-	-	-	-	H
CO5	H	H	H	H	-	-	-	-	-	H

S – Strong; H – High; M – Medium; L - Low

Course Designed by	Verified by	Checked by	Approved by

Course Code	Title	
19U4NM3BT1	BASIC TAMIL - I	
Semester: III	Credits: 2	CIA: 50 Marks

(Common to all UG Programmes)

Course Objective: தமிழ் மொழியைக் கற்பித்தல் – மொழித்திறனை வளர்த்தல்

Course Outcomes:

CO1	தமிழ் எழுத்துக்கள் அறிமுகம் செய்தல் மற்றும் வாசித்தல்.
CO2	பிற மொழி கற்றல் ஆர்வம் தூண்டல்.
CO3	பிற மொழி அறிவுத் திறன் மேம்படச்செய்தல்.
CO4	வார்த்தை அமைக்கும் திறன் பெறச்செய்தல்.
CO5	கையெழுத்துத்திறன் பெறச்செய்தல்.

Offered by: தமிழ்த்துறை

Course Content

Instructional Hours / Week: 2

Unit	Description
I	தமிழ் மொழியின் அடிப்படைக் கூறுகள்
	1. எழுத்துக்கள் - உயிர் எழுத்துக்கள் மெய் எழுத்துக்கள் உயிர்மெய் எழுத்துக்கள்
Instructional Hours 5	
II	சொல் அமைத்தல்
	1. ஓர் எழுத்து ஒரு மொழி 2. இரண்டு முதல் ஐந்து எழுத்துச் சொற்கள் 3. தமிழ் மாதங்கள் பெயர், கிழமைகளின் பெயர் 4. வண்ணங்கள் பெயர், சொல் ஆக்கம்
Instructional Hours 10	
III	தொடரமைப்பு
	1. எழுவாய் 2. செயப்படுபொருள் 3. பயனிலை
Instructional Hours 5	
IV	குறிப்பு எழுதுதல்

	1. தொடரமைப்பு 2. பத்தி அமைப்பு	
Instructional Hours		5
V	பிழை நீக்குதல்	
	1. ஒற்றுப்பிழை 2. வாக்கியப் பிழை	
Instructional Hours		5
Total Hours		30

பாடத்தொகுப்பு :

1.இளங்கலை தமிழ் மாணவர்களுக்குரிய பாட நூல் “அரிச்சுவடி”

தொகுப்பு:

தமிழ்த்துறை, நேரு கலை அறிவியல் கல்லூரி, கோயம்புத்தூர்.

Course Designed by	Verified by	Checked by	Approved by

Course Code	Title	
19U4NM4BT2	BASIC TAMIL - II	
Semester: IV	Credits: 2	CIA : 50 Marks

(Common to all UG Programmes)

Course Objective: அறஇலக்கியங்களை அறிமுகப்படுத்தல்

Course Outcomes:

CO1	அறஇலக்கிய அறிவு பெறுதல் – சிறுசிறு கதைகள் வழி சமூக அறிவு பெறுதல்.
CO2	மொழியைப் பிழையின்றிப் பேச, எழுத்திறன் பெறச் செய்தல்.

Offered by : தமிழ்த்துறை

Course Content

Instructional Hours / Week: 2

Unit	Description	Instructional Hours
I	நீதிநூல்கள்	
	பாரதியார் - ஆத்திச்சூடி - முதல் 12 வரிகள் கொன்றைவேந்தன்முதல் 7 வரிகள்	
		Instructional Hours 5
II	திருக்குறள்	
	கடவுள் வாழ்த்து- அகரமுதலானத்தொடங்கும்...அதி. - 1 குறள்- 1 வான்சிறப்பு - நீரின்றி அமையாது உலகு...அதி. - 2 குறள் - 10 அன்புடைமை - அன்பின்வழியது உயிர்நிலை ...அதி. - 8 குறள் - 10 கல்வி - கண்ணுடையார் என்பா; அதி. - 4 குறள் - 3 இனியவைகூறல் - இனிய உளவாக இன்னாத ... அதி. - 10 குறள் - 10	
		Instructional Hours 10
III	நீதிக்கதைகள்	
	முல்லாவின் வேடிக்கைக்கதைகள், பீர்பால்கதைகள்	
		Instructional Hours 5
IV	கிராமியக்கதைகள்	
	1. பரமார்த்தக்குருகதைகள் 2. நாட்டுப்புறக்கதைகள் அறிமுகம்	
V	மொழிப்பயிற்சி	
	1. பிறமொழிச் சொற்களுக்கு தமிழ்ச்சொல் எழுதுதல் 2. தன்விவரம் எழுதுதல் 3. எங்கள் கல்லூரி	
		Instructional Hours 5
		Total Hours 30

பாடத்தொகுப்பு :

இளங்கலைதமிழ்மாணவர்களுக்குரியபாடநூல் “அரிச்சுவடி”
தொகுப்பு: தமிழ்த்துறை, நெருகலைஅறிவியல்கல்லூரி,
கோயம்புத்தூர்.

