HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI-620 002.
DEPARTMENT OF COMPUTER SCIENCE
CHOICE BASED CREDIT SYSTEM
BACHELOR OF COMPUTER APPLICATIONS
(For Candidates admitted from June 2015 onwards)

Semester	Part	Course	Title of the Course	Code	Hrs / Wk	Credits	Marks
I	I	Language	Tamil Paper I / Hindi Paper I / French Paper I	U15TL1TAM01 U15HN1HIN01 U15FR1FRE01	6	3	100
	II	English	English Paper I	U15EL1GEN01	6	3	100
	III	Major Core-1	Problem Solving Using C (Theory cum Lab)	U15CA1MCT01	7	6	100
		Allied-1 (Compulsory)	Digital Computer Fundamentals	U15CA1ACT01	4	3	100
	III	Allied-2 (Compulsory)	Allied Paper II Applied Mathematics I	U15MA1ACTO5	4	3	100
	IV	Environmental Studies	Environmental Studies	U15RE1EST01	2	2	100
	IV	Value Education	Ethics I/ Bible Studies I/ Catechism I	U15VE2LVE01 U15VE2LVB01 U15VE2LVC01	1	-	-
			TOTAL		30	20	600
II	I	Language	Tamil Paper II/ Hindi Paper II/ French Paper II	U15TL2TAM02 U15HN2HIN02 U15FR2FRE02	5	3	100
	II	English	English Paper II	U15EL2GEN02	6	3	100
	III	Major Core-2	Data Structures and Algorithms	U15CA2MCT02	5	5	100
	III	Major Core-3	Data Structures Lab	U15CA2MCP03	5	4	100
	III	Allied-3 (Compulsory)	Allied Paper III Applied Mathematics II	U15MA2ACT11	4	3	100
	IV	SkillBasedElective-1	Soft Skill Development	U15RE2SBT01	2	2	100
	IV	SkillBasedElective-2	Rural Enrichment and Sustainable Development	U15RE2SBT02	2	2	100
	IV	Value Education	Ethics I/ Bible Studies I/ Catechism I	U15VE2LVE01 U15VE2LVB01 U15VE2LVC01	1	1	100
			TOTAL		30	23	800
III	I	Language	Tamil Paper III/ Hindi Paper III/ French Paper III	U15TL3TAM03 U15HN3HIN03 U15FR3FRE03	6	3	100
	II	English	English Paper III	U10EL3GEN03	6	3	100
	III	Major Core-4	Database Systems	U15CA3MCT04	5	5	100
	III	Major Core-5	RDBMS Lab	U15CA3MCP05	5	5	100
	III	Allied-4 (Optional)	Allied Optional Paper I Applied Mathematics III	U15MA3AOT13	4	3	100
	IV	SkillBasedElective-3	Multimedia and Animation Lab	U15CA3SBP03	2	2	100
	IV	Gender Studies	Gender Studies	U15WS3GST01	1	1	100
	IV	Value Education	Ethics / Bible Studies / Catechism	U12VE4LVE02 U12VE4LVB02 U12VE4LVC02	1	-	-
			TOTAL		30	22	700
IV	I	Language	Tamil Paper IV/Hindi Paper IV/ French Paper IV	U15TL4TAM04 U15HN4HIN04 U15FR4FRE04	5	3	100
	II	English	English Paper IV	U13EL4GEN04	6	3	100
	III	Major Core-6	Java Programming	U15CA4MCT06	5	5	100
	III	Major Elective-1	Java Programming Lab / Unix Shell Programming Lab / Open Source Technology Lab	U15CA4MEP01/ U15CA4MEP02/ U15CA4MEP03	5	5	100
	III	Allied-5 (Optional)	Allied Optional Paper II Basics of Accounting	U15CO4AOT08	4	4	100
	III	Allied-6 (Optional)	Allied Optional Paper III Accounting Package Lab –Tally	U15CA4AOP03	4	3	100
	IV	Value Education	Ethics II/ Bible Studies II/ Catechism II	U12VE4LVE02 U12VE4LVB02 U12VE4LVC02	1	1	100

			TOTAL		30	24	700
V	III	Major Core-7	Computer Organization and Architecture	U15CA5MCT07	5	4	100
	III	Major Core-8	Visual Programming	U15CA5MCT08	5	4	100
	III	Major Core-9	Computer Networks	U15CA5MCT09	5	4	100
	III	Major Core-10	Visual Programming Lab	U15CA5MCP10	5	4	100
	III	Major Elective-2	Embedded Systems/ Computer Graphics	U15CA5MET01/ U15CA5MET02	5	5	100
	IV	Non Major Elective-1	Desktop Publishing Lab	U15CA5NMP01	2	2	100
	IV	Skill Based Elective-4	Quantitative Aptitude	U15CA5SBT04	2	2	100
	IV	Value Education	Ethics III/ Bible Studies III/ Catechism III	U13VE6LVE03 U12VE6LVB03 U12VE6LVC03	1	-	-
			TOTAL		30	25	700
VI	III	Major Core-11	Software Engineering	U15CA6MCT11	6	5	100
	III	Major Core-12	Operating Systems	U15CA6MCT12	6	5	100
	III	Major Core-13	Web Application Development	U15CA6MCT13	6	5	100
	III	Major Elective-3	Web Application Development Lab/ Software Development Lab	U15CA6MEP03/ U15CA6MEP04	5	5	100
	IV	Non Major Elective-2	Multimedia Lab - Photoshop	U15CA6NMP02	2	2	100
	IV	Skill Based Elective-5	Office Tools Lab	U15CA6SBP05	2	2	100
	IV	Skill Based Elective-6	Research Methodology	U15DS6SBT06	2	2	100
	IV	Value Education	Ethics III/ Bible Studies III/ Catechism III	U13VE6LVE03 U12VE6LVB03 U12VE6LVC03	1	1	100
	V	Extension Activity	RESCAPES-Impact Study of Project	U15RE6ETF01	-	1	100
			TOTAL		30	28	900
			GRAND TOTAL		**180**	**142**	**4400**
			ED : Extra Credit (Compulsory) : Mini Project	U15CA6ECP01		2	100

List of Allied Optional Courses Offered by the Department to Other Students

Semester	Part	Course	Title of the Course	Code	Hrs/Wk	Credits	Marks
III	III	Allied-4 (Optional)	Multimedia and its Applications	U15CA3AOT03	4	3	100
			Allied Optional Paper III Accounting Package Lab –Tally	U15CA4AOP03			
IV	III	Allied-5 (Optional)	E-Learning Techniques	U15CA4AOT03	4	3	100
	III	Allied-6 (Optional)	Windows and Internet Concepts	U15CA4AOT04	4	3	100

List of Non Major Elective Courses

Semester	Part	Course	Title of the Course	Code	Hrs/Wk	Credits	Marks
V	IV	Non Major Elective-1	Desktop Publishing Lab	U15CA5NMP01	2	2	100
VI	IV	Non Major Elective-2	Multimedia Lab - Photoshop	U15CA6NMP02	2	2	100

TAMIL DEPARTMENT

BA/ B.SC/ B.COM DEGREE

Part - I : Language: Tamil Paper - 1

Total Hours : 90	**Code : U15TL1TAM01**
Hrs : 6Hrs /Wk	**Marks : 100**
Credit : 3	

நோக்கங்கள்:

1. தாய்மொழியை வலுவோடும், பொலிவோடும் கையாளும் வழி முறைகளைக் கண்டறியச் செய்தல்.

2. தமிழ் இலக்கியப் பரப்பையும், பாரம்பரியத்தையும் அறிமுகப்படுத்துதல்.

3. படைப்பாற்றலை வளர்த்துக் கொள்ள ஊக்கம் அளித்தல்.

4. உயர்ந்த பண்பாடுகளின் அடிப்படையில் வாழ்க்கையை அமைத்துக் கொள்ளும் உள்ளார்ந்த விருப்பத்தைத் தோற்றுவித்தல்.

5. மனித உரிமைகளை வலியுறுத்தி மனித நேயத்தை வளர்த்தல்.

6. நாம் வாழும் நாட்டையும், உலகையும் பற்றிய விழிப்புணர்வை ஊட்டி சமய நல்லிணக்கத்தையும், சமூக நல்லுறவையும் பேணிக்காக்கத் துணைப்புரிதல்.

7. ஆரோக்கியமான சிந்தனைகள் வளர ஆக்கம் அளித்தல்.

பயன்கள்:

1. தற்காலத் தமிழ் இலக்கிய வரலாற்றை வளர்க்க வழிகாட்டல்.

2. மாணவர்களின் தன்னம்பிக்கையை வளர்த்தல்

3. வாழ்வியல் நெறிகளை உணர்த்தல்.

4. பிழையின்றி எழுத பேச பயிற்சி அளித்தல்.

<div align="center">பாடத்திட்டம்</div>

அலகு:1 செய்யுள்

    1. பாரதியார் கவிதைகள் - தமிழ் கண்ணன் என் சேவகன்
    2. பாரதிதாசன் கவிதைகள் - உலகம் உன்னுடையது
    3. உமர்கய்யாம் - உமர்கய்யாம் பாடல்கள

4. பட்டுக்கோட்டையார் - செய்யும் தொழிலே தெய்வம்
5. ந. பிச்சமூர்த்தி – ஒளியின் அழைப்பு
6. வைரமுத்து – ஐந்து பெரிது ஆறு சிறிது
7. சிற்பி – ஒரு கிராமத்து நதி

அலகு:2 செய்யுள்

8. கல்யாண்ஜி – பேசும்பார் என் கிளி
9. நிர்மலா சுரேஸ் - தைலச்சிமிழும் தச்சன் மகளும்
10. இரா. மீனாட்சி – ஒரு கோதை
11. விஜி – குரங்கு மனிதன்
12. பா. சத்திய மோகன் - எங்கெங்கு காணினும்
13. ஹைகூ கவிதைகள்

அலகு:3

தமிழ் இலக்கிய வரலாறு

20-ஆம் நூற்றாண்டு (தற்காலம்)

தமிழாய்வுத்துறை வெளியீடு

அலகு:4

படைப்பிலக்கியம் - சிறுகதைத் தொகுப்பு

அலகு:5

பொதுப்பகுதி   - கலைச்சொற்கள்

தமிழாய்வுத்துறை வெளியீடு

பாட நூல்கள்

செய்யுள்	- தமிழாய்வுத்துறை வெளியீடு
தமிழ் இலக்கிய வரலாறு	- தமிழாய்வுத்துறை வெளியீடு
சிறுகதைத் தொகுப்பு	- தமிழாய்வுத்துறை வெளியீடு
கலைச்சொற்கள்	- தமிழாய்வுத்துறை வெளியீடு

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI-620002
DEPARTMENT OF HINDI
PART – I LANGUAGE HINDI FOR B.A, B.Sc & B.Com
HINDI PAPER-I SHORT STORY, PROSE, GRAMMAR
SEMESTER – I

HRS/WEEK : 6   **CODE: U15HN1HIN01**
CREDITS : 3   **MARKS : 100**

UNIT – I : Purasakar, Sukamaya Jeevan, Ganga Singh, Machuye Ki Beti,
Maharaj Ka Ilaj

UNIT- II : Maatru vandana, Chandini, Thitalii, Divali, Seekho.

UNIT- III : Sadak Ke Niyam, Bhagavan mahaveer, Prithvi Ka swarga,
Mahan ganithagya Ramanujam, Birbal Ki Chathuraye.

UNIT- IV : General Grammar
(Sanghya, Visheshan, ling, Vachan, Kriyavisheshan)

UNIT- V : Anuvad Abhyas – II

Books   Prescribed :
- Galpa Sanchayan   - D.B.H.P. Sabha Publishers, Chennai-17
- Naveen Hindi Patamala – I   - D.B.H.P. Sabha Publishers, Chennai-17
- Naveen Hindi Patamala – II   - D.B.H.P. Sabha Publishers, Chennai-17
- Sugam Hindi Vyakaran   - D.B.H.P. Sabha Publishers, Chennai-17
- Anuvad Abhyas – II   - D.B.H.P. Sabha Publishers, Chennai-17

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI – 2
DEPARTMENT OF FRENCH
<u>SYLLABUS</u>
SEMESTER I
PART I – LANGUAGE - FRENCH PAPER I [GRAMMAR & CIVILISATION
(ÉCHO A1 2e édition)]
(For candidates admitted 2013 onwards)

HRS/WEEK : 6   **CODE : U15FR1FRE01**
CREDIT : 3   **MARKS : 100**

Unit 1 Parcours d'initiation ; Vous comprenez

La différence entre le prénom et le nom, les nationalités, les nombres, les professions

La présentation, le genre et le nombre d'un nom, l'interrogation et la négation – l'identité, les lieux de la ville, les mots du savoir-vivre – saluer, remercier – l'espace francophone.

Unit 2 Au travail!

La conjugaison des verbes du 1er groupe, des accords, les articles – l'état civil, des personnes et des objets caractéristiques d'un pays – exprimer ses gouts – première approche de la société française.

Unit 3 On se détend!

La conjugaison des verbes irréguliers, le future proche, les pronoms après une préposition – les loisirs – proposer, accepter, refuser, demander une explication – première approche de l'espace de France, repérages de quelques lieux de loisirs

Unit 4 Racontez-moi ! ; Bon voyage !

Le passé composé, la date et l'heure – les moments de la journée, de l'année, les événements liés au temps – dire ce qu'on a fait – les rythmes de vie en France, des personnalités du monde francophone.

La comparaison, les adjectifs démonstratifs et possessifs – les voyages et les transports – négocier une activité, faire les recommandations – les transports en France

Unit 5 Bon appétit!

L'emploi des articles, la forme possessive – la nourriture, les repas, la fête – les situations pratiques à l'hôtel et au restaurant – les habitudes alimentaires en France.

TEXT BOOKS :

ECHO A1 – METHODE DE FRANÇAIS & CAHIER PERSONNEL D'APPRENTISSAGE
Authors: J. Girardet and J. Pécheur
Publication: CLÉ INTERNATIONAL, 2012.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2.
2015 - 2016
I B.A., B.Sc., B.Com., B.R.Sc., B.C.A., B.B.A.,SEMESTER I
PART   II - ENGLISH 1 - GENERAL ENGLISH PAPERI

HOURS – 6 PER WEEK   **CREDIT : 3**

                                                                  CODE : U15EL1GEN01

OBJECTIVES

* Students learn to use LSRW skills and advanced communication skills in the context required in their daily life.
* The students learn to analyze and express their self and their concern and responsibilities to the world around.
* The students learn how English is used in literary writing so as to imbibe the spirit of using the standard language for communication.

UNIT I - I, ME, MYSELF

Listening for **s**pecific information in instructions and directions

Speaking about oneself, family and friends, likes, dislikes, strengths, weaknesses, profession, talents, emotions, feelings, incidents, reactions, opinions, views, aim, vision.

Reading for comprehension of routine work.

Writing -Paragraph guided

Grammar- Articles, Prepositions, Punctuation

Vocabulary-Meanings, Synonyms, Antonyms

Composition –Guided Creative writing

TEXTS

Listening	-	*This is the Photograph of me* by Margaret Atwood
Speaking	-	*The Mayonnaise Jar*
Reading	-	*In Prison* by Jawaharlal Nehru (edited)
Writing	-	Othello's soliloquy (extract from Shakespeare's *Othello*)

UNIT II -MY FAMILY AND FRIENDS

Listening to identify the persons/ places/ things from descriptions

Speaking -   Describing incidents, favorite places, traits of a person, analyzing the nature of a person.

Reading to get specific information and to analyze characters

Writing -   Letters (personal),paragraphs-family profile and history

Grammar -   **adjectives and verbs**

Vocabulary-   **synonyms and antonyms** in context

Composition -   **Guided paragraph**

TEXTS

Listening	-	*Night of the Scorpion* by Nissim Ezekiel
Speaking	-	*The Old Folks at Home* by Alphonse Daudet (edited)
Reading	-	*Will you? Daddy* (Extract from Reader's digest)
Writing	-	conversation among King Lear and his daughters professing their love for their father (extract from Shakespeare's *King Lear Act I Scene I*)

UNIT III -THE WORLD AROUND ME

Listening To   identify specific information

Speaking –   Discussing and expressing opinions

Reading To   infer meaning

Writing   Descriptive and Diary writing

Grammar   Uses of 'be' Verbs – subject verb concord

Vocabulary   Coining new words with Prefix and suffix- converting one part of speech to another

Composition - Essay writing

TEXTS

Listening	-	*Snake* by D.H. Lawrence (poem)
Speaking	-	*Floating Fantasy* by Vinu Abraham (Prose)
Reading	-	*Discovery* (ed.) (play)
Writing	-	*A Handful of Dates* by Tayeb Salih (Short story)

UNIT IV - MY CONCERN AND RESPONSIBILITIES

Listening to	short speeches and getting main concern- Global comprehension
Speaking	Expressing opinions, concerns and responsibilities
Reading To	detect one's perspective
Writing	Debate and Dialogue
Grammar	Sentence patterns (5 basic types)
Vocabulary	Appropriate words in the context ,coinage of new words , use of phrases

Composition-Imaginative writing

TEXTS

Listening	-	*I have a Dream* by Martin Luther King Jr(edited)
Speaking	-	*What I have lived for?* by Bernard Russell
Reading	-	*Three days to see* by Helen Keller(edited)
Writing	-	Quality of Mercy (Portia court scene)
		(extract from Shakespeare's *The Merchant of Venice*)

UNIT V - MY PROFESSIONAL WORLD

Listening to	short profile to get details –global comprehension
Speaking	Discussion on secrets of success learnt from success stories
Reading to	**i**nfer meaning – to trace the development and analyze the ratio of development
Writing resume and E-mail writing	
Grammar- Four Types of sentences	
Vocabulary-	Idioms and phrases- meaning
Composition –	Formal and imaginative writing

TEXTS

Listening	-	Profile of a successful personality
Speaking	-	Success story of Indra Krishna moorthy Nooyi
Reading	-	*The Verger* by Somerset Maugham

Prescribed Book:
English for Communication – PoGo publication Trichy

MAJOR CORE 1: PROBLEM SOLVING USING C

Hours/Week: 7   **Code: U15CA1MCT01**
Credits: 6   **Marks:100**

OBJECTIVE
   To develop programming skills using C language.
   To understand the concepts of Structure oriented programming.

UNIT I

CONSTANTS, VARIABLES, AND DATA TYPES: Introduction – Character Set – C Tokens
– Keywords and Identifiers – Constants – Variables – Data Types – Declaration of Variables and
Storage Class – Assigning Values to Variables – Defining Symbolic Constants **OPERATORS
AND EXPRESSIONS:** Introduction - Arithmetic Operators - Relational Operators - Logical
Operators - Assignment Operators - Increment and Decrement Operators- Conditional Operators
- Bitwise Operators - Special Operators - Arithmetic Expressions - Evaluation of Expressions -
Precedence of Arithmetic Operators - Some Computational Problems.

UNIT II

MANAGING INPUT AND OUTPUT OPERATORS: Introduction - Reading a
Character - Writing a Character – Formatted Input - Formatted Output.
DECISION MAKING AND BRANCHING: Introduction - Decision Making with if Statement
- Simple if Statement- The if else Statement - Nesting of if...else Statements - The Else if Ladder
- Switch Statement - ?: Operator - Goto Statement.
 DECISION MAKING AND LOOPING: Introduction – The While Statement - The do Statement
– The for Statement - Jumps in Loops.

UNIT III
 ARRAYS: Introduction – One-dimensional Array – Two-dimensional Arrays - Initializing Two
- dimensional Arrays – Multi-dimensional Arrays. **HANDLING OF CHARACTER
STRINGS:** Introduction - Declaring and Initializing String Variables - Reading Strings from
Terminal – Writing Strings to Screen - Arithmetic Operations on Characters - Putting Strings
Together - Comparison of Two Strings – String- handling Functions - Table ofStrings.

UNIT IV
USER DEFINED FUNCTIONS : Introduction - Need for User-defined Functions - A Multi-
function Program – Elements of User-defined Functions – Definition of Functions - Return
Values and their Types -Function Calls – Function Declaration - Category of functions - No
Arguments and No Return Values - Argument but No Return Values - Arguments with Return
Values – No Arguments but Returns a Value – Functions that Return Multiple Values - Nesting
of Functions - Recursion – Passing Arrays to Functions – Passing Strings to Functions - The
Scope, Visibility and Lifetime of Variables – Multi-file Programs.

STRUCTURES AND UNIONS : Introduction - Structure Definition - Giving Values to Members - Structure Initialization - Comparison of Structure Variables – Operations on Individual Members - Arrays of Structures - Arrays Within Structures – Structures Within Structures - Structures and Functions - Unions - Size of Structures - Bit Fields.

UNIT V

POINTERS : Introduction - Understanding Pointers - Accessing the Address of a Variable - Declaring and Initializing Pointers - Accessing a Variable through its Pointer - Chain of Pointers - Pointer Expressions - Pointer Increments and Scale Factor - Pointers and Arrays - Pointers and Character Strings – Arrays of Pointers - Pointers as Functions Arguments - Functions Returning Pointers - Pointers to Functions – Pointers and Structures.

FILE MANAGEMENT IN C: Introduction - Defining and Opening a File - Closing a File - Input/Output Operations on Files - Error Handling During I/O Operations - Random Access to Files

- Command Line Arguments.

TEXT BOOKS

1.   Balagurusamy E.,   **"Programming in ANSI C"**, 6th Edition 2013, Tata McGraw-Hill Education private Ltd., New Delhi.

REFERENCE BOOKS

1.   Ashok N. Kamathana , **"Programming With ANSI and Turbo C"**, 2006, Sixth Edition, Dorling Kindersley.

2.   Srivatsava S.K., **"C in depth"**, 2000, BPB Publications, New Delhi.

3.   Yashavant Kanethkar**, "Let us C"**, 2005, BPB Publications, New Delhi.

4.   Herbert Schildt, **"C The Complete Reference"**, 2000, Fourth Edition Tata McGraw Hill Publishing Company Ltd., New Delhi.

5.   Venugopal K.R., Prasad S.R**., "Mastering C"**,2007,Tata McGraw Hill Publishing Company Ltd, New   Delhi .

MAJOR CORE 1: PROBLEM SOLVING USING C
(Theory cum Lab)

Hours/Week: 7   **Code: U15CA1MCT01 / U15CS1MCT01**
 Credits: 6   **Marks:100**

OBJECTIVE
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         To understand the concepts of Structure oriented programming.

UNIT I

CONSTANTS, VARIABLES, AND DATA TYPES: Introduction – Character Set – C Tokens – Keywords and Identifiers – Constants – Variables – Data Types – Declaration of Variables and Storage Class – Assigning Values to Variables – Defining Symbolic Constants **OPERATORS AND EXPRESSIONS:** Introduction - Arithmetic Operators - Relational Operators - Logical Operators - Assignment Operators - Increment and Decrement Operators- Conditional Operators - Bitwise Operators - Special Operators - Arithmetic Expressions - Evaluation of Expressions - Precedence of Arithmetic Operators - Some Computational Problems.

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DECISION MAKING AND LOOPING: Introduction – The While Statement - The do Statement – The for Statement - Jumps in Loops.

UNIT III
ARRAYS: Introduction – One-dimensional Array – Two-dimensional Arrays - Initializing Two - dimensional Arrays – Multi-dimensional Arrays. **HANDLING OF CHARACTER STRINGS:** Introduction - Declaring and Initializing String Variables - Reading Strings from Terminal – Writing Strings to Screen - Arithmetic Operations on Characters - Putting Strings Together - Comparison of Two Strings – String- handling Functions - Table ofStrings.

UNIT IV
USER DEFINED FUNCTIONS : Introduction - Need for User-defined Functions - A Multi-function Program – Elements of User-defined Functions – Definition of Functions - Return Values and their Types -Function Calls – Function Declaration - Category of functions - No Arguments and No Return Values - Argument but No Return Values - Arguments with Return Values – No Arguments but Returns a Value – Functions that Return Multiple Values - Nesting of Functions - Recursion – Passing Arrays to Functions – Passing Strings to Functions - The Scope, Visibility and Lifetime of Variables – Multi-file Programs.

STRUCTURES AND UNIONS : Introduction - Structure Definition - Giving Values to Members - Structure Initialization - Comparison of Structure Variables – Operations on Individual Members - Arrays of Structures - Arrays Within Structures – Structures Within Structures - Structures and Functions - Unions - Size of Structures - Bit Fields.

UNIT V

POINTERS : Introduction - Understanding Pointers - Accessing the Address of a Variable - Declaring and Initializing Pointers - Accessing a Variable through its Pointer - Chain of Pointers - Pointer Expressions - Pointer Increments and Scale Factor - Pointers and Arrays - Pointers and Character Strings – Arrays of Pointers - Pointers as Functions Arguments - Functions Returning Pointers - Pointers to Functions – Pointers and Structures.
FILE MANAGEMENT IN C: Introduction - Defining and Opening a File - Closing a File - Input/Output Operations on Files - Error Handling During I/O Operations - Random Access to Files - Command Line Arguments.

TEXT BOOKS
1.   Balagurusamy E.,   **"Programming in ANSI C"**, 6th Edition 2013, Tata McGraw-Hill Education private Ltd., New Delhi.

REFERENCE BOOKS

1.   Ashok N. Kamathana , **"Programming With ANSI and Turbo C"**, 2006, Sixth Edition, Dorling Kindersley.

2.   Srivatsava S.K., **"C in depth"**, 2000, BPB Publications, New Delhi.

3.   Yashavant Kanethkar**, "Let us C"**, 2005, BPB Publications, New Delhi.

4.   Herbert Schildt, **"C The Complete Reference"**, 2000, Fourth Edition Tata McGraw Hill Publishing Company Ltd., New Delhi.

5.   Venugopal K.R., Prasad S.R**., "Mastering C"**,2007,Tata McGraw Hill Publishing Company Ltd, New Delhi .

LAB

To implement the following concepts in "C":

1. Simpleprograms.

2. ControlStructure.

3. Arrays.

4. Function.

5. Strings.

6. Structures and Unions.

7. Pointers.

8. Sequential File Access.

9. Random File Access.

10. Command Line Arguments.

Hours/Week: 4   **Code: U15CA1ACT01**
Credits:3   **Marks:100**

OBJECTIVE:
To comprehend the different logic circuits and flip-flops.
To get full-fledged knowledge on encoders, decoders, adders, counters.

UNIT I

NUMBER SYSTEMS: Decimal - Binary - Octal - Hexadecimal - Conversion from one number system to another - Codes: ASCII - Excess 3 - Gray – BCD Code - Binary Addition, Subtraction, Unsigned Binary numbers – Sign-Magnitude numbers - 2"s Complement Representation - 2"s Complement arithmetic – Error Detecting codes – Error Correcting codes.

UNIT II

BASIC LOGIC GATES: Inverters - OR gates - AND gates - Boolean algebra - NOR gates, NAND gates – DeMorgan"s Theorem - Boolean Laws And Theorems.
K MAP: Sum of Products method - Truth Table to Karnaugh map - Pairs, Quads and Octects – Karnaugh map simplification methods - Don"t care conditions - Product of sums method.

UNIT III

COMBINATIONAL LOGIC CIRCUITS: Multiplexers - Demultiplexers - Decoders - Encoders - Arithmetic Building Blocks - Half and Full adder – Half subtractor – Full subtractor - Adder- Subtractor.

UNIT IV

FLIP-FLOPS: SR Flip Flop, D Flip Flop, JK Flip Flop, T Flip Flop, Edge-Triggered Flip Flop, Master Slave Flip Flop.
SEQUENTIAL CIRCUITS: Flip Flop Input Equations - State Table - State Diagram - Design Example - Design Procedure.

UNIT V

REGISTERS, COUNTERS: Types of registers - Serial in Serial Out – Serial in Parallel out – Parallel In Serial Out – Parallel In parallel Out.
COUNTERS: Asynchronous or Ripple Counter – Ring counter – Synchronous Counter.

TEXT BOOKS

1. Albert Paul Malvino, Leach Donald. P, **Digital Principles and Applications**, 2002, Tata McGraw Hill Publishing Company Ltd, New Delhi.

   UNIT   I   Chapters 5 (5.1 - 5.8), 6 (6.1-6.6)
   UNIT   II Chapters 2 (2.1-2.6), 3 (3.1-3.8)
   UNIT   III Chapters 4 (4.1 - 4.7), 6 (6.7,6.8)

2. Morris Mano, **Computer System Architecture**, 2005, Prentice Hall of India Private Ltd, New Delhi.

   UNIT   IV Chapter 1 (1.6, 1.7)
   UNIT   V Chapter 12 (12.1 - 12.6)

REFERENCE BOOKS

1. Albert Paul Malvino and Brown Jerald. Digital **Computer Electronics**, 2000, Tata McGraw-Hill Publishing Company Ltd, New Delhi.