Course Designed by	Verified by	Checked by	Approved by

Course Code	Title		
18U3CKC102	Core Paper II Digital Fundamentals and Computer Architecture		
Semester: I	Credits: 4	CIA : 25 Marks	ESE: 75 Marks

Course Objective:

To enable the students to know about the Operations in digital computer, Boolean algebra, CPU Architecture, memory design and its functionality

Course Outcomes:

CO1	Tell about the basic components of digital computer with its various operations
CO2	Illustrate Boolean algebra and logical circuit diagram
CO3	Organize Input – Output
CO4	Apply priority interrupts and use if for data transfer
CO5	Classify memory organization and multiprocessor in digital computers

Offered by: Computer Applications**Course Content****Instructional Hours / Week: 4**

Unit	Description	Text Book	Chapter
I	Digital Logic – Digital Operations - Digital Computers. Number System and Binary Codes: Decimal, Binary, Octal, Hexadecimal Binary addition, Multiplication, Division – Floating point representation, Complements, BCD, Excess3, Gray Code. Arithmetic Circuits: Half adder, Full adder, Parallel binary adder, BCD adder, Serial Adder, Half subtractor, Full subtractor, Parallel binary subtractor- Digital Logic: the Basic Gates –NOR, NAND, XOR Gates.	1	1
Instructional Hours			12
II	Combinational Logic Circuits: Boolean algebra -Karnaugh map – Canonical form 1 – Construction and properties –Implicants – Don't care combinations - Product of sum, Sum of products, simplifications. Sequential circuits: Flip-Flops: RS, D, JK, and T - Multiplexers – Demultiplexers – Decoder -Encoder – shift registers-Counters	1	1
Instructional Hours			12

III	Input – Output Organization: Input – output interface – I/O Bus and Interface – I/O Bus Versus Memory Bus – Isolated Versus Memory – Mapped I/O – Example of I/O Interface. Asynchronous data transfer: Strobe Control and Handshaking- Modes of Transfer	2	11
Instructional Hours			12
IV	Priority Interrupt: Daisy- Chaining Priority, Parallel Priority Interrupt. Direct Memory Access: DMA Controller, DMA Transfer. Input – Output Processor: CPU-IOP Communication-Serial Communication-Character Oriented Protocol, Data Transparency, Bit Oriented Protocol.	2	11
Instructional Hours			12
V	Memory Organization: Memory Hierarchy – Main Memory-Associative memory: Hardware Organization, Match Logic, Read Operation, Write Operation. Cache Memory: Associative, Direct, Set-associative Mapping – Writing into Cache Initialization. Multiprocessor: Interconnection Structure, Interprocessor Arbitration, Interprocessor Communication and Synchronization.	2	12 & 13
Instructional Hours			12
Total Hours			60

Text Book(s):

V.K. Puri & Henry , Digital Electronics Circuits And Systems , TMH, 1997.

M. Morris Mano , Computer System Architecture , PHI publications,2000.

Unit I : Text book 1: Sections: 1.1.3 to 1.1.8, 1.1.10 – 1.1.14, 1.4.2 to 1.4.5, 1.4.7 to 1.4.9, 1.2.2, 1.2.6 to 1.2.7, 1.2.9 (Chapter 1)

Unit II: Text book 1: Sections: 1.2.1, 1.2.11 to 1.2.15, 1.2.17 to 18, 1.5.1 to 1.5.3, 1.5.6, 1.5.9 to 1.5.10, 1.6.2 to 1.6.9 (Chapter 1)

Unit III: Text book 2: Sections: 11.2 to 11.4 (Chapter 11)

Unit IV: Text book 2: Sections: 11.5 to 11.8 (Chapter 11)

Unit V : Text book 2: Sections: 12.1, 12.2, 12.4, 12.5, 13.2 to 13.4 (Chapter 12 and 13)

Reference Book:

M. Carter , Computer Architecture , Schaum'S Outline Series, TMH, 1996.

Albert Paul Malvino & Donald P Leach , Digital Principles And Applications, TMH,2006.

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Quiz	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	H	M	H	M
CO2	H	M	M	H	M
CO3	H	M	M	H	M
CO4	H	H	M	H	H
CO5	H	H	M	H	H

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	H	H	H	H	M	-	-	-	M	H
CO2	H	H	H	H	M	-	-	-	M	H
CO3	H	H	H	H	M	-	-	-	M	H
CO4	H	H	H	H	M	--	--	-	M	H
CO5	H	H	H	H	M	--	--	-	M	H

S – Strong; H – High; M – Medium; L – Low.

Course Designed by	Verified by	Checked by	Approved by

Course Code	Title		
18U3CKC204	Core Paper V Data Structures		
Semester - II	Credits - 4	CIA:25Marks	ESE:75 Marks

Course Objective:

To enable the students to understand about the various techniques such as Linked list, Searching and Sorting and apply them to solve complex programs.

Course Outcomes:

CO1	Tell about various operations such as searching and sorting
CO2	Understand about the efficient storage mechanism of data
CO3	Choose appropriate data structures for solving the complex problem
CO4	Apply the various algorithms to solve real world problem using any programming language
CO5	Apply data structures to store different type of data

Offered by: Computer Applications

Course Content

Instructional Hours/Week: 4

Unit	Description	Text Book	Chapter
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			12
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			12

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			12
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			12
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			12
Total Hours			60

Text Book(s):

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.

Unit I: Sections: 1.1 to 1.4, 2.1 to 2.4 and 3.1 to 3.4 (Text Book 1: Chapter 1, 2 and 3)

Unit II: Sections: 3.1 to 3.4, 4.1 to 4.5 (Text Book 2: Chapter 3 and 4)

Unit III: Sections: 5.1 to 5.6 (Text Book 2: Chapter 5)

Unit IV: Section: 7.1 to 7.8, 8.1 to 8.3 (Text Book 1: Chapter 7 and 8)

Unit V: Section: 9.1 to 9.3, 10.1, 10.3 (Text Book 1: Chapter 9 and 10)

Reference Book(s):

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.

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Quiz	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	M	M	M
CO2	M	M	H	M	M
CO3	H	H	H	H	M
CO4	H	H	H	M	H
CO5	H	H	H	M	H

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	L	H	H	H	-	-	-	-	-	H
CO 2	L	H	H	H	-	-	-	-	-	H
CO 3	H	H	H	H	-	-	-	-	-	H
CO 4	H	H	H	H	-	-	-	-	-	H
CO 5	H	H	H	H	-	-	-	-	-	H

S – Strong; H – High; M – Medium; L - Low

Course Designed by	Verified by	Checked by	Approved by

Course Code	Title	
19U4NM3AT1	ADVANCED TAMIL - I	
Semester: III	Credits: 2	ESE : 50 Marks

(Common to all UG Programmes)

Course Objective: புதுக்கவிதை உருவாக்கும் திறன் வளர்த்தல் -
மொழித்திறனை மேம்படுத்துதல்.

Course Outcomes: 1. கடிதம் எழுதுதல் மற்றும் மொழியறிவைப் பெறுதல்.
2. படைப்பாக்கத்திறன் பெறச்செய்தல்.
3. மொழியைப் பிழையின்றிப் பேச, எழுதத்திறன் பெறச்செய்தல்

Offered by : தமிழ்த்துறை

Course Content

Instructional Hours / Week: 2

Unit	Description	Instructional Hours
I	புதுக்கவிதை	
	1. பாரதியார் - புதுமைப்பெண் 2. பாரதிதாசன் - இருண்ட வீடு	
Instructional Hours		10
II	பிழை நீக்குதல்	
	1. வார்த்தைப் பிழை நீக்கம் 2. தொடர் பிழை நீக்கம் 3. பத்தி எழுதச் செய்தல்	
Instructional Hours		5
III	இலக்கணப் பயிற்சி அளித்தல்	
	1. தொகை நிலைத் தொடர், தொகா நிலைத்தொடர் 2. ஆகுபெயர், ஆகுபெயர் வகைகள்	
Instructional Hours		5
IV	கடிதம் எழுதுதல்	
	1. பாராட்டுக்கடிதம் 2. நன்றிக்கடிதம் 3. அழைப்புக்கடிதம் 4. அலுவலகக் கடிதம்	
Instructional Hours		5

V	இலக்கிய வரலாறு	
	1. புதுக்கவிதையின் தோற்றமும் வளர்ச்சியும்	
	2. பாரதியார் - குறிப்பு	
	3. பாரதிதாசன் - குறிப்பு	
Instructional Hours		5
Total Hours		30

பாடத்தொகுப்பு :

இளங்கலை தமிழ் மாணவர்களுக்குரிய பாட நூல் “திரட்டு”
தமிழ்த்துறை.

தொகுப்பு: தமிழ்த்துறை, நேரு கலை அறிவியல் கல்லூரி,
கோயம்புத்தூர்.

பார்வை நூல்கள்:

1. பாரதியார் – பாரதியார் கவிதைகள், அபிராமி பதிப்பகம், 7- பி, கொடி மரத் தெரு, சென்னை.
2. பவணந்தி முனிவர் – நன்னூல் பூலியூர்;க்கேசிகன் உரை, சாரதா பதிப்பகம், சென்னை.
3. தமிழண்ணல் - புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை.
4. அ.கி. பரந்தாமனார் – நல்ல தமிழ் எழுத வேண்டுமா? அல்லி நிலையம், சென்னை.
5. கா..கோ.வேங்கடராமன் - தமிழ் இலக்கிய வரலாறுஇ தமிழ்மண் பதிப்பகம் - நாமக்கல்.
6. மாணவர் தமிழ் இலக்கணம் - புலவர்.கவியழகன், எம்.ஏ., சு+டாமணி பிரசுரம், சென்னை.

Course Designed by	Verified by	Checked by	Approved by

Course Code	Title	
19U4NM4AT2	ADVANCED TAMIL - II	
Semester: IV	Credits: 2	ESE : 50 Marks

(Common to all UG Programmes)

Course Objective: நூல்களின்வழி அறச்சிந்தனைகளை உருவாக்குதல்
செம்மொழியினைச் செம்மைப்படுத்துதல்.

Course Outcomes:

CO1	அறச்சிந்தனைகள் பெறுதல் மற்றும் இலக்கண வழக்கு முறைகளைப் பெறுதல்.
CO2	மொழியைப் பிழையின்றிப்பேச, எழுத்திறன் பெறச்செய்தல்

Offered by : தமிழ்த்துறை

Course Content

Instructional Hours / Week: 2

Unit	Description
I	பதினெண்கீழ்க்கணக்குநூல்கள்
	திருக்குறள் 1.வாய்மை 2.கூடாநட்பு 3. செய்நன்றியறிதல்
Instructional Hours 10	
II	சிறுகதை
	பூனாத்திசிறுகதைகள் - வெ. இறையன்பு 1. விடுகதை 2. நண்பர்கள்
Instructional Hours 5	
III	எழுத்துப்பிழைநீக்கவழிகள்
	1. சொற்களைச்சரியாகப்பயன்படுத்தும்முறை 2. வினைச்சொற்கள், பெயர்ச்சொற்கள்

Instructional Hours		5
IV	வழக்கறிதல்	
	மரபு, இயல்பு, வழக்கு - தகுதிவழக்கு அறிதல்	
V	படைப்பாற்றல் பயிற்சி	
	கவிதை - சிறுகதை - நூல்மதிப்பீடு எழுதுதல்	
Instructional Hours		5
Total Hours		30

பாடத்தொகுப்பு :

இளங்கலை தமிழ்மாணவர்களுக்குரிய பாடநூல் “திரட்டு”.

தொகுப்பு: தமிழ்த்துறை, நேருகலை அறிவியல் கல்லூரி, கோயம்புத்தூர்.

பார்வை நூல்கள்:

1. திருக்குறள் - பரிமேலழகர் உரை, மணிவாசகர்பதிப்பகம், சென்னை.
2. அ.கி. பரந்தாமனார் - நல்லதமிழ் எழுதவேண்டுமா? அல்லிநிலையம், சென்னை.
3. பவணந்தி முனிவர், நன்னூல் பூலியூர்க்கேசிகன் உரை, சாரதாபதிப்பகம், சென்னை.
4. வெ. இறையன்பு - பூனாத்தி, கவிதாபதிப்பகம், சென்னை.