2. Anokh Singh, Chabra .A. K, **Fundamentals of digital electronics and Microprocessors**, 2003, S.Chand and Company Ltd, New Delhi.

3. Bartee Thomas.C, Digital **Computer Fundamentals**, 2006, Tata McGraw-Hill, Publishing Company Ltd, New Delhi.

4. Morris Mano .M, **Digital Logic and Computer Design**, 2006, Prentice Hall of India Private Ltd, New Delhi.

5. Wakerly John. F, **Digital Design Principles and Practices**, 2006, Prentice Hall of India Private Ltd, New Delhi.

HOLY CROSS COLLEGE (AUTONOMOUS)
TIRUCHIRAPPALLI – 620 002.
(For the candidates admitted
from2015 onwards) SEMESTER - I
ALLIED 2 : APPLIED MATHEMATICS I
(for BCA and B.Sc. Computer science students)

Total Hours: 60
Hours/Week: 4   **Code:U15MA1ACT05**
Credits: 3   **Marks: 100**
OBJECTIVE :
To enable the students to understand the concept of mathematical logic. To provide
sufficient knowledge of statistics which enables them to   compute   various   statistical
measures.

UNIT 1: MATHEMATICAL LOGIC
Introduction – Notations – Negation – Conjunction – Disjunction - Conditional and bi-
conditional Statements – Statement Formulas – Truth Table

UNIT II : MATHEMATICAL LOGIC (CONTINUED)
Well formed formulae – Tautology – Equivalence of formulae – Truth table - Truth table
method – Replacement Process.

UNIT III: MEASURES OF CENTRAL TENDENCY
Mean – Median – Mode

UNIT IV: DISPERSION, SKEWNESS& KURTOSIS
Range – Quartile deviation – Mean deviation &Standard deviation – Karl Pearson's Coefficient
of Skewness – Kurtosis.

UNIT V : CORRELATION AND REGRESSION
Karl Pearson's Coefficient of Correlation – Spearman's Rank Correlation Coefficient –
Regression- Lines of Regression.

TEXT BOOKS:
1.   Treatment and content as in G.S.S. BHISHMA RAO, Discrete structure and graph
theory(2006) , Scitech Publications Pvt Ltd., Hydrabad, for Units I & II
UNIT I :   Chapter 1 : Sections 1- 5
UNIT II : Chapter 1 : Sections 6- 8
2.   Treatment and content as in R.S.N. PILLAI & BHAGAVATHI (2007) , Statistics Theory
&practice ,S.Chand and Company Ltd., for Units III , IV , V
UNIT III : Chapter 9
UNIT IV : Chapter 10 & 11 **UNIT V :** Chapter 12 & 13

REFERENCE BOOKS :

1.   J.N.Kapur&H.C..Saxena(2003), "MATHEMATICAL STATISTICS",
2.   Shukla M.C(2000), "STATISTICS", S .Chand and S.Chand and Company, New
        Delhi.company, New Delhi.
3.   Vittal .P.R.,(2004), "BUSINESS STATISTICS", Margham publishers, Chennai.

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI-2
B.A /B.Sc./B.Com/B.R.SC/B.C.A/B.B.A DEGREE EXAMINATION
SEMESTER I
ENVIRONMENTAL STUDIES

Hrs: 2/Week   **CODE: U15RE1EST01**
                                                                          CREDITS:2

Unit I–Awareness and Natural Resources

Awareness of Environmental issues and management strategies–need of the hour Renewable and non-renewable resources-uses, present status and management of forest, water, land and energy resources.

Unit II–Ecosystems and Biodiversity

Ecosystem–concepts, structure and types–concept of food chain sand food web–causes and effects of weakening food chains

Biodiversity–concept of genetic, species and ecological biodiversity–ecological and economic values–India, a mega diversity country, hotspots–threats to biodiversity and conservation measures.

Unit III–Environmental Pollution

Causes, effects and control of water, and air pollution–global warming–ozone depletion– Nuclear hazards.

Unit IV–Human population and Environment

Population growth at national and global level.

World food production-Effects of modern agriculture on land and Eco systems-GMOs and related issues

Environmental pollutions and diseases-malaria- chikungunya

Unit V–Environment and Social Issues

Rich–poor wide–at national and global levels

Urbanization –slums

Changing value systems -AIDS Family

welfare programs

REFERENCES:
1. Agarwal,K.C.(2001). Environmental Biology, Nidi Publication Ltd. Bikaner. Chairas,D.D.(1985).Environmental Science. The Benjamin Cummings Publishing company.,Inc.
2. Clarke George,L. (1954). Elements of Ecology. Hohn Wiley and SONS, Inc.
3. Hodges,L. (1977). Environmental Pollution, II Edition. Holt, Rinehart and Winston, New York. Krebs,C.J.(2001). Ecology.VI Edition. Benjamin Cummings.

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI-2
B.A. /B.Sc. / B.Com. / B.R.Sc. / B.C.A. DEGREE COURSE
LIFE ORIENTED EDUCATION
ETHICS – I: RELIGION AND VALUE SYSTEMS

HRS / WK :1   CODE: U15VE2LVE01
                                                          CREDITS :1
                                                          MARKS : 100

OBJECTIVES:

- To Understand My and Other Religions and Culture
- To Appreciate My and Other Religions and Culture
- To Learn from other Religions and Culture
- To Interact with My and Other Religions and Culture to enhance My faith in My religion.
- To Help the students to become aware of the negative forces of religions.

UNIT – I: RELIGION

God – concept of faith, Faith, Meaning, Definition, Nature, Characteristics and Basic values of different religions. Impact of Globalization on religion – Importance of worship in holy places – celebration, come-union, socialization.

UNIT – II: DIFFERENT RELIGIONS

Basic characteristics and basic thoughts- Buddhism, Christianity, Hinduism, Islam, Jainism and Sikhism

UNIT – III: UNITY OF RELIGION

Unity of Vision and Purpose- Respect for Other's Faith, Inter Religious Co-operation, Religious Pluralism as a fact and Religious Pluralism as a value.

UNIT – IV: FUNDAMENTALISM, COMMUNALISM AND SECULARISM

Meaning and impact of Fundamentalism-Communalism-Violence and terrorism – Tolerance – Secularism - Individualism

UNIT – V: VALUE SYSTEMS

Value and Value Systems - Moral Values -Individuals and the need to stand for values in the concept of Globalization – Consumerism - Will power to live up to your values - Healthy body for empowerment – Physical health and Mental hygiene, food and exercises.

REFERENCES:
1. Social Analysis (a course for all first year UG students), 2001. Department of Foundation Courses, Loyola College, Chennai-34.
2. Special topics on Hindu Religion, 2001.Department of Foundation Courses,Loyola College, Chennai-34.
3. Religion: the living faiths of the world, 2001. Department of Foundation Courses, Loyola College, Chennai-34.
4. Sydney Am Meritt, 1997. Guided meditations for youth.
5. Marie Migon Mascarenhas,1986. Family life education- Value Education, A text book for College students.

HOLY CROSS COLLEGE(AUTONOMOUS) TRICHIRAPALLI-2.
B.A/ B.Sc/ B.Com/ B.R.Sc/ B.C.A DEGREE COURSES
LIFE ORIENTED EDUCATION
BIBLE STUDIES – I: NEW TESTAMENT

HRS / Wk :1   **CODE: U15VE2LVB01**
                                                             CREDIT : 1
                                                             MARKS : 100

OBJECTIVE:
- Developing the passion for the Word of God – Jesus and inculcating the thirst of Missionaries being a disciple of Christ.

UNIT – I: BIBLE – THE WORD OF GOD

- Books of the Bible – Division into Old Testament and New Testament – history of the Bible-

- Messiah Prophecies(Isaiah 9:6,40:3,53:1-12,61:1-3,Micah 5:2)

- The Birth and Ministry of John the Baptist (Luke 1:1-80,Mat 3:1-17,14:1-12)

- The Birth, Passion and Resurrection of Jesus (Luke 1:26-80,2:1-52,John 1 :18-21)

UNIT – II: MINISTRY OF JESUS

- Miracles (Mark 2:1-12,Luke 4:38-41,6:6-11,7:1-17,8:26-56,John 2:1-12)

- Parables (Luke 6:46-49,8:4-15,10:25-37,15:1-32)

- Preaching

  ➢ Sermon on the mount (Mat 5-7)

  ➢ Lord's Prayer (Luke 11: 1-13)

  ➢ Kingdom of God (Mat 13: 24-50)

- Prayer life of Jesus (Luke 5:12-16,John 11:41-45,17:1-26,Mark 14:32-42)

- Rich and Poor (Luke 16: 19-31,21:1-4)

- Women Liberation (John 4:1-30,8:1-4)

- Women in the New Testament

- Martha & Maria (Luke 10: 38- 42, John 11: 1-46)

UNIT – III: CHURCH – BIRTH AND GROWTH

- Early Church

- Birth (Acts 2:1-41)

- Unity and sharing (Acts 2:42-47,4:1-37,5:1-11)

- Witnessing life (Acts 3:1-26,5:12-42,8:26-40, 16:20-34)

- Comparison between early Church and present Church.

UNIT – IV: DISCIPLES AND APOSTLES

- Mother Mary (Mother of Jesus) (Luke 1: 27-35, John 2: 1-12, 19:35, Acts 1: 13-14)

- Betrayal and the change in the life of St.Peter (Luke 22:1-7,Acts 2:1-41,12:1-17)

- St.Andrew (Mat 4:18-20,John 1:35-42,6:1-14)

- St.Stephen (Acts 6,7)

- St.Paul (Acts 8,9,14,17,26 and 28)

UNIT – V: MISSIONARIES AND EVANGELISTS

- St.Thomas (John 20:24-31) & Missionary to India\Pandithar Rama Bai

- William Carrie

- Dr.Ida Scuddar& St. Britto (Oriyur)

- Amy Carcheal

- Mother Teresa (Calcutta)

- Devasagayam (Nagercoil)

- Staines & Family

REFERENCES:

1. John Stott, 1994, **"Men with a Message"**, Angus Hudson Ltd. London.

HOLY CROSS COLLEGE (AUTONOMOUS)
TIRUCHIRAPPALLI -2
B.A/B.Sc./B.Com/B.R.Sc/B.C.A-DEGEE COURSES
LIFE ORIENTED EDUCATION
CATECHISM – I: GOD OF LIFE

HRS / Wk: 1   **CODE: U15VE2LVC01**
CREDIT: 1   **MARKS: 100**

OBJECTIVES:
- To enable the students to know God and his Salvific acts through Holy Bible
- To enable the students to know about the Paschal Mystery

UNIT – I: CREATION AND COVENANT
　　　　Study from petty catechism - Genesis - God revealed himself in creation -God who preserves creation through covenants (Pentateuch) -Our response to God's covenant -Reason for its success and failure -The relationship of God with Israel -Image of God in Old Testament- God and me

UNIT – II: GOD OF THE PROPHETS
　　　　God's care for the humanity through Prophets-Major (Isaiah, Jeremiah) Minor (Amos) and Women (Deborah) - Prophets-Their life and mission - Theology of Prophets -Concept of sin and collective sins expressed by prophets and God's saving love

UNIT – III: GOD OF WISDOM
　　　　God experience through wisdom Literature, its origin and growth

UNIT – IV: SYNOPTIC GOSPELS
　　　　Synoptic Gospels and John's Gospel – Author –historical background –Chief message of each Gospel and for whom it was written. A few passages for the study of parallelism in the synoptic gospels

UNIT – V: LUKE'S GOSPEL
　　　　Study of Luke's Gospel in detail – specialty of the gospel – main emphasis of the message – meaning and blessing of suffering and paschal joy in one's life.
Passion – Paschal mystery

REFERENCES:

1. Catechism of the Catholic Church published by Theological Publications in India for the Catholic Hierarchy of India, 1994
2. The Holy Bible Revised Standard Version with Old and New Testaments Catholic Edition for India.
3. VaalvinValizha – St. John's Gospel – Fr. Eronimus

HOLY CROSS COLLEGE (Autonomous), Tiruchirappalli - 620 002.

TAMIL DEPARTMENT

BA/ B.SC/ B.COM DEGREE

Part - I : Language: Tamil Paper - II

Total Hours : 75	**Code : U15TL2TAM02**
Hrs : 5Hrs /Wk	**Marks : 100**
Credit : 3	

நோக்கங்கள்:

1. இறைச் சிந்தனை வழி மாணவர்களை ஒருமுகப்படுத்துதல்.

2. தமிழ்ச் சான்றோர்களின் சிறப்புகளை அறிமுகப்படுத்துதல்.

3. மாணவர்களின் நல்லெண்ணங்களை மேம்படுத்துதல்.

4. நட்புணர்வை மாணவர்கள் மனதில் பதியவைத்தல்.

பயன்கள்:

1. இப்பாடம் மாணவர்களிடையே ஆன்மீக அறிவு அறிமுகமாகவும், வளரவும், ஆழப்படவும் துணைபுரிகின்றது. இது ஓர் இயற்கைப் பூங்கா.

2. தமிழை நேசித்து, தமிழ்ச் சான்றோர்களின் மீது மதிப்புக் கொள்ளவும், தானும் சான்றோர் ஆகவும் இது ஒரு பாலமாக பயன்படுகிறது.

3. ஊற்றுக்களாய் மாணவிகளிடையே மறைந்து கிடக்கும் நல்லெண்ணங்களை வெளிக்கொணரவும் நேர்மறைச் சிந்தனைகள் தோன்றவும் பயன்படுவதால் இது ஒரு நூலகமாகும்.

4. வாழ்க்கையில் நட்பின் தேவையை உணர வைக்கும் வழிகாட்டியாகத் திகழ்கிறது. இது வாழ்க்கைப் பெட்டகம்.