Course Designed by	Verified by	Checked by	Approved by

Course Code	Title		
18U3CAP101	Core Paper III Practical in C Programming		
Semester: I	Credits: 4	CIA: 40 Marks	ESE: 60 Marks

Course Objective:

To make the student learn programming language, problem solving techniques and write program in C language.

Course Outcomes:

CO1	Understand and execute programs in C language
CO2	Experiment with structured programs using control structures and functions
CO3	Develop programs that perform operations using derived data types
CO4	Design applications using sequential and random access file processing
CO5	Applying file concepts to various applications

Offered by: Computer Applications**List of Exercises****Instructional Hours / Week: 4**

S. No.	List of Practical										
1	Write a Program to demonstrate arithmetic operators										
2	Write a Program to demonstrate logical operators										
3	Write Program using decision-making statements										
4	Write a Program to calculate electricity bill. Read starting and ending meter reading. The charges are as follows. <table style="margin-left: 40px;"> <thead> <tr> <th>No. of Units Consumed</th> <th>Rate in (Rs)</th> </tr> </thead> <tbody> <tr> <td>1-100</td> <td>2.00 per unit</td> </tr> <tr> <td>101-300</td> <td>3.50 per unit for excess of 100 units</td> </tr> <tr> <td>301-500</td> <td>5.00 per unit for excess of 300units</td> </tr> <tr> <td>501-above</td> <td>9.50 per unit for excess of 500 units</td> </tr> </tbody> </table>	No. of Units Consumed	Rate in (Rs)	1-100	2.00 per unit	101-300	3.50 per unit for excess of 100 units	301-500	5.00 per unit for excess of 300units	501-above	9.50 per unit for excess of 500 units
No. of Units Consumed	Rate in (Rs)										
1-100	2.00 per unit										
101-300	3.50 per unit for excess of 100 units										
301-500	5.00 per unit for excess of 300units										
501-above	9.50 per unit for excess of 500 units										
5	Write a program to perform various string manipulations using built-in functions										
6	Write a Program to demonstrate multidimensional array concept										
7.	Write a program to create structure for an account holder in a bank with following fields: name, account number, address, and balance and display the details of five account holders										

8	Write a program to create structure for an account holder in a bank with following fields: name, account number, address, and balance and display the details of five account holders
9	Write a program to implement the following concept a) Call By Value B) Call By Reference.
10.	Write a program to implement concept of pointers
11.	Write a program copies the contents of one file to another file

Tools for Assessment (40)

MODEL I	MODEL II	Performance		Observation	Attendance	Total
		Logical Thinking	Optimal Solution			
10	10	5	5	7	3	40

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	H	H
CO2	H	H	H	M	M
CO3	H	H	H	M	M
CO4	H	H	H	H	H
CO5	H	H	H	H	H

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	H	H	H	H	M	-	-	-	M	H
CO 2	H	H	H	H	M	-	-	-	M	H
CO 3	H	H	H	H	M	-	-	-	M	H
CO 4	H	H	H	H	M	--	--	-	M	H
CO 5	H	H	H	H	M	--	--	-	M	H

S- Strong; H-High; M-Medium; L-Low

Course Designed by	Verified by	Checked by	Approved by

Course Code:	Title :		
18U3CAP202	Core Paper VI Practical in C++ Programming		
Semester: II	Credit: 4	CIA : 40 Marks	ESE: 60 Marks

Course Objective:

To make the students understand the Object-Oriented Paradigm, design technique, syntax of C++ and file processing and exception handling techniques.

Course Outcomes:

CO1	List and apply object-oriented features and C++ concepts
CO2	Classify the concepts of friend function, constructors, destructors and polymorphism
CO3	Utilize static member, pointer and virtual function
CO4	Classify the exception handling and templates
CO5	Implement file concepts to save and process data

Offered by: Computer Applications

List of Experiments

Instructional Hours / Week: 4

S. No.	List of Practical
1	Write a C++ Program to illustrate the usage of function using call by reference.
2	Write a C++ Program to illustrate the usage of inline functions
3	Write a C++ Program to illustrate the usage of scope resolution operator.
4	Write a C++ Program to illustrate function overloading
5	Write C++ Programs and incorporating various forms of Inheritance
6	Write a C++ Program to illustrate the use of Constructors and Destructors
7	Write a C++ Program to illustrate friend functions
8	Write a Program to illustrate Static member and methods
9	Write a C++ Program to illustrate the usage of pointers
10	Write a C++ Program to illustrate Virtual functions
11	Write a C++ Program to illustrate the functions of a file.
12	Write a C++ Program to illustrate Exception Handling
	Total Hours: 60

Tools for Assessment (40)

MODEL I	MODEL II	Performance		Observation	Attendance	Total
		Logical Thinking	Optimal Solution			
10	10	5	5	7	3	40

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	H	H	H	H	H
CO2	H	H	M	M	M
CO3	M	M	H	M	H
CO4	H	M	M	H	M
CO5	H	M	M	H	M

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	H	H	H	H	-	-	-	-	-	H
CO 2	L	L	L	H	-	-	-	-	-	H
CO 3	H	H	H	H	-	-	-	-	-	H
CO 4	H	H	H	H	-	-	-	-	-	H
CO 5	H	H	H	H	-	-	-	-	-	H

S – Strong; H – High; M – Medium; L - Low

Course Designed by	Verified by	Checked by	Approved by

Course Code	Title	
19U4NM3CAF	Non Major Elective : Consumer Affairs	
Semester: III	Credits : 2	ESE: 50 Marks

Course Outcome:

CO1	Know their rights and responsibilities as a consumer
CO2	Gain knowledge about Legal framework of protecting consumer rights
CO3	Understand the procedure about redressal of consumer complaints
CO4	Learn about Consumer related regulatory
CO5	Comprehend business firms ,interface with consumers