பாடத்திட்டம்

அலகு:1 செய்யுள்

1. தேவாரம்	- சுந்தரர் (திருமழப்பாடி)
2. திருவாசகம்	- மாணிக்கவாசகர் (குயில் பத்து)
3. திருமந்திரம்	- திருமூலர்
4. திருப்பாவை	- ஆண்டாள்
5. நாலாயிர திவ்வியபிரபந்தம்	- குலசேகராழ்வார் (பெருமாள் திருமொழி)

அலகு:2   செய்யுள்

6. மீனாட்சியம்மை பிள்ளைத்தமிழ்   - குமரகுருபரர்

7. இரட்சணிய யாத்திரிகம்   - எச்.ஏ.கிருட்டிணப்பிள்ளை

8. வேதநாயகம் சாஸ்திரியார் பாடல்கள்- வேதநாயகம் பிள்ளை

9. நபிகள் நாயக மான்மிய மஞ்சரி   - செய்கு தம்பிப் பாவலர்

அலகு:3

தமிழ் இலக்கிய வரலாறு - தமிழாய்வுத்துறை வெளியீடு

பல்லவர்காலம்

நாயக்கர்காலம்

அலகு:4

படைப்பிலக்கியம் - புதினம்

கல்கி   - பார்த்திபன் கனவு

அலகு:5

கடிதம் எழுதுதல்

பாட நூல்கள்

செய்யுள்   - தமிழாய்வுத்துறை வெளியீடு

தமிழ் இலக்கிய வரலாறு   - தமிழாய்வுத்துறை வெளியீடு

கல்கி   - பார்த்திபன் கனவு

கடித இலக்கியம்   - பயிற்சி ஏடு.

(for the candidates admitted from June 2015 onwards)
HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI-620002
DEPARTMENT OF HINDI
PART – I LANGUAGE HINDI FOR B.A, B.Sc & B.Com
HINDI PAPER-II PROSE, DRAMA, GRAMMAR-II, COMPREHENSION
SEMESTER –II

HRS/WEEK : 5   **CODE: U15HN2HIN02**
CREDITS : 3   **MARKS : 100**

UNIT – I   **:** Bharat matha, Premchand, Taj mahal ki Aathma Kahani, Mahakavi Prasadh, Meri theertha yatra

UNIT- II   **:** Sathyameva jayathe - Drama (chapter 1& 2)

UNIT- III : Sathyameva jayathe – Drama (chapter 3)

UNIT- IV : General Grammar (Sarvanaam, Kriya, Kaal, Karak, Ne Ka niyam)

UNIT- V   **:** Comprehension – Prose passages

Books   Prescribed :
- Naveen Gadhya Chayanika   –   D.B.H.P. Sabha Publishers, Chennai-17
- Sathyameva Jayathe   –   D.B.H.P. Sabha Publishers, Chennai-17
- General Grammar   –   D.B.H.P. Sabha Publishers, Chennai-17

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI – 2
DEPARTMENT OF FRENCH
SYLLABUS
SEMESTER II
PART I - LANGUAGE - FRENCH PAPER II [GRAMMAR, CIVILISATION & TRANSLATION (ÉCHO A1 2e édition)]
(For candidates admitted 2013 onwards)

HRS/WEEK : 5   CODE : U15FR2FRE02

CREDIT : 3   MARKS : 100

Unit 1 Quelle journée !

La conjugaison pronominale, l'impératif, l'expression de la quantité – les activités quotidiennes, les achats et l'argent – demander des nouvelles de quelqu'un – le comportement en matière d'achat et d'argent.

Unit 2 Qu'on est bien ici !

Les prépositions et les adverbes, les verbes exprimant un déplacement – le logement, la localisation, l'orientation, l'état physique, le temps qu'il fait – demander de l'aide, exprimer une interdiction – le climat en France, les cadres de vie (ville et campagne)

Unit 3 Souvenez-vous ?

Emplois du passé composé et de l'imparfait – les moments de la vie, la famille, les relations amicales, amoureuses, familiales – demander/donner des informations sur la biographie d'une personne – le couple et la famille.

Unit 4 On s'appelle ?

Les pronoms compléments directs et indirects – les moyens de la communication – aborder quelqu'un, exprimer une opinion sur la vérité d'un fait – les conseils de savoir-vivre en France.

Unit 5 Un bon conseil ! ; Parlez-moi de vous !

L'expression de déroulement de l'action, les phrases rapportées – le corps, la santé et la maladie – téléphoner, prendre rendez-vous, exposer un problème – les conseils pour faire face aux situations d'urgence.

La place de l'adjectif, la proposition relative, la formation des mots – la description physique et psychologique des personnes, les vêtements et les couleurs – demander/donner une explication – quelques styles comportementaux et vestimentaires en France.

TEXT BOOKS :

ECHO A1 – METHODE DE FRANÇAIS & CAHIER PERSONNEL D'APPRENTISSAGE Authors: J. Girardet and J. Pécheur
Publication: CLÉ INTERNATIONAL, 2012.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2.
2015 - 2016
I B.A., B.Sc., B.Com., B.R.Sc., B.C.A., B.B.A.,SEMESTER II
PART II – ENGLISH II - GENERAL ENGLISH   PAPER II

HOURS – 6 PER WEEK   **CREDIT : 3**
CODE : U15EL2GEN02
OBJECTIVES
- Students learn to use LSRW skills and advanced communication skills in the context required in their daily life.
- The students learn to analyze and express their self and their concern and responsibilities to the world around.
- The students learn how English is used in literary writing so as to imbibe the spirit of the standard language for communication.

UNIT I – SELF

Listening- Specific information from demonstration and instructions, transfer of information.
Speaking - Sharing expressions, dreams and expressing opinions.
Reading -Skimming and Scanning for specific information, reading for local comprehension.
Writing - Story Writing
Grammar - Articles and Sentence Pattern
Vocabulary - Meanings, Synonyms, Antonyms
Composition - Transfer of information: Paragraph to Bar graph/pie chart
               General Essay - Courage is the key to success

TEXTS
1. *When I have fears* by John Keats   (poem)
2. *Key to courage* by I.A.R. Wylie   (prose)
3. *The Far and the Near* by Thomas Wolfe (Short Story)

UNIT II – STRENGTHS

Listening - Listening to a process
Speaking - Telephone Etiquette
Reading - Loud reading with pause, intonation and expression in dialogue form
Writing - Writing about oneself (strengths& weaknesses, Have's & Have not's)
Grammar- Subject verb agreement, Prepositions
Vocabulary- One word substitute in the context
Composition- Letter Writing - informal letters
               General essay – A bird in hand is worth two in bush.

TEXTS
1. *My early days* (An extract from *Wings of fire* by A.P.J. Abdul Kalam (prose)
2. *The robe of peace* by O. Henry   (Short Story)
3. An extract from *Androcles and the lion* by G.B. Shaw (play)
4. *Give me the strength* by Tagore's *Gitanjali* (poem)

UNIT III - POSITIVE SHORTCOMINGS
Listening - Listening to facts and opinions and trying to differentiate it
Speaking - Pair Work – about have's & have not's, understanding the strengths and overcoming the weaknesses
Reading - Reading newspapers, articles, magazines, anecdotes for global and specific in analytical thinking

Writing - Filing Complaints, Travelogues
Grammar - Tenses, Direct and Indirect Speech
Vocabulary - Compound words
Composition - Dialogue Writing
General essay – Adversity is the seed of success.

TEXTS
1. *The Ballad of father Gilligan* by Alexander Pope   (poem)
2. *Six thinking hats* by Edward de Bono   (prose)
3. *A cup of tea* by Katherin Mansfield   (Short Story)
4. An extract from Shakespeare's *As you like it (Act II Scene I lines 12 -17)*

UNIT IV   POTENTIALS
Listening - Listening to the description of personalities, historical places and monuments
Speaking - Group Discussion – Totally controlled, partially controlled, Free
Reading - Parallel Reading, reading for pleasure
Writing - Letter writing – formal letters
Grammar - Adjectives, Degrees of Comparisons
Vocabulary - Idioms and Phrases
Composition - Debates and Discussions
General essay – My potentials
TEXTS
1. *The flower* by Tennyson   (poem)
2. *How to avoid argument* by Sam Horn (prose)
3. *The child is father of man* by Wordsworth (poem)
4. An extract from *Pygmalion* by G.B. Shaw

UNIT V   ACHIEVEMENTS
Listening - Listening to comparisons and arguments
Speaking - Performance
Reading - In-depth reading
Writing - Script writing of story to play
Grammar - Question Tags
Vocabulary - Homophones
Composition - Essay Writing
General essay - The reward of hard work.
TEXTS
1. *The Garden* by Dom Moraes (poem)
2. *On saying please* by A.G. Gardiner (prose)
3. *One good turn* by A.E.M. Bayliss (play)

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2
B.C.A. : SEMESTER II
(For Candidates admitted from June 2015 Onwards)
MAJOR CORE2: DATA STRUCTURES AND ALGORITHMS

Hours/Week: 5   **Code: U15CA2MCT02 /U15CS2MCT02**
Credits:5   **Marks:100**

OBJECTIVE:
  To understand the fundamental concepts of Data Structures and learn to develop
  Algorithms. To impart knowledge about the application of binary trees.

UNIT I

INTRODUCTION TO DATA STRUCTURE: Arrays -Arrays as abstract data type - Arrays row major and column major Sequences. **STACK:** Definition and Example - Representing Stack: Implementing the Pop operation – Testing for exceptional conditions – Implementing the Push operation. Applications: Infix, Postfix and Prefix; Basic Definitions and Examples – evaluating a Postfix Expression - Converting an Expression from infix to postfix. **RECURSION:** Recursive definition and processes: Factorial function – Multiplication of Natural Numbers – Fibonacci sequence – Binary Search – Properties of Recursive Definitions or Algorithms.

UNIT II

QUEUES: The Queue and its Sequential representation: The Queue as an Abstract Data Type – Insert Operation – Priority Queue – Array implementation of a Priority Queue. **LINKED LISTS:** Inserting and Removing Nodes from a List – Linked implementation of Stacks – getnode and freenode operations – Linked implementation of Queues – Linked list as a Data Strucutre – List implementation of Priority Queues – Header nodes.

UNIT III

BINARY TREES: Operations on Binary trees – Applications of Binary Trees. Binary Tree Representations: Node representation of Binary Trees – Internal and External Nodes – Implicit Array representation of Binary Trees. Applications: Tree Traversals – General Expression as Trees – Evaluating an Expression tree – Constructing a Tree.

UNIT IV

SORTING: Bubble Sort – Quick Sort – Heap Sort; Insertion Sort: Simple Insertion – Shell Sort.

UNIT V

GRAPHS: Transitive Closure -Warshall‟s Algorithm – Shortest Path Algorithm – Dijkstra‟s Algorithm Revisited**.**

TEXT BOOK:

1. Aaron M. Tenenbaum, Yedidyah Langsam, Moshe J. Augenstein, "**Data Structures Using C",** 2006, Second Edition.

   UNITI : Chapters1.1(Pg.no25-40), 2.1-2.3(Pg.no64-97), 3.1(Pg.no100-108).
   UNIT II : Chapters 4.1- 4.2(Pg.no158-186).
   UNIT III : Chapters 5.1-5.2(Pg.no231-256),5.5(289-302).
   UNIT IV : Chapters 6.2(Pg.no323-354)
   UNIT V : Chapters 8.1(Pg.no501-516,535-537).

REFERENCE BOOKS:

1. Ellis Horowitz, Sartaj Sahni, Dinesh Mehta. "**Fundamentals of Data Structures inC"**, 2009, Second Edition.

2. Yedidyah Langsam, Moshe J.Augenstein, Aaron M.Tenenbaum, "**Data Structures Using C**", 2005.

3. D.Samanta, "**Classic Data Structures**", 2005.

4. Robert.L.Kruse, "**Data structures and program design**", Third Edition, 2001.

5. Niraj Agarwal, **"Fundamentals of Data Structures",** 2008

MAJOR CORE 3:DATA STRUCTURES LAB

Hours/Week: 5   **Code: U15CA2MCP03 / U15CS2MCP03**
Credits:4   **Marks:100**

To implement the following concepts in "C":

1. Operations on Stack and Conversion of expressions.

2. Operations on Queue.

3. Operations on Linked List.

4. Operations on Binary tree and Traversals.

5. SORTING:

        a. Bubble Sort.

        b. Insertion Sort.

        c. Selection Sort.

        d. Heap Sort.

        e. Quick Sort.

6. SEARCHING:

        a. Linear Search.

        b. Binary Search.

7. Dijkstra"s Algorithm to find the Shortest Path.

Total Hours: 60
Hours/Week: 4   **Code:U15MA2ACT11**
Credits: 3   **Marks: 100**

OBJECTIVES:
➢ To provide an understanding of basic concepts in Operations Research Techniques for Analysis and Modeling in computer applications.
➢ To understand, develop and solve mathematical model of linear programming, Transportation and assignment problems.
➢ To understand network modeling for planning and scheduling the project activities.

Unit I: Linear programming problem
Introduction –Mathematical formulation of the Problem – Solving LPP by graphical method – General LPP - Canonical and standard forms – Simplex method.
(Simple problems only)

Unit II: Transportation Problem
Introduction – Mathematical Formulation –Initial basic feasible solution by North West Corner Rule – Least cost method – Vogel's approximation method- Unbalanced and maximization transportation problems.
(Initial basic feasible solution problems only)

Unit III: Assignment problem
Assignment Problem – Hungarian method – Unbalanced AP – Maximization in AP.

Unit IV: Sequencing Problem
Introduction – problem of sequencing- Basic terms - Processing n jobs through 2 machines & 3 machines.

Unit V: Network Scheduling by PERT/CPM
Introduction – Network Basic components – logical sequencing – Rules of network construction – Concurrent activities - Critical path analysis.

TEXT BOOK:
Treatment and content as in KantiSwarup, Gupta P.K, Man Mohan (2007),13th revised edition
OPERATIONS RESEARCH Sultan Chand & Sons, New Delhi.
Unit I : Chapter 2: Sections 2.1 to 2.4 , Chapter 3 : Sections 3.1 to 3.5, Chapter 4: Section 4.3

Unit II : Chapter 10 : Sections 10.1 to 10.3, 10.5,10.9,10.15

Unit III: Chapter 11: Sections 11.1, 11.2, 11.3 (4), 11.4
Unit IV: Chapter 12 : Section 12.1 to 12.5.