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

Unit	Description	Instructional Hours
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, labeling and packaging along with relevant laws, Legal Metrology.	6
	Consumer Complaining Behaviour: Alternatives available to Dissatisfied Consumers; Complaint Handling Process	
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, deficiency in service, unfair trade practice.	6
III	Grievance Redressal Mechanism under the Indian Consumer Protection Law Who can file a complaint? Grounds of filing a complaint; Limitation period; Procedure for filing and hearing of a complaint; Disposal of cases, Relief/Remedy available; Temporary Injunction, Offences and penalties.	6
IV	Role of Industry Regulators in Consumer Protection i. Telecommunication: TRAI ii. Food Products: FSSAI iii. Insurance : IRDA and Insurance Ombudsman	6
	Instructional Hours	6

V	Contemporary Issues in Consumer Affairs 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
	Total Hours 30

Text book :

“Consumer Affairs”, Compiled by Department of Business Administration, Nehru Arts and Science College.

Suggested Readings:

1. Khanna, Sri Ram, Savita Hanspal, Sheetal Kapoor, and H.K. Awasthi. (2007) Consumer Affairs, Universities Press.
2. Choudhary, Ram Naresh Prasad (2005). Consumer Protection Law Provisions and Procedure, Deep and Deep Publications Pvt Ltd.
3. G. Ganesan and M. Sumathy. (2012). Globalisation and Consumerism: Issues and Challenges, Regal Publications
4. Suresh Misra and Sapna Chadah (2012). Consumer Protection in India: Issues and Concerns, IIPA, New Delhi
5. Rajyalaxmi Rao (2012), Consumer is King, Universal Law Publishing Company
6. Girimaji, Pushpa (2002). Consumer Right for Everyone , Penguin Books.

Course Designed by	Verified by	Checked by	Approved by

Course Code	Title	
19U4NM4GEN	General Awareness	
Semester: IV	Credits : 2	ESE : 50 Marks

Course Objective:

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

Course Outcome:

CO1	Analysis the Verbal and Numerical Aptitude
CO2	Understood the General Science and Technology and Education
CO3	Gain Knowledge in Computer aids and Social Studies
CO4	Develop Aptitude and problem solving skills

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

S. No.	Topics
1	Verbal Aptitude
2	Numerical Aptitude
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

Course Code	Title		
18U3MIA101	Allied Paper I : Mathematics for Computer Science		
Semester: I	Credits : 4	CIA: 25 Marks	ESE: 75 Marks

Course Objective:

To enable the students to learn the concepts of Statistical and Numerical Methods used in Computer applications.

Course Outcomes:

CO1	To understand the concepts of Matrices and its applications.
CO2	To solve Linear Algebraic Equations using various methods.
CO3	To solve problems in Numerical Differentiation and Integration.
CO4	To understand measures of Central Tendency and Dispersion.
CO5	To acquire knowledge about Correlation and Regression concepts.

Offered by: Mathematics with CA

Course Content**Instructional Hours / Week: 5**

Unit	Description	Text Book	Chapter
I	Matrices: Introduction – Types of Matrices –Matrix Operations - Determination – Inverse of a matrix – Rank of a Matrix.	3	4
	Eigen value Problems.	1	4
Instructional Hours			15
II	System Of Simultaneous Linear Algebraic Equations: Gauss elimination, Gauss Jordon, Gauss Seidal methods.	2	4
	Instructional Hours		
III	Numerical Differentiations: Newton's forward Difference - Backward Difference – Stirling formula.	2	9
	Numerical Integration: Trapezoidal Rule & Simpson's rule.	2	9
Instructional Hours			15
IV	Measures of Central Tendency: Mean Median and Mode – Relationship among mean, median and mode.	3	7
	Measures of Dispersion: Range, Quartile deviation and Standard deviation.	3	8
Instructional Hours			15
V	Correlation: Coefficient of correlation – Regression equation of variables.	3	13
	Regression: Types of relationship – Linear regression.	3	13
Instructional Hours			15
Total Hours			75

Text Books:

P.Kandasamy, K.Thilgavathy, K.Gunavathy, Engineering Mathematics, Volume I, S. Chand Company, 2006.

P.Kandasamy, K.Thilagavathy and K.Gunavathy Numerical Methods, S.Chand& Company Ltd., Revised 2005.

P.A.Navanitham, Business Mathematics and Statistics, (Part II), Jai Publishers, Trichy – 21.

Unit I : Book 3, Chapter 4

Book 1, Chapter 1 (Eigen value problems only)

Unit II : Book 2, Chapter 4, Section: 4.1- 4.3, 4.9

Unit III : Book 2, Chapter 9, Sections: 9.1 - 9.4, 9.7, 9.9, 9.13, 9.14

Unit IV : Book 3, Chapter 7, (only Mean, Median and Mode)

Book 3, Chapter 8, (only Range, Q.D and S.D)

Unit V : Book 3, Chapter 13.

Reference Books:

E. Balagurusamy, Numerical Methods, Tata McGraw Hill Publishing company LTD, Reprint, 2008.

S. C. Gupta, V. K. Kapoor, Fundamental of Mathematical Statistics Sultan Chand & Sons, Reprint 2014.

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Problem Solving Skill	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4
CO1	H	H	H	H
CO2	M	M	H	M
CO3	M	L	H	M
CO4	L	M	H	H

Course Designed by	Verified by HOD	Checked by	Approved by

Course Code	Title		
18U3MIA202	Allied Paper II : Discrete Mathematics		
Semester: II	Credits : 4	CIA: 25 Marks	ESE: 75 Marks

Course Objective:

To learn about the discrete structures for Computer based applications.