Unit V: Chapter 25 : Sections 25.1 to 25.6

REFERENCE BOOKS:

1. S.Kalavathy , (2nd Reprint 2011), **OPERATIONS RESEARCH** , 3rd edition, Vikas Publishing House Pvt.Ltd, New Delhi.

2. Gupta P.K., Hira S.(2005) , **OPERATIONS RESEARCH**, S.Chand& Co. Limited , New Delhi.

3. Mariappan P.(2001), **OPERATIONS RESEARCH METHODS & APPLICATIONS**New Century Book House Private Limited..

4. PanneerSelvam (2003), **OPERATIONS RESEARCH**, Prentice Hall of India Private Limited, New Delhi.

5. Sharma J.K.(2007), **OPERATION RESEARCH THEORY & APPLICATIONS**, Macmillan India Limited, Chennai.

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI
B.A/B.Sc./B.Com/B.R.SC/B.C.A/B.B.A DEGREE EXAMINATION SEMESTER-II

SBE-1 SOFT SKILL DEVELOPMENT

Credits -2
Hrs – 2/Week   **Code: U15RE2SBT01**

General Objective:
The student understands the need for the development of self esteem, team spirit and communicative skills to prepare themselves for self development.

UNIT I:
Individual Capacity Building
Self awareness – building self–esteem – importance of having a strong self–esteem – developing positive attitude - .Anchoring on principles: Universal principles and values– forming & inculcating values-Leadership skills.

UNIT II :
Interpersonal skills
Trust worthiness-interpersonal communication–art of listening, reading and writing–art of writing–building relationship-empathy.

UNIT III:
Corporate skills
Vision, mission and goals: Concepts, vision setting, goal setting, Individual and Group goals, Concept of synergy, team building, group skills.

UNIT IV:
Management skills
Developing Body Language–Practicing etiquette and mannerism–Stress Management– Time Management Prioritization Importance and urgent activities-Time management to move towards life vision.

UNIT V:
Self Development Plan
Concept and Need for Self Development Plan–Preparing Self Development Plan9 Format is used to complete the self development Plan), Monitoring and Evaluation of self Development plan– Developing indicators for self development introduction to National Skill Development Mission.

REFERENCES:
Delhi Meena K.AyothiV. (2013). A Book on Development of Soft Skills (Soft Skills: A Road Map to Success), P.R. Publishers & Distributors, Trichy.
FrancisThamburaj S.J.(2009).Communications of skills for Professional Excellence,1ˢᵗ Ed., Grace Publishers,
Rathan ReddyB.(2005).Team Development and Leadership, Jaico Publishing House, Mumbai.

RURAL ENRICHMENT AND SUSTAINABLE DEVELOPMENT

Hrs – 2/Week   **Code: U15RE2SBT02**
                                                                 CREDITS :2

Course Objective:

The students are able to understand practically the Environmental concerns of rural areas and develop an alternative thinking through various field based intervention.

Unit–I
Village–Public Administration- Survey of natural resources and resource mapping of villages, village level Participating Approach (VLPA) – Role of NGO'S and SHG'S, Department of Rural development(central and state):

Unit–II
Green Revolution and industrialization cost climatic changes and mismanagement of natural resources- Reduced economic returns from agriculture-resultant social issues-poverty and farmer suicide- introduction to WTO, GATT and LPG and its impact on green Revolution.

Unit–III
Sustainable Development-Concepts , Environmental , social and economic aspects of sustainable development, sustainable development as solution to address rural issue-successful case studies from India

Unit-IV
Elements in sustainable development-Comparison and Compliments of Traditional water shed and modern water shed management techniques-water shed management practices-rain water harvesting, managing existing rain water drainage canals, desilting, buns construction, check dams, micro irrigation, agro forestry and alternative agriculture models and agriculture implements –Afforestation- Honey Bee rearing-dairyfarming.
 .
Unit-V
Elements in sustainable development –addressing agriculture issues-traditional farming technology-organic farming-Zero budget farming-organic manures vermicompost-azolla cultivation panchakavya- amirthakaraisal, organic pesticides mulikaipuchiviratti-neem products-natural management in soil-precision farming soil fertility. Ecological sanitation-bio- diversity and natural resource-terrace farming-seed banking and kitchen garden.

REFERENCES:
1. Packages of organic practices from Tamil Nadu Center for Indian Knowledge System(CIKS)
2. www.fao.org.in

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI-2
B.A. /B.Sc. / B.Com. / B.R.Sc. / B.C.A. DEGREE COURSE
LIFE ORIENTED EDUCATION
ETHICS – I: RELIGION AND VALUE SYSTEMS

HRS / WK :1   **CODE: U15VE2LVE01**
                                                             CREDITS :1
                                                             MARKS : 100

OBJECTIVES:

- To Understand My and Other Religions and Culture
- To Appreciate My and Other Religions and Culture
- To Learn from other Religions and Culture
- To Interact with My and Other Religions and Culture to enhance My faith in My religion.
- To Help the students to become aware of the negative forces of religions.

UNIT – I: RELIGION
God – concept of faith, Faith, Meaning, Definition, Nature, Characteristics and Basic values of different religions. Impact of Globalization on religion – Importance of worship in holy places – celebration, come-union, socialization.

UNIT – II: DIFFERENT RELIGIONS
Basic characteristics and basic thoughts- Buddhism, Christianity, Hinduism, Islam, Jainism and Sikhism

UNIT – III: UNITY OF RELIGION
Unity of Vision and Purpose- Respect for Other's Faith, Inter Religious Co-operation, Religious Pluralism as a fact and Religious Pluralism as a value.

UNIT – IV: FUNDAMENTALISM, COMMUNALISM AND SECULARISM
Meaning and impact of Fundamentalism-Communalism-Violence and terrorism – Tolerance – Secularism - Individualism

UNIT – V: VALUE SYSTEMS
Value and Value Systems - Moral Values -Individuals and the need to stand for values in the concept of Globalization – Consumerism - Will power to live up to your values - Healthy body for empowerment – Physical health and Mental hygiene, food and exercises.

REFERENCES:
6. Social Analysis (a course for all first year UG students), 2001. Department of Foundation Courses, Loyola College, Chennai-34.
7. Special topics on Hindu Religion, 2001.Department of Foundation Courses,Loyola College, Chennai-34.
8. Religion: the living faiths of the world, 2001. Department of Foundation Courses, Loyola College, Chennai-34.
9. Sydney Am Meritt, 1997. Guided meditations for youth.
10. Marie Migon Mascarenhas,1986. Family life education- Value Education, A text book for College students.

HOLY CROSS COLLEGE(AUTONOMOUS) TRICHIRAPALLI-2.
B.A/ B.Sc/ B.Com/ B.R.Sc/ B.C.A DEGREE COURSES
LIFE ORIENTED EDUCATION
BIBLE STUDIES – I: NEW TESTAMENT

HRS / Wk :1   **CODE: U15VE2LVBO1**
                                                   CREDIT : 1
                                                   MARKS : 100

OBJECTIVE:
- Developing the passion for the Word of God – Jesus and inculcating the thirst of Missionaries being a disciple of Christ.

UNIT – I: BIBLE – THE WORD OF GOD

- Books of the Bible – Division into Old Testament and New Testament – history of the Bible-

- Messiah Prophecies(Isaiah 9:6,40:3,53:1-12,61:1-3,Micah 5:2)

- The Birth and Ministry of John the Baptist (Luke 1:1-80,Mat 3:1-17,14:1-12)

- The Birth, Passion and Resurrection of Jesus (Luke 1:26-80,2:1-52,John 1 :18-21)

UNIT – II: MINISTRY OF JESUS

- Miracles (Mark 2:1-12,Luke 4:38-41,6:6-11,7:1-17,8:26-56,John 2:1-12)

- Parables (Luke 6:46-49,8:4-15,10:25-37,15:1-32)

- Preaching

  - Sermon on the mount (Mat 5-7)

  - Lord's Prayer (Luke 11: 1-13)

  - Kingdom of God (Mat 13: 24-50)

- Prayer life of Jesus (Luke 5:12-16,John 11:41-45,17:1-26,Mark 14:32-42)

- Rich and Poor (Luke 16: 19-31,21:1-4)

- Women Liberation (John 4:1-30,8:1-4)

- Women in the New Testament

- Martha & Maria (Luke 10: 38- 42, John 11: 1-46)

UNIT – III: CHURCH – BIRTH AND GROWTH

- Early Church

- Birth (Acts 2:1-41)

- Unity and sharing (Acts 2:42-47,4:1-37,5:1-11)

- Witnessing life (Acts 3:1-26,5:12-42,8:26-40, 16:20-34)

- Comparison between early Church and present Church.

UNIT – IV: DISCIPLES AND APOSTLES

- Mother Mary (Mother of Jesus) (Luke 1: 27-35, John 2: 1-12, 19:35, Acts 1: 13-14)

- Betrayal and the change in the life of St.Peter (Luke 22:1-7,Acts 2:1-41,12:1-17)

- St.Andrew (Mat 4:18-20,John 1:35-42,6:1-14)

- St.Stephen (Acts 6,7)

- St.Paul (Acts 8,9,14,17,26 and 28)

UNIT – V: MISSIONARIES AND EVANGELISTS

- St.Thomas (John 20:24-31) & Missionary to India\Pandithar Rama Bai

- William Carrie

- Dr.Ida Scuddar& St. Britto (Oriyur)

- Amy Carcheal

- Mother Teresa (Calcutta)

- Devasagayam (Nagercoil)

- Staines & Family

REFERENCES:

1. John Stott, 1994, **"Men with a Message"**, Angus Hudson Ltd. London.

HOLY CROSS COLLEGE (AUTONOMOUS)
TIRUCHIRAPPALLI - 2 B.A/B.Sc./B.Com/B.R.Sc/B.C.A - DEGEE
COURSES
LIFE ORIENTED EDUCATION
CATECHISM – I: GOD OF LIFE

HRS / Wk: 1   **CODE: U15VE2LVC01**
                                                                 CREDIT: 1
                                                                 MARKS: 100
OBJECTIVES:
- To enable the students to know God and his Salvific acts through Holy Bible
- To enable the students to know about the Paschal Mystery

UNIT – I: CREATION AND COVENANT
Study from petty catechism - Genesis - God revealed himself in creation -God who preserves creation through covenants
(Pentateuch) -Our response to God's covenant -Reason for its success and failure -The relationship of God with Israel -Image of God in Old Testament-God and me

UNIT – II: GOD OF THE PROPHETS
God's care for the humanity through Prophets-Major (Isaiah, Jeremiah) Minor (Amos) and Women (Deborah) - Prophets-Their life and mission - Theology of Prophets -Concept of sin and collective sins expressed by prophets and God's saving love

UNIT – III: GOD OF WISDOM
God experience through wisdom Literature, its origin and growth

UNIT – IV: SYNOPTIC GOSPELS
Synoptic Gospels and John's Gospel – Author –historical background –Chief message of each Gospel and for whom it was written. A few passages for the study of parallelism in the synoptic gospels

UNIT – V: LUKE'S GOSPEL
Study of Luke's Gospel in detail – specialty of the gospel – main emphasis of the message – meaning and blessing of suffering and paschal joy in one's life.
Passion – Paschal mystery

REFERENCES:

1. Catechism of the Catholic Church published by Theological Publications in India for the Catholic Hierarchy of India, 1994
2. The Holy Bible Revised Standard Version with Old and New Testaments Catholic Edition for India.
3. VaalvinValizha – St. John's Gospel – Fr. Eronimus

HOLY CROSS COLLEGE (Autonomous), Tiruchirappalli - 620 002.

TAMIL DEPARTMENT

BA/ B.SC/ B.COM DEGREE

Part - I : Language: Tamil Paper - III

Total Hours : 90   Code   : U15TL3TAM03

Hrs   : 6Hrs /Wk   Marks : 100

Credit   : 3

நோக்கங்கள்:

1. வாழ்வியல் நெறிகளாகிய அறம், பொருள், இன்பம், வீடுபேறு ஆகியவற்றின் மேன்மையை எடுத்துரைத்தல்

2. சமூக வாழ்க்கைப் பற்றிய விழிப்புணர்வினைத் தோற்றுவித்தல்

3. ஆன்மீக உணர்வுகளை வலுப்படுத்துதல்

பயன்கள்:

1. காப்பியங்களைப் பயில்வதன் மூலமாக மாணவர்கள் அறக்கருத்துக்களை உணர்ந்து கொள்ளுதல்.

2. சமூக மாற்றங்களைக் கண்டறிந்து மேம்பாடுகளை உருவாக்கச் செய்தல்

3. கலைநுட்பங்களையும் பண்பாட்டுச் சிறப்புக்களையும் உணர்ந்து கொள்ளச் செய்தல்

அலகு:1 செய்யுள்

    1. சிலப்பதிகாரம் - கடலாடு காதை
    2. மணிமேகலை – உலகவறவி புக்க காதை
    3. கம்பராமாயணம் - கங்கைப் படலம்

அலகு:2 செய்யுள்

    4. இரட்சணிய யாத்திரிகம் - மரணப் படலம்
    5. சீறாப்புராணம் - ஒட்டகை பேசிய படலம்

அலகு:3

    தமிழ் இலக்கிய வரலாறு
    சோழர் காலம்

அலகு:4

    நாடகம்

சத்திய வேள்வி – அய்க்கண்

அலகு:5

கோயிற்கலை   - திட்டக்கட்டுரை, வினாடி வினா

பாட நூல்கள்

1. செய்யுள்   - தமிழ்த்துறை வெளியீடு

2. தமிழ் இலக்கிய வரலாறு   - தமிழ்த்துறை வெளியீடு

3. நாடகம்
   அய்க்கண்   -   சத்திய வேள்வி

4. கோயிற்கலை   - தமிழ்த்துறை வெளியீடு

(For the candidates admitted from June 2015 onwards)
HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI-620002

HRS/WEEK : 6   **CODE: U15HN3HIN03**
CREDITS : 3   **MARKS : 100**

UNIT – I : Shubhagaman, Man, Tere ghar ked war bahuth hym
          Memory poem : - Kabir das Ke Dohe - 6
          Thulasidas Ke Dohe - 6 Rahim Ke Dohe - 6

UNIT- II : History of Hindi Literature :
          Essay Type Questions : Veeragatha Kaal

UNIT- III : Bakthi Kaal

UNIT- IV : Poetics

     a. Ras : Shringar, karun, Hasya, Veer
     b. Alankar : Anupras, Yamak, Upama, Roopak
     c. Chand : Choupayee, Baravai

UNIT- V : Kavi Parichaya : Ayodiya singh upadyaya Harioudh, Maithili Sharan Gupth,
          Siyaram Sharan Gupth, Kabir, Thulasi das

     Books   Prescribed :

     - Naveen Padhya Rathnakar– D.B.H.P. Sabha Publishers, Chennai-17
     - Pracheen Padhya Sangrah– D.B.H.P. Sabha Publishers, Chennai-17
     - Hindi Sahitya Ka Sanshitpta Itihas – Rajnath Sharma, Agrwal Publication,
                                        Uttar Prakash
     - Kavya Pradeep   –   Ram Bahori Shukla, Hindi Bhavan, Illahabad.