Course Outcome:

CO1	To remember the basic concepts of Set theory
CO2	To understand the basic ideas of Mathematical Logic
CO3	To gain knowledge about different types of Relations and Functions
CO4	To apply the concept of Graph theory in Computer Algorithms

Offered by: Mathematics with CA

Course Content

Instructional Hours / Week: 5

Unit	Description	Text Book	Chapter
I	Set Theory: Introduction-Set & its Elements-Set Description-Types of sets -Venn-Euler Diagrams-Set operations & Laws of set theory.	1	1
	Fundamental products - Partitions of sets – Minsets - Algebra of sets and Duality-Inclusion and Exclusion principle.	1	1
Instructional Hours			15
II	Mathematical Logic: Introduction- propositional calculus – Basic logical operations- Tautologies- Contradiction – Argument - Method of proof - Predicate calculus.	1	12
Instructional Hours			15
III	Relations: Binary Relations – Set operation on relations-Types of Relations – Partial order relation – Equivalence relation – Composition of relations.	1	3
	Functions – Types of functions – Invertible functions – Composition of functions.	1	4
Instructional Hours			15
IV	Languages: Operations on languages – Regular Expressions and regular languages.	1	15
	Grammar: Types of grammars – Finite state machine – Finite -State automata.	1	15
Instructional Hours			15
V	Graph Theory: Basic terminology – paths, cycle & Connectivity – Sub graphs – Types of graphs.	1	9

	Trees – Properties of trees – Binary trees – traversing Binary trees – Computer Representation of general trees.	1	10
Instructional Hours			15
Total Hours			75

Text Books:

J.K. Sharma, **Discrete Mathematics**, Macmillan India Ltd, 2nd edition, 2005.

- Unit I : Chapter 1, Section: 1.1-1.7, 1.9, 1.10, 1.12, 1.14
 Unit II: Chapter 12, Section: 12.1 – 12.3 & 12.8, 12.9, 12.11, 12.12 & 12.14
 Unit III: Chapter 3, Section: 3.3 - 3.7, 3.11
 Chapter 4, Section: 4.1 – 4.5
 Unit IV: Chapter 15, Section: 15.1-15.7
 Unit V: Chapter 9, Section: 9.1 – 9.5
 Chapter 10, Section: 10.1-10.3, 10.6, 10.8

Reference Books:

1. J. P. Tremblay, R Manohar, **Discrete Mathematics Structures with Applications to Computer Science**, McGraw Hill International Edition, 2005
2. M. K. Venkataraman, N.Sridharan, N.Chandarasekaran, **Discrete Mathematics**, National Publishing Company, Chennai.

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Quiz	Attendance	Total
5	5	6	3	3	3	25

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	L	M	H	M	M
CO2	L	L	H	L	M
CO3	M	M	H	H	H
CO4	L	M	H	M	H

S – Strong; H – High; M – Medium; L - Low

Course Designed by	Verified by HOD	Checked by	Approved by

Course Code		Title	
18U4HVVY402		Human Excellence: Human values and Yoga Practice II	
Semester: III & IV	Credit: 2	CIA: 25 Marks	ESE: 25 Marks

Course Objectives:

- 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 materials with reference to institute health

Course Outcome (CO):

At the end of the course, students are expected

CO 1	To become more aware of their self and their relationships and would have better reflective and discerning ability.
CO 2	It is hoped that they would be able to apply what they have learnt to their own self in different ordinary day-to-day settings in real life with higher commitment and courage.
CO 3	To enable students to lead a practical life adding value to human relations.
CO 4	To have the basic Knowledge on Simplified Physical Exercises and Asanas and Meditation

Course Content

Instructional Hours / Week: 1

Unit	Description	Text Book	Chapter
I	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 -Citizens Charter - Emotional Intelligence.	1	1,4
Instructional Hours			6
II	Impact of Modern Education and Media on Values: Impact of Science and Technology on Values; Effects of computer aided media on Values (Internet, e-mail, Chat etc.); Role of teacher in the preservation of tradition and culture;	1	5
Instructional Hours			6
III	Eradication of worries - Maintaining youthfulness - Greatness of friendship – Refinement of worries - Neutralization of anger- Intelligent quotient (IQ), Emotional quotient (EQ), Spiritual Quotient (SQ)	1	2,3

Instructional Hours				6
IV	Standing Posture: Tadasana, Padahasthasana, Virabhadrasana;			
	Sitting posture: Ustrasana, Ardha Matsyendrasana, Paschimottanasana.	2	4,5	
Instructional Hours				6
V	Supine posture: Sarvangasana, Halasana, Chakrasana.			
	Prone posture: Bhujangasana, shalabhasana; Dhanurasana; Balancing postures: Vrikshasana, Natarajasana, Utkatasana; Pranayama: Bhastrika, Bhramari, NadiShodhan.	2	6,9	
Instructional Hours				6
Total Hours				30

Textbook(s):

1. Kiran, D.R. "Professional Ethics & Human Values", TATA McGraw Hill Education.
2. Chandrasekaran, 1999. Sound Health through yoga, Prem Kalyan Publications, Madurai.

Reference Books :

1. Vethathiri Maharishi, 2011, "Value Education", Vethathiri Publication, Erode
2. Thathuvagnani Vethathiri Maharishi, 2014, "Simplified Physical Exercises". Vethathiri Publications

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment / Seminar / Critical Thinking		Attendance	Total
5	5	6	3	3	3	25

Course designed by	Verified by HoD	Checked by	Approved by

Course Code	Title	
19U4NM3GTS	Gandhian Thoughts	
Semester: III	Credits : 2	ESE: 50 Marks

Course Objective: To make them understand the philosophies of Gandhi better and fulfill their duties and responsibilities towards the society.

Course Outcome: To upgrade the knowledge and skills of the students in Gandhian Thoughts and to encourage patriotism among the new generation, to put light on social issues and value of life.