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI – 2
DEPARTMENT OF FRENCH
<u>SYLLABUS</u>
SEMESTER III
PART I - LANGUAGE - FRENCH PAPER III [LANGUAGE & CIVILISATION
(ÉCHO A2 2e édition)]
(For candidates admitted 2013 onwards)

HRS/WEEK : 6   **CODE : U15FR3FRE03**
CREDIT : 3   **MARKS : 100**

Unit 1 Vivement demain !

Le futur, la comparaison des qualités, des quantités et des actions – la santé – le travail dans trente ans – la vie quotidienne - l'éducation et la formation (l'enseignement en France) – faire des projets.

Unit 2 Tu as du boulot ?

Le pronom « en » et « y » - exprimer une condition : si + présent, si + passé composé, exprimer des préférences – les emplois de demain - des idées pour créer une entreprise – le travail en France.

Unit 3 Qu'en pensez-vous?

L'emploi du subjonctif , l'expression de la quantité – revue de presse – entrée en politique – la naissance des départements –la vie politique - l'organisation administrative et politique de la France.

Unit 4 C'est tout un programme !

Les propositions relatives, la formation des adverbes, la forme « en + participe présent » - parler de la télévision et de la radio - comment les Français s'informent (la télévision et la presse en France)

Unit 5 On se retrouve

L'emploi et la conjugaison de l'indicatif – parler de son apprentissage du français langue étrangère – les rencontres : modes et comportements – une vraie vie de quartier grâce à Internet – formules pour un premier contact par écrit.

TEXT BOOKS :

ECHO A2 – METHODE DE FRANÇAIS & CAHIER PERSONNEL D'APPRENTISSAGE
Authors: J. Girardet and J. Pécheur
Publication: CLÉ INTERNATIONAL, 2010.

I B.A., B.Sc., B.Com., B.R.Sc., B.C.A., B.B.A.,SEMESTER III
PART II – ENGLISH III - GENERAL ENGLISH   PAPER III
HOURS – 6 PER WEEK   **CREDIT : 3**
                                                           CODE :U10EL3GEN03

OBJECTIVES

To reinforce the LSRW skills of students.
To enhance their study skills and literary skills through a selection of prose extracts.
To develop soft skills such as presentation and group discussion skills.
To strengthen sub skills including vocabulary, grammar, comprehension, argumentative and imaginative writing

UNIT I
A Little Bit of What You Fancy :*Desmond Morris*

UNIT II
The Avenger :*Anton Chekov*

UNIT III
Know When to Say 'It's None of Your Business': *Mark McCormack*

UNIT IV
The Second Crucifixion: *Larry Collins and Dominique Lapierre*

UNIT V
General Essay – 5 topics given
 Idioms and Phrases - 20 Idioms and phrases given

BOOKS FOR REFERENCE

Anand, Renu .,& Rajeevan, Geetha. *Images of Life:An Anthology of Prose*. New Delhi: Foundation Books, 2007. Print.

List of Idioms and Phrases:

1. To tuck in
2. In tune with
3. To frown upon
4. In favour of
5. In vogue
6. To gloat at
7. On the contrary
8. Prompted by
9. To pale to nothing

10. To wax enthusiastic
11. To figure one out
12. Crystal clear
13. Grey area
14. To have second thoughts
15. On red alert
16. On a fool's errand
17. To be taken aback
18. To storm
19. Trouble spots
20. Flood of humanity

GENERAL ESSAY TOPICS

1. Women are not as intelligent as men.
2. The use of the internet and the computer.
3. Life in the next decade.
4. The ways of using the cell phone to minimize health hazards.
5. How will you save the planet?

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2
B.C.A. : SEMESTER III
(For Candidates admitted from June 2015 Onwards)
MAJOR CORE 4: DATABASE SYSTEMS

Hours/Week: 5   **Code: U15CA3MCT04/ U15CS3MCT04**
Credits:5   **Marks:100**

OBJECTIVE
To impart the fundamental aspects of database design, database languages and database-system implementation.

UNIT I

INTRODUCTION : Database System Applications – Purpose of Database Systems – View of Data – Database Languages – Relational Databases – Database Design – Data Storage and Querying – Transaction Management – Database Architecture - Data Mining and Information Retrieval – Specialty Databases – Database Users and Administrators – History of Database Systems.

UNIT II

RELATIONAL MODEL: Structure of Relational Databases - Database Schema - Schema Diagrams - Relational Query Languages - Relational Operations .

UNIT III DATABASE DESIGN
Database Design and the E-R Model: Overview of the Design Process – The Entity-Relationship Model – Constraints – Removing Redundant Attributes in Entity Sets - Entity-Relationship Diagrams – Entity-Relationship Design Issues – Extended E-R Features
Normalization: The Purpose of Normalization – How Normalization Supports Database Design – Data Redundancy and Update Anomalies – Functional Dependencies – The Process of Normalization – First Normal Form - Second Normal Form - Third Normal Form – General Definitions of 2NF and 3NF. **Advanced Normalization:** Boyce Codd Normal Form **-** Fourth Normal Form – Fifth Normal Form.

UNIT IV

Introduction to SQL : Overview of the SQL Query – Language - SQL Data Definition - Basic Structure of SQL Queries - Additional Basic Operations - Set Operations - Null Values - Aggregate Functions - Nested Subqueries - Modification of the Database – **Intermediate SQL:** Join Expressions - Views – Transactions - Integrity Constraints – **Advancded SQL:** SQL Data Types and Schemas – Authorization - Functions and Procedures – Triggers - Recursive Queries.
UNIT V

DATA STORAGE AND TRANSACTION MANAGEMENT
Storage and File Structure: Overview of physical Storage Media– File Organization – Organization of Records in files-Data Dictionary storage. **Transactions :** Transaction Concept - A Simple Transaction Model - Storage Structure - Transaction Atomicity and Durability - Transaction Isolation - Serializability - Transaction Isolation and Atomicity

TEXT BOOKS

1. Abraham Silberschatz, Henry F. Korth, S. Sudarshan, "**Database System Concepts**", 2010, Sixth Edition, McGraw-Hill Publications.
   UNIT I : Chapter 1(1.1-1.13)
   UNIT II : Chapter 2(2.1-2.6)
   UNIT III : Chapter 7(7.1-7.5,7.7-7.8)
   UNIT IV : Chapters 3(3.1-3.9),4(4.1-4.6)5(5.2-5.4)
   UNIT V : Chapters 10(10.1,10.5-10.7),14(4.1-14.7)
2. Thomas Connolly, Carolyn Begg, "**Database Systems**" ,2009, Fourth Edition, Pearson Eduction Ltd.,New Delhi.
   UNIT III : Chapters 13(13.1 – 13.9), 14(14.2,14.4 – 14.5)

REFERENCE BOOKS

1. Ramez Elmasri, Shamkant B. Navathe, "**Fundamentals of Database Systems",** 2006, Addison Wesley Publishing Company

2. Seema kedar, "**Database Management System",** 2011, Technical Publications.

3. Elmasri & Navathe, "**Fundamentals of Database Systems**", 2006, Pearson Education Publications, New Delhi.

4. P.K. Yadav,"**Database Management System"**, 2013, Tata McGraw Hill Publications Company Limited, New Delhi.

5. G.K.Gupta **,"Database Management System",** 2011, Tata McGraw Hill Publications Company Limited, New Delhi.

MAJOR CORE:5 : RDBMS LAB

Hours/Week: 5   **Code:U15CA3MCP05**
Credit :5   **Marks:100**

1. Table creation and simple queries.

2. Queries using aggregate functions.

3. Queries using set Operators.

4. Table creation with various joins.

5. Partitioned table creation.

6. Nested sub queries and correlated sub queries.

7. View creation and manipulations.

8. PL/SQL program to prepare mark sheet.

9. PL/SQL program to prepare a pay slip.

10. PL/SQL program to prepare the electricity Bill.

11. PL/SQL program to prepare the multiplication table for a given number.

12. PL/SQL program to count the number of characters and digits in a string.

Allied 4(Optional) - APPLIED MATHEMATICS III
(for BCA and B.Sc. Computer Science students)

Total Hours: 60
Hours/Week: 4   Code:U15MA3AOT13
Credits: 3   Marks: 100

OBJECTIVES:
To impart the knowledge on matrices and enable the students to know about different methods of solving numerical equations, methods of interpolation ,numerical differentiation and integration.

UNIT 1: MATRICES
Types of matrices- operation on matrices-rank of a matrix-solution of simultaneous linear equation

UNIT II : MATRICES (CONTINUED)
Eigen values – eigen vectors- similar matrices- cayley Hamilton theorem (without proof) - eigen values for symmetric matrices

UNIT III : SOLUTION OF ALGEBRAIC AND TRANSCENDENTAL EQUATIONS AND INTERPOLATION
Solving algebraic and transcendental equations – Bisection, False position and Newton Raphson methods.
Newton Gregory forward and backward interpolation formulae

UNIT IV : SOLUTION OF SIMULTANEOUS EQUATIONS
Gauss elimination – Finding inverse of a matrix using Gauss elimination method – Iterative methods.
Gauss Jacobi and Gauss Seidal methods.

UNIT V : NUMERICAL INTEGRATION AND SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS:
Trapezoidal rule and Simpsons 1/3 rule (truncation error excluded). Solving differential equations (1st order differential equations only) – solutions by Euler's method - Euler's modifiedmethod(excluding
improved Euler's method) – RungeKutta 2nd and 4th order method.

TEXT BOOKS:
For Units I and II

1. Narayanan S, Hanumantha Rao.R, Manicavachagom Pillay.T.K, Dr. Kandaswamy

    .P.(2000), ANCILLARY MATHEMATICS – VOLUME 1 - PART I – ALGEBRA,

2. S.Viswanathan Printers and publishers Pvt Ltd, Chennai. UNIT I Chapter 3 : Sections 3.1-

    3.3

UNIT II Chapter 3 : Sections 3.4,3.5 For Units III, IV and V

1.   Venkataraman M. K(2006), "NUMERICAL METHODS IN SCIENCE AND ENGINEERING",

National Publishing House, Chennai

UNIT III Chapter 3 : Sections 1,2,4,5 and Chapter 6: Sec 1-4

UNIT IV Chapter 4 Section 1-3,6

UNIT V Chapter 9 Section 8,10 and Chapter 11 Sections 10,12,14,16

REFERENCE BOOKS :

1. S. Arumugam and A. Thangapandi Isaac MODERN ALGEBRA, Scitech Publications (India) pvt ltd Chennai.

2. S. Arumugam, A. Thangapandi Isaac & A. SomasundaramNUMERICAL METHODS Scitech Publishers ,Chennai 3.A.Singaravelu (2008) ,ENGINEERING MATHEMATICS ,NUMERICAL METHODS- MeenakshiPublishers, Chennai.

3. ManicavachagomPillay .T.K ,Natarajan.T, Ganapathy K.S ,(2005), ALGEBRA VOL IIS.Viswanathan (Printers and publishers),Chennai

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2
B.C.A. : SEMESTER III
(For Candidates admitted from June 2015 Onwards)
SKILL BASED ELECTIVE – 3: MULTIMEDIA AND ANIMATION LAB

Hours/Week: 2   **Code: U15CA3SBP03/ U15CS3SBP03**
Credits: 2   **Marks: 100**

Photoshop
1. Using various selection tools
2. Using image adjustment tools to enhance an image
3. Create scenery using Photoshop brushes.
4. Demonstrate the use of layer effects.
5. Create a text with picture inside.
6. Demonstrate the use of ripple effect and lens flare.
7. Create a snapshot inside a photo.
8. Photo retouching.
9. Coloring a BW photo.
10. Create slide mount template.
11. Create Photo mount template.
12. Create photo frame effect.
13. Create photo film effect.
14. Create a 3D Photo effect.
15. Create 2D and 3D logos.
16. Animate text using Image Ready.
17. Create three frames with Lens flare effect and different background colors and animate using Image Ready
18. Create a Christmas Tree with Blinking Lights.
19. Animate a candle flame using Liquify filter.

Flash
1. Animation Using Motion Tween.
2. Animation Using Shape Tween.
3. Animation Using Guide Layer.
4. Animation of Text in Multiple Layers.
5. Masking the Text by an Object.
6. Animation Using images and its effects.
7. Masking Two Images.
8. Text Morphing.
9. Importing sound
10. Animation Using Movie clip objects.
11. Create an e-Invitation for College Day with audio note.
12. Create 30 seconds multi-media profile about your College.
13. Animate a 5 yr child walking on the street.
14. Animate the same child stopping when a vehicle crosses.
15. Generate a new comic character and give a name to it.
16. Create a video-resume about yourself.

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI-2
B.A./B.Sc./ B.Com./ B.C.A./B.B.A DEGREE COURSE
II YEAR: SEMESTER - III
(Students who are admitted from 2015 onwards)
GENDER STUDIES

Hours: 1Hr/wk   **CODE: U15WS3GST01**
                                                              CREDITS: 1

Objectives

To make boys and girls aware of each other's strength and weakness

To develop sensitivity towards both genders in order to lead an ethically enriched life

To promote attitudinal change towards a gender balanced ambience and women empowerment

Unit I

Concepts of Gender : Sex-Gender-Biological Determination-Patriarchy-Feminism-Gender Discrimination-Gender Division of Labour -Gender stereotyping – Gender Sensitivity-Gender Equity – Equality – Gender Mainstreaming – Empowerment.

Unit II Women's Studies Vs Gender Studies: UGC's Guidelines – VII to XI Plans – Gender Studies :Beijing Conference and CEDAW-Exclusiveness and Inclusiveness.

Unit –III Areas of Gender Discrimination : Family – Sex Ratio – Literacy – Health – Governance – Religion Work Vs Employment – Market – Media – Politics – Law – Domestic Violence – Sexual Harassment – State Politics and Planning.

Unit – IV Women Development and Gender Empowerment : Initiatives – International Women's Decade – International Women's Year – National Policy for Empowerment of Women – Women Empowerment Year 2001 – Mainstreaming Global Policies.