Course Content

Instructional Hours/Week: 02

Unit	Description	Instructional Hours
I	Educational Philosophy of Gandhiji : Definitions on Education - What is True Education? - Gandhiji's New Scheme of Education - Wardha Scheme of Education - Main Aims of Gandhian Education - Why Gandhiji's Scheme of Education was Called 'Basic Education?' - Features of the Wardha Scheme of Education - Features of Basic Education - The Methodology of Basic Education - The Content of Basic Education - Routine Work of a Basic School	6
II	Gandhian Concept of Correlation of Studies - Technique of Correlation - The Place of Teacher in Basic Education - Merits of Basic Education - Educational Scenario after Independence - Influences of Gandhiji on Education Commissions - Basic Schools in the Present Society - Education for Peace – A Gandhian View - Why Basic Education is called a Holistic Model	6
III	Gandhiji's View on Truth and Non-Violence : Gandhiji's Words about Truth - Meaning of Truth, Truth is God - Truth and God - The Importance of Truth in Human Life - Absolute and Relative Truth - Realisation of the Self - Liberation.	6
IV	Mahatma Gandhi's Views on Women : Status of Women in Pre Independence India - Gandhi's Perception of Women - Role of Women in Family – Perception of Gandhi - Value of Equality - Women in Politics - Gandhiji's Vision to Abolish Social Evils against Women - Role of Women as Envisaged by Gandhi.	6
V	Gandhiji's View on Democracy (Gram Swaraj) : City and Village - Gram Swaraj - Critique of Industrialisation - Critique of Machinery	6
Total Hours		30

Text Book(s):

1. "Gandhian Thoughts", Compiled by Nehru Arts and Science College.

Course Code	Title	
18U4ENV101	Ability Enhancement Compulsory course (AECC) Environmental Studies	
Semester: I	Credits: 2	ESE : 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 environmental concern.

Course Outcomes:

CO1	To understand key concepts from economic, political, and social analysis as they pertain to the design and evaluation of environmental policies and institutions.
CO2	To understand concepts and methods from ecological and physical sciences and their application in environmental problem solving.
CO3	To solve the ethical, cross-cultural, and historical context of environmental issues and the links between human and natural systems.
CO4	To reflect critically about their roles and identities as citizens, consumers and environmental actors in a complex, interconnected world.
CO5	To apply systems concepts and methodologies to analyze and understand interactions between social and environmental processes.

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

Unit	Description	Text Book	Chapter
I	Natural Resources: Forest resources, Water resources, Mineral resources Food resources and Energy resources.	1	5
Instructional Hours			6
II	Ecosystems: Concept of an ecosystem, Structure and function; Introduction, types characteristic features, structure and function of ecosystem Activity: Prepare an album on types of Ecosystem.	1	3
Instructional Hours			6
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	8,9,11, 10,12,15
Instructional Hours			6

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 analyze a Social Issue and an Environment issue in your locality.	1 2	17 9
	Instructional Hours		4
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	3	16
	Instructional Hours		6
Case Studies: Use Social media for e-networking and dissemination of ideas on environmental issues. (Or) Visit to a Nearby biome / Wildlife Sanctuary/ our own campus & study various bioresources.			2
Total hours			30

Text Book(s):

Agarwal,K.M.,Sikdar,P.K.,Deb,S.C. (2002). A Textbook of Environment. Macmillan India Ltd. Kolkata, India.

Dash.M.C. (2004). "Ecology, Chemistry & Management of Environmental Pollution". Published By Rajiv Beri For Macmillan India Ltd. 2/10 Ansari Road, Daryaganj, New Delhi – 110002.

1. 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.

Course designed by	Verified by	Checked by	Approved by

Course Code	Title	
18U4HRC202	Ability Enhancement Compulsory Course : Human Rights and Constitution of India	
Semester: II	Credits: 2	Max. Marks : 50

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	Understand the fundamental duties and rights of Indian Citizen

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

Unit	Description	Instructional Hours	Weeks
I	Human Rights and Conceptual Background of Human Rights Definition, Meaning Inherent, inalienable, Universal, indivisible Values: Dignity, liberty, equality and justice.	6	3
		Instructional Hours	6
II	Philosophical and Historical Perspectives : Theories of Human Rights -Human Rights Movements- History of Human Rights Civilization	6	3
		Instructional Hours	6
III	HR for target population: Refugees, War victims, Prisoners, Custodial Violence Women and Children, Senior Citizens.	6	3
		Instructional Hours	6
IV	Human Rights and Duties in India Evolution : Independence Movement , Making of the constitution Indian Constitution : Fundamental Rights –directive Principles –Fundamental Duties.	6	3
		Instructional Hours	6
V	Enforcement and Protection Mechanism of Human Rights in India. Judiciary, National Human Rights Commission and other Commissions and Committees. Non- Governmental Organizations, Information Media and Education.	6	3
		Instructional Hours	6
		Total Hours	30

Text Book:

1. **“Human Rights and Constitution of India”**, compiled by the Department of Social Work, Nehru Arts and Science College.