Unit – V

Women's Movements and Safeguarding Mechanism: In India National / State Commission for Women (NCW) – All Women Police Station – Family Court – Domestic Violence Act – Prevention of Sexual Harassment at Work Place Supreme Court Guidelines – Maternity Benefit Act – PNDT Act – Hindu Succession Act 2005 – Eve Teasing Prevention Act – Self Help Groups – 73_{rd} Amendment for PRIs.

BOOK FOR STUDY

Manimekalai. N & Suba. S (2011), Gender Studies, Publication Division, Bharathidasan University, Tiruchirappalli

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI-2
B.A. /B.Sc. / B.Com. / B.R.Sc./ B.C.A. DEGREE COURSE
LIFE ORIENTED EDUCATION
ETHICS – II: EMPOWERMENT OF WOMEN

HRS / WK :1   CODE: U12VE4LVE02
                                                                             CREDIT :1
                                                                             MARKS : 100

OBJECTIVES:

- To make the learners aware of various Social, Gender issues and Cyber Crimes.
- To make them aware of the property rights.
- To make them understand and appreciate the role of media, in facing the challenges on various life issues.

UNIT – I: GENDER ISSUES

Feminism, Responsibilities of men and women towards Egalitarian society, Gender Identity-Factors contributing to gender identity (Family values, culture, tradition, religion, societal values, mass media).

UNIT – II: WOMEN AND MEDIA

Portrayal of women in media, Media world - News paper, Magazine, Cinema, TV, Video and Advertisements - Morality in Media and Right use of Media

UNIT – III: SOCIAL ISSUES RELATED TO WOMEN

Eve teasing, Rape, Dowry, Harassment in marriage, Divorce and Widows Remarriage, HIV & AIDS, Transgender, Female Genocide, sex workers, trafficking, fugitive, Female foeticide, handicapped children and women and evils of drug abuse

UNIT – IV: WAYS OF EMPOWERING WOMEN

Need for empowerment –Skills required for empowerment and Career Oriented Skills, Women's bill- Property rights, Models of Empowered Women-Mother Teresa, Indira Gandhi, and Helen Keller, Chanu Sharmila and Malala

UNIT – V: CYBER CRIME AGAINST WOMEN

Harassment and Spoofing via e-mail, Cyber Stalking, Cyber Pornography, Morphing - Cyber Laws, social network, face book, and twitter

REFERENCES:

1. Dr.M.Arumairaj et al., 1999, "Marching towards the Millenium ahead".

2. Thomas Anjugandam, 1999, "Grow Free Live Free" Salesian Publicaiton.

3. H.C PrettiNandhiniUpretti, jaipur 2000 "Women and problems of Gender Discrimination".

4. Thomas B.Jayaseelan, 2002, "Women: Rights and law" Indian Social Institute, New Delhi.

   Reni Jacob vol I & II, April- June 2004, "Vikasimi – The journal of Women's Empowerment, Ed,"

HOLY CROSS COLLEGE(AUTONOMOUS) TRICHIRAPALLI-2.
B.A/B.Sc./B.Com/B.R.Sc/B.C.A – DEGREE COURSES
LIFE ORIENTED EDUCATION
BIBLE STUDIES – II: OLD TESTAMENT

HRS / Wk :1   **CODE: U12VE4LVB02**
                                                             CREDIT :1
                                                             MARKS : 100

OBJECTIVE:
- Understanding the desires of God through Prophetic revelation and becoming sensitive to the heart beat of God.

UNIT – I: PURPOSE OF LIFE
Creation of man – fall of man (Gen 1-4)Plan of redemption through the life of :
- Noah (Gen 6-9); Abraham (Gen 12-18);
- Joseph (Gen 37-40); Moses (Exo 4-5);
- Joshua (Joshua 1-8)

UNIT – II: JUDGES AND KINGS
- **JUDGES:** Deborah (Judges 4); Samson (Judges 6-8); Gideon (Judges 13-16)
- **KINGS:** David (I Sam 17-31, II Sam 1-12); Solomon (I Kings 1-11, Proverbs 1-5,31)

UNIT – III: WOMEN IN THE BIBLE
- Women in the Old Testament
- Eve (Gen 3)
- Ruth (Ruth 1-4)
- Hannah (I Sam 1:1-28)
- Esther (Esther 1-6)

UNIT – IV: MINOR PROPHETS
- Brief Life History and teachings of
- Amos
- Jonah
- Micah
- Nahum
- Habakkuk

UNIT – V: MAJOR PROPHETS:
- Brief Life History and teachings of
- Isaiah (Is 1,6,11,36-38,40-42,44,50,53,61)
- Jeremiah (Jer 1-3,7-12,18-19,23)
- Ezechial (chapters 1,2,3,5,8,12 visions)
- Daniel (Daniel 1-6)

REFERENCES:

1. Missionaries Biographies. 1995, Amazon.com
2. Russell Fueller (1999) The Text book of the Twelve Minor Prophets. Wipf&Stock Publishers, UK.
3. Willis Judson Beecher (2002) The Prophets and The Promise. Wipf& Stock Publishers, UK

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2
B.A./B.Sc./ B.Com/ B,R.SC/ B.C.A - DEGREE COURSES
LIFE ORIENTED EDUCATION
CATECHISM – II: CHURCH AND SACRAMENTS

HRS / WK : 1   **CODE : U12VE4LVC02**
CREDIT : 1   **MARKS : 100**

OBJECTIVES:
- To instruct the students to live in relationship with God.
- To offer God's gift of the Holy Spirit.
- To build relationship with Jesus.
- To learn Sacraments and Prayer life through which a Christian is able to live in relationship with Christ.
- To enrich our devotion to Mother Mary and Saints.

UNIT – I: MISSION OF THE CHURCH
What is church (attributes) – Interpretation: body of the Christ- Bride of Christ, goal of all things- Historical as well as spiritual- Mystery and Sacrament-Pilgrim Church.

UNIT – II: PARTICIPATORY CHURCH (AS LAY FAITHFUL) AS A COMMUNITY
Work of the holy Spirit- Salt and leaven in the world "Church of modern World" Church as community – Its important aspect, early Christian Church – People of God as Church- Its characteristic and structure

UNIT – III: THE FUNCTIONARY CHURCH AND I
Ministerial Church – Relating Church –Parish Church- Role of lay faithful in the Church – Its challenges – Church and I.
Sacraments – Initiation- Social – Healing (all the seven) - stress on Confession, Confirmation and Holy Communion - Sacramental: holy "things" used –their sanctity

UNIT – IV: SACRAMENTS AND SACRAMENTAL
Sacraments-Initiation-Social-Healing (all the seven)-stress on Confession, Confirmation and Holy Communion. Sacramental: holy "things"used-their sancity.

UNIT – V: MARY AND WOMEN IN THE BIBLE- RUTH, ESTHER, JUDITH
Mary as a young virgin- Disciple- Her role in the Catholic Church-Annual feasts- Pilgrimages- Devotion to Mary, Theologies. Saints in the Church- 10 women saints. Ex. Mother Teresa, St.Alphonse.

REFERENCES:
1. "Vatican II Revised" Archbishop Angelo Fernandes Published by X.Diax de Rio S.J. Gujarat Sahitya Prakash, P.O.Box. 70, Gujarat, 388001, India.

2. "The Sacraments The Word of God at the Mercy of the Body" Claretian Publications, Malleswaram, Bangalore 560055.

Total Hours : 75   **Code   : U15TL4TAM04**
Hrs   : 5Hrs /Wk   **Marks : 100**
Credit   : 3

நோக்கங்கள்:

1. மாணவர்களுக்குத் தமிழர்தம் வாழ்வியல் விழுமியங்களை உணர்த்துதல்.
2. அறநெறிகள் வாழ்க்கைக்கு வழிகாட்டும் விதத்தினை எடுத்துரைத்தல்
3. சிகரம் தொட்ட சாதனையாளரின் வாழ்வியலைப் புலப்படுத்துதல்
4. மொழித்திறன் வளர்த்தல்.

பயன்கள்:

1. வாழ்க்கையின் பல்வகை நிலைகளையும் உணர்ந்து செயல்படச் செய்தல்
2. தன்னைத் தானே நெறிப்படுத்திக்கொள்ள, பயன்பாடடைய இலக்கியம் வழிகாட்டுவதை புரிந்துகொள்ளச் செய்தல்.
3. இடைவிடாத முயற்சியின் வெற்றிப்படிகளைக் கண்டுணர்ந்து மேன்மை அடையச் செய்தல்.
4. இருமொழிப் புலமையை வளர்த்தல்.

அலகு:1 செய்யுள்

1. குறுந்தொகை

    1. கொங்கு தேர் வாழ்க்கை அஞ்சிறைத் தும்பி - இறையனார்
    2. யாரும் இல்லை தானே கள்வன் - கபிலர்
    3. வேம்பின் பைங்காய்என் தோழி தரினே – மிளைக் கந்தன்
    4. உள்ளது சிதைப்போர் உளரெனப் படாஅர் - பாலை பாடிய
                                                                பெருங்கடுங்கோ
    5. நோற்றோர் மன்ற தோழி – குறுங்குடி மருதன்

  2. நற்றிணை

    1. மனையுறை புறவின் செங்கால் பேடை
    2. நீள்மலைக் கலித்த பெருங்கோற் குறிஞ்சி - பாண்டியன் மாறன் வழுதி
    3. ஆய்மலர் மழைக்கண் தெண்பனி உறைப்பவும் - நல்விளக்கனார்
    4. சிறுவீ முல்லைப் பெரிது கமழ் அலரி - மதுரை பேராலவாயர்

3. கலித்தொகை

    1. எறித்தரு கதிர்தாங்கி ஏந்திய குடைநீழல் - கபிலர்
    2. பாடுகம் வா வாழி தோழி - கபிலர்

அலகு:2   செய்யுள்

4.புறநானூறு

1. நின் நயந்து உறைநர்க்கும் - பெருஞ்சித்திரனார்
2. காய்நெல் அறுத்துக் கவளம் கொளினே - பிசிராந்தையார்
3. படைப்புப் பலபடைத்து -   பாண்டியன் அறிவுடைநம்பி
4. கேட்டல் மாத்திரை — கோப்பெருஞ்சோழன்
5. ஈன்று புறந்தருதல் என்தலைக் கடனே - பொன்முடியார்

5. பதிற்றுப்பத்து - ஐந்தாம் பத்து

1. சுடர் வீ வேங்கை
2. தசும்பு துளங்கு இருக்கை
3. ஊன்துவை அடிசில்

6. திருக்குறள்

1. அறத்துப்பால் - இனியவை கூறல்
2. பொருட்பால்   - வினை செயல்வகை
3. காமத்துப்பால் - புலவி நுணுக்கம்

அலகு:3

தமிழ் இலக்கிய வரலாறு (துறை வெளியீடு)

சங்ககாலம் - சங்கம் மருவியகாலம்

எட்டுத்தொகை, பத்துப்பாட்டு, பதினெண்கீழ்க்கணக்கு நூல்கள்

அலகு:4

வாழ்க்கை வரலாறு

அன்னை தெரசா   - பா. தீனதயாளன்

அலகு:5

பொது — மொழிபெயர்ப்பு

பாட நூல்கள்

1. செய்யுள் நூல்   - தமிழாய்வுத்துறை வெளியீடு
2. தமிழ் இலக்கிய வரலாறு   - தமிழாய்வுத்துறை வெளியீடு
3. வாழ்க்கை வரலாறு
   பா.தீனதயாளன்   - அன்னை தெரசா
4. மொழிபெயர்ப்பு   - தமிழாய்வுத்துறை வெளியீடு

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI-620002
DEPARTMENT OF HINDI
PART – I LANGUAGE HINDI FOR B.A, B.Sc & B.Com
HINDI PAPER-IV FUNCTIONAL HINDI & TRANSLATION
SEMESTER – IV

HRS/WEEK : 5   **CODE: U15HN4HIN04**
CREDITS : 3   **MARKS : 100**

UNIT – I   Functional Hindi

UNIT- II   Adhunic Kaal

UNIT- III General Essays

       Parishram Ka Mahatva, Anushasan, Paropakar, Jawaharlal
       Nehru, Deepavalli, Bharath Mein Computer

UNIT- IV   Letter Writing

UNIT- V   Anuvad Abhyas - III

    Books   Prescribed :

- General Essays   - D.B.H.P. Sabha Publishers, Chennai-17
- Abinava Patra Lekhan   - D.B.H.P. Sabha Publishers, Chennai-17
- Anuvad Abhyas – III   - D.B.H.P. Sabha Publishers, Chennai-17

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI – 2
DEPARTMENT OF FRENCH
<u>SYLLABUS</u>
SEMESTER IV
PART I - LANGUAGE - FRENCH PAPER IV [LANGUAGE & CULTURE
(ÉCHO A2 2ₑ édition)]
(For candidates admitted 2013 onwards)

HRS/WEEK : 5	**CODE : U15FR4FRE04**
CREDIT : 3	**MARKS : 100**

Unit 1 C'est la fête !

Les pronoms objets directs et indirects – parler d'une fête – exprimer des goûts et des préférences – fêtes sans frontières – plats des fêtes – les jours fériés – les saisons– le calendrier – les fêtes traditionnelles, importées, francophones.

Unit 2 Vous plaisantez !

Le conditionnel présent, la distinction du futur et du conditionnel – le mouvement en général – raconter une anecdote – journée de détente – la naissance d'un chef d'œuvre - l'art au début du 20e siècle – le plaisir de jeux de mots.

Unit 3 On s'entend bien !

Les constructions « faire + verbe » et « laisser + verbe », le discours rapporté – décrire le caractère ou le comportement, exprimer l'accord et le désaccord – le langage des couleurs – sujets de conversation – sujets d'étonnement.

Unit 4 À vos risqué et périls !

Le subjonctif présent, la voix passive – l'aventure d'aujourd'hui – travailler pour la planète – réussites et échecs - marathon de Paris – plaisir des sports – les sports les plus regardés et pratiqués - les français et les sports– les jeunes issus de l'immigration.

Unit 5 La vie est dure

Les pronoms possessifs, les adjectifs, les pronoms indéfinis – parler de ses activités quotidiennes, exprimer la confiance ou la méfiance – les taches ménagères – la France insatisfaite - sans travail – la chanteuse Diam's – le film 'Le Couperet de Costa-Gavras'.