Course Designed by	Verified by	Checked by	Approved by

Course Code	Title	
19U4NM3WRT	Women's Rights	
Semester: III	Credits: 2	ESE : 50 Marks

Course Objective:

To facilitate the awareness on the social, economic, political, intellectual or cultural contributions of one or more women

Course Outcomes:

CO1	Examine the similarities and differences among women within and across cultures and at various moments
CO2	Describe gender socialization and its consequences in a particular society
CO3	Analyze how these factors with the privileges and disadvantages they confer have shaped one's own experiences, presumptions, viewpoints, and sense of identity
CO4	Read and respond to feminist scholarship

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

Unit	Description	Text book	Chapter
I	Laws, Legal System and Change Definition - Constitutional law, CEDAW and International Human Rights - Laws and Norms – Laws and Social Context - Constitutional and Legal Framework	2	2
Instructional Hours			6
II	Politics of land and gender in India Land as Productive Resources	1	5
	Locating Identities – Women's Claims to Land – Right to Property - Case Studies	1	6,7
Instructional Hours			6
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
IV	Women's Rights		
	Violence Against Women – Domestic Violence The Protection of Women from Domestic Violence Act, 2005, The Marriage Validation Act, 1982 - The Hindu Widow Re-marriage Act, 1856- The Dowry Prohibition Act, 1961	3	5

	Instructional Hours	
		6
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
	Total Instructional Hours	
		30

Text Books:

1. Nitya Rao **Good Women do not Inherit Land** Social Science Press and Orient Blackswan 2008
2. International Solidarity Network **Knowing Our Rights** An imprint of Kali for Women 2006
3. P. D. Kaushik **“Women Rights”** Bookwell Publication 2007 UN Centre for Human Rights, Discrimination against Women (Geneva: World Campaign for Human Rights, 1994).

Reference Books:

1. Aruna Goal **Violence Protective Measures for Women Development and Empowerment**, Deep and Deep Publications Pvt. 2004
2. Monica Chawla **Gender Justice**, Deep and Deep Publications Pvt. Ltd.2006
3. Preeti Mishra **Domestic Violence Against Women**, Deep and Deep Publications Pvt. 2007
4. Clair M. Renzetti, Jeffrey L. Edleson, Raquel Kennedy Bergen, Source Book on **Violence Against Women** Sage Publications 2001

Course Code	Title		
18U4HVY201	Human Values and Yoga Practice I		
Semester: I & II	Credits: 2	CIA: 25 Marks	ESE: 25 Marks
(Common to all UG Programmes)			

Course Objectives:

- 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 materials with reference to institute health.

Course Outcomes :

At the end of the course, students are expected

CO 1	To inculcate in students, a sense of respect towards harnessing values of life and spirit of fulfilling social responsibilities.
CO 2	To inspire individuals to choose their own personal, social, moral and spiritual values and be aware of practical methods for developing and deepening.
CO 3	To inculcate cultural behavioral patterns
CO 4	To understand physical body and Health concepts

Course Content**Instructional Hours / Week: 1**

Unit	Description	Instructional Hours
I	Human Values -Introduction-Definition of Ethics and Values-Character and Conduct -Nature and Scope of Ethics.	6
II	Individual and Society -Theories of Society-Social Relationships and Society-Empathy: Compassion towards other being -Environmental Ethics and Nature.	6
III	Cultural Education - Purity India - Patriotism - Time management. Greatness of Womanhood - Food is medicine- Individual peace -World Peace.	6
IV	Power of Meditation- Development of mind in stages - Mental Frequencies - Methods for Concentration. Meditation Practices - Surya namaskar.	6
V	Simplified Physical Exercise – Kayakalpa Practices - Training for Potentialising the Mind.	6
Total Hours		30

Textbook:

1. “Value Education”, compiled by Centre for Human Excellence, Nehru Arts and Science College.

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Quiz	Attendance	Total
5	5	6	3	3	3	25

Course Designed by	Verified by	Checked by	Approved by

Course Code		Title	
18U4HVVY402		Human Excellence: Human values and Yoga Practice II	
Semester: III & IV	Credit: 2	CIA: 25 Marks	ESE: 25 Marks

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 materials with reference to institute health

Course Outcome (CO):

At the end of the course, students are expected

CO 1	To become more aware of their self and their relationships and would have better reflective and discerning ability.
CO 2	It is hoped that they would be able to apply what they have learnt to their own self in different ordinary day-to-day settings in real life with higher commitment and courage.
CO 3	To enable students to lead a practical life adding value to human relations.
CO 4	To have the basic Knowledge on Simplified Physical Exercises and Asanas and Meditation

Course Content

Instructional Hours / Week: 1

Unit	Description	Text Book	Chapter
I	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 -Citizens Charter - Emotional Intelligence.	1	1,4
Instructional Hours			6
II	Impact of Modern Education and Media on Values: Impact of Science and Technology on Values; Effects of computer aided media on Values (Internet, e-mail, Chat etc.); Role of teacher in the preservation of tradition and culture;	1	5
Instructional Hours			6
III	Eradication of worries - Maintaining youthfulness - Greatness of friendship – Refinement of worries - Neutralization of anger- Intelligent quotient (IQ), Emotional quotient (EQ), Spiritual Quotient (SQ)	1	2,3
Instructional Hours			6

IV	Standing Posture: Tadasana, Padahasthasana, Virabhadrasana; Sitting posture: Ustrasana, Ardha Matsyendrasana, Paschimottanasana.	2	4,5
Instructional Hours			6
V	Supine posture: Sarvangasana, Halasana, Chakrasana. Prone posture: Bhujangasana, shalabhasana; Dhanurasana; Balancing postures: Vrikshasana, Natarajasana, Utkatasana; Pranayama: Bhastrika, Bhramari, NadiShodhan.	2	6,9
Instructional Hours			6
Total Hours			30

Textbook(s):

1. Kiran, D.R. "Professional Ethics & Human Values", TATA McGraw Hill Education.
2. Chandrasekaran, 1999. Sound Health through yoga, Prem Kalyan Publications, Madurai.

Reference Books :

1. Vethathiri Maharishi, 2011, "Value Education", Vethathiri Publication, Erode
2. Thathuvagnani Vethathiri Maharishi, 2014, "Simplified Physical Exercises". Vethathiri Publications

Tools for Assessment (25 Marks)

CIA I	CIA II	CIA III	Assignment	Quiz	Attendance	Total
5	5	6	3	3	3	25

Course designed by	Verified by HoD	Checked by	Approved by