TEXT BOOKS :

ECHO A2 – METHODE DE FRANÇAIS & CAHIER PERSONNEL D'APPRENTISSAGE
Authors: J. Girardet and J. Pécheur
Publication: CLÉ INTERNATIONAL, 2010.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2.
2015 - 2016
I B.A., B.Sc., B.Com., B.R.Sc., B.C.A., B.B.A.,SEMESTER IV
PART II – ENGLISH IV - GENERAL ENGLISH PAPER IV

HOURS – 6 PER WEEK   **CREDIT : 3**
CODE :U13EL4GEN04
OBJECTIVES
To strengthen the LSRW skills of students through inter-active approaches, participatory methods and activity oriented exercises.
To develop skills required for referential and independent learning.
To focus on writing skills like creative and comparative writing and book reviews.
To reinforce sub skills including vocabulary, grammar, dialogue, report writing and note making.

UNIT I: READ AND COMMUNICATE: HISTORICAL SKETCHES
The Renaissance
India under the British Raj
UNIT II: READ AND COMMUNICATE : MODERN FABLES
Nonchi Nona and Kotiya the Cat
The Competition
UNIT III: READ AND COMMUNICATE : MODERN FABLES
The Nightingale and the Rose
The Butterfly that Stamped
UNIT IV -READ AND COMMUNICATE : BIOGRAPHIES AND MODERN FABLES
Napoleon Bonaparte
The Hiding Place

UNIT V
GRAMMAR   - Tenses
COMPREHENSION   - General
COMPOSITION   - 1. Note making
                     2. Dialogue
                     3. Creative Writing
                     4. Narrative Writing
                     5. Imaginative Writing
GENERAL ESSAY – 5 TOPICS
         1. Should capital punishment be abolished?
2.   Is a corruption- free India a dream?
3.   The nuclear family and its consequent changes in society.
4.   The threat of terrorism.
5.   If man becomes immortal…
THINK BETTER - READ AND COMMUNICATE: MODERN FABLES
1 – 10 for Internal Testing
BOOKS FOR REFERENCE
Oranee Jansz : EXPLORATIONS *A Course in reading, thinking and communication skills.*
New delhi: Cambridge university press. 2004. Print.

List of words \ compound words\phrases for making sentences:
1.   Store house of knowledge
2.   Genre

3. To be divided over
4. Taboo
5. To take over
6. Hump
7. Bushy
8. Tiered
9. To roll from side to side
10. Flickered
11. To sail through
12. To tremble all over
13. Ecstasy
14. Thunder-clap
15. Mousy-quite
16. Collision
17. Exiled
18. Revolution
19. To come round
20. To fight for a cause

Hours / Week: 5   **Code: U15CA4MCT06**
Credits: 5   **Marks: 100**

OBJECTIVE:
To provide a sound appreciation of the fundamentals, the syntax of the language, as well as the powerful concepts and their applicability in real-world problems.

UNIT I

JAVA EVOLUTION : Java History – Java Features – How Java Differs from C and C++ -- Java and Internet – Java and World Wide Web – Web Browsers – Hardware and Software Requirements
– Java Support Systems – Java Environment.
OVERVIEW OF JAVA LANGAGE : Introduction – Simple Java Program – More of Java – An Application with Two Classes – Java Program Structure – Java Tokens – Java Statements – Implementing a Java Program – Java Virtual Machine – Command Line Arguments – Programming Style - **TYPE CONVERSION IN EXPRESSION-DECISION MAKING AND BRANCHING :**
Introduction – Decision Making with If Statement – Simple If Statement – The If ..Else
Statement – Nesting of If..Else Statements – The Else If Ladder – The Switch Statement – The ? : Operator.

UNIT II
DECISION MAKING AND LOOPING: Introduction – The While Statement – The do Statement
– The for Statement – Jumps in Loops – Labeled Loops. **CLASSES, OBJECTS AND METHODS:** Introduction – Defining a Class – Fields Declaration – Methods Declaration – Creating Objects – Accessing Class Members – Constructors – Methods Overloading – Static Members – Nesting of Methods – Inheritance: Extending a Class – Overriding Methods – Final Variables and Methods – Final Classes – Finalizer Methods – Abstract Methods and Classes – Methods with Varargs – Visibility Control.

UNIT III:
INTERFACES: MULTIPLE INHERITANCE: Introduction – Defining Interfaces – Extending Interfaces – Implementing Interfaces – Accessing Interface Variables.
PACKAGES : PUTTING CLASSES TOGETHER : 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.

UNIT IV:
MULTITHREADED PROGRAMMING : Introduction – Creating Threads – Extending the Thread Class – Stopping and Blocking a Thread – Life Cycle of a Thread – Using Thread Methods – Thread Exceptions – Thread Priority – Synchronization – Implementing the „Runnable‟ Interface- Inter thread communication. **MANAGING ERRORS AND EXCEPTIONS :** Introduction – Types of Errors – Exceptions – Syntax of Exception Handling Code – Multiple Catch Statements – Using Finally Statement – Throwing Our Own Exceptions – Using Exceptions for Debugging.

UNIT V:

APPLET PROGRAMMING : Introduction – How Applets Differ from Applications – Preparing to Write Applets – Building Applet Code – Applet Life Cycle – Creating an Executable Applet – Designing a Web Page – Applet Tag – Adding Applet to Html File – Running the Applet – More About Applet Tag – Passing Parameters to Applets – Aligning the Display – More About Html Tags
– Displaying Numerical Values – Getting Input from the User-Event Handling-Introduction to AWT package-Introduction to Swings-**JAVA COLLECTIONS:** Overview of Interfaces-Overview of Classes-Overview of Algorithms.

TEXT BOOK:

1. E.Balagurusamy, **"Programming with JAVA"**, 5th Edition, Tata McGraw-Hill Publishing Company Limited, New Delhi.

UNIT I	:	CHAPTERS 2, 3, 5.13 & 6	
UNIT II :		CHAPTERS 7, 8 **UNIT III :**	CHAPTERS 10,11 **UNIT IV :**
		CHAPTERS 12, 13 **UNIT V :**	CHAPTERS 14,17

REFERENCE BOOKS:

1.   Herbert Schildt, **"Java The Complete Reference"**, 7th edition, Tata McGraw-Hill Publications Pvt. Ltd., New Delhi

2.   Y.Daniel Liang, **"Introduction to Java Programming"** , 10th edition, Pearson Education Ltd

3.   David J.Eck, **"Programming :Introduction to programming using Java"**, 6th edition, Createspace Publications

4.   Joshua Bloch, **"Effective Java"**, 2nd edition, Addison Wesley Publications.

5.   Kathy Sierra, Bert Bates, **"Head First Java",** 2nd edition, O"Reilly Publications.

MAJOR ELECTIVE – 1: JAVA PROGRAMMING LAB

Hours/Week: 5   **Code: U15CA4MEP01**
Credits: 5   **Marks: 100**

1. Simple programs.

2. Control structures

3. Classes & objects and methods

4. Arrays

5. Interface

6. Inheritance

7. Packages

8. Multithreaded programming

9. Exception handling

10. Applets

11. Program using AWT

12. Program using Java

Collections

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2
DEPARTMENT OF COMPUTER SCIENCE
BACHELOR OF COMPUTER APPLICATION :SYLLABUS
SEMESTER IV
(For Candidates admitted from June 2015 Onwards)
UNIX AND SHELL PROGRAMMING LAB

Hours/Week : 5   **Code: U15CA4MEP02**
Credits:5   **Marks:100**

1. Basic Unix Commands.
2. C & C++ Program in Unix Environment.
3. Simple Shell Scripts.
4. Menu Driven Program
5. Files and Directories
6. Pipes and Filters
7. Application Programs
8. Customizing the Environment
9. Process Management
10. System Calls
11. Semaphores
12. Inter Process Communication
13. System Administrator Commands / Program

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2
DEPARTMENT OF COMPUTER SCIENCE
BACHELOR OF COMPUTER APPLICATION : SYLLABUS
SEMESTER IV
(For Candidates admitted from June 2015 Onwards)
OPEN SOURCE TECHNOLOGY LAB

Hours/Week : 5   **Code: U15CA4MEP02**
Credits:5   **Marks:100**

1. Write a PHP program using built-in functions.
2. Write a PHP program for shopping cart.
3. Write a PHP program that displays marks, total, grade of a student in tabular format by accepting user inputs for name, number and marks from a HTML form.
4. Write a PHP program to access the data stored in a mysql table.
5. Write a PHP program for student marklist preparation using database connection.
6. Write a PHP program for employee payroll preparation using database connection.
7. Performing all the MySQL queries using GUI(PHPMy Admin)

ALLIED 5(OPTIONAL) – BASICS OF ACCOUNTING

Hours/Week: 4   Code: U15CO4AOT08
Credits :4   Marks:100

Unit I Introduction
Accounting Concepts – Conventions – Rules of Double Entry – Journal – Ledger – Trial Balance.

Unit II Accounting Cycle
Trading Account, Profit and Loss Account, Balance Sheet, Subsidiary Books – Purchases Book, Sales Book, Cash Book, Simple Cash Book, Petty Cash Book.

Unit III
Depreciation Accounting
Depreciation Accounting Straight Line Method, Written Down Value Method and Annuity Method.

Unit IV
Rectification of Errors
Rectification of Errors, Basic Principles for Rectification of Errors, Suspense Account, Errors Disclosed by Trial Balance, Guidelines to Locate Errors in the Trial Balance.

Unit V
Computer Accounting
Computer Accounting and Algorithm – Areas of Application of Computer in Accounting, Features and Advantages of Computers and Computer Accounting – Algorithm, Requisites of an Effective Algorithm – Features of Algorithm.

Theory 40% & Problems 60%

Books for Study:

T.S. Reddy and A. Murthy, "*Financial Accounting*" , 2004,Margham Publications.

Books for Reference:
1. M.c. Shukla T.S. Grewal & SC Gupta , "**Advanced Accountancy**",2007, S. Chand and Co. Volume I Pillai and Bagavathy , "**Fundamentals of Advanced Accounting**",2004,S.Chand & Co.

2. T.S. Reddy and Y. Hari Prasad Reddy, "**Financial and Management Accounting**",2012 Margam Publications.

3. Financial Accounting , " **B. Charumathy and L. Vinayagam**", 2012,S.Chand & Company

Hours/Week: 4   **CODE: U15CA4AOP03**
Credits:3   **Marks:100**

EXERCISES

i) Petty Cash

ii) Subsidary Books

iii) Subsidary Books With Inventory

iv) Accounts Only

v) Accounts With Inventory

vi) Accounts with Inventory –Tax Initialization

vii) Cost centre and cost category I

viii)   Cost centre and cost category II

ix) Final Accounts without adjustment

x) Final Accounts with adjustment

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI-2
B.A. /B.Sc. / B.Com. / B.R.Sc./ B.C.A. DEGREE COURSE
LIFE ORIENTED EDUCATION
ETHICS – II: EMPOWERMENT OF WOMEN

HRS / WK :1   **CODE: U12VE4LVE02**
                                                             CREDIT :1
                                                             MARKS : 100

OBJECTIVES:

- To make the learners aware of various Social, Gender issues and Cyber Crimes.
- To make them aware of the property rights.
- To make them understand and appreciate the role of media, in facing the challenges on various life issues.

UNIT – I: GENDER ISSUES

Feminism, Responsibilities of men and women towards Egalitarian society, Gender Identity-Factors contributing to gender identity (Family values, culture, tradition, religion, societal values, mass media).

UNIT – II: WOMEN AND MEDIA

Portrayal of women in media, Media world - News paper, Magazine, Cinema, TV, Video and Advertisements - Morality in Media and Right use of Media

UNIT – III: SOCIAL ISSUES RELATED TO WOMEN

Eve teasing, Rape, Dowry, Harassment in marriage, Divorce and Widows Remarriage, HIV & AIDS, Transgender, Female Genocide, sex workers, trafficking, fugitive, Female foeticide, handicapped children and women and evils of drug abuse

UNIT – IV: WAYS OF EMPOWERING WOMEN

Need for empowerment –Skills required for empowerment and Career Oriented Skills, Women's bill- Property rights, Models of Empowered Women-Mother Teresa, Indira Gandhi, and Helen Keller, Chanu Sharmila and Malala

UNIT – V: CYBER CRIME AGAINST WOMEN

Harassment and Spoofing via e-mail, Cyber Stalking, Cyber Pornography, Morphing - Cyber Laws, social network, face book, and twitter

REFERENCES:

5. Dr.M.Arumairaj et al., 1999, "Marching towards the Millenium ahead".

6. Thomas Anjugandam, 1999, "Grow Free Live Free" Salesian Publicaiton.

7. H.C PrettiNandhiniUpretti, jaipur 2000 "Women and problems of Gender Discrimination".

8. Thomas B.Jayaseelan, 2002, "Women: Rights and law" Indian Social Institute, New Delhi.

   Reni Jacob vol I & II, April- June 2004, "Vikasimi – The journal of Women's Empowerment, Ed,"

HOLY CROSS COLLEGE(AUTONOMOUS) TRICHIRAPALLI-2.
B.A/B.Sc./B.Com/B.R.Sc/B.C.A – DEGREE COURSES
LIFE ORIENTED EDUCATION
BIBLE STUDIES – II: OLD TESTAMENT

HRS / Wk :1   **CODE: U12VE4LVBO2**
                                                    CREDIT :1
                                                    MARKS : 100

OBJECTIVE:
- Understanding the desires of God through Prophetic revelation and becoming sensitive to the heart beat of God.

UNIT – I: PURPOSE OF LIFE
Creation of man – fall of man (Gen 1-4)Plan of redemption through the life of :
- Noah (Gen 6-9); Abraham (Gen 12-18);
- Joseph (Gen 37-40); Moses (Exo 4-5);
- Joshua (Joshua 1-8)

UNIT – II: JUDGES AND KINGS
- **JUDGES:** Deborah (Judges 4); Samson (Judges 6-8); Gideon (Judges 13-16)
- **KINGS:** David (I Sam 17-31, II Sam 1-12); Solomon (I Kings 1-11, Proverbs 1-5,31)

UNIT – III: WOMEN IN THE BIBLE
- Women in the Old Testament
- Eve (Gen 3)
- Ruth (Ruth 1-4)
- Hannah (I Sam 1:1-28)
- Esther (Esther 1-6)

UNIT – IV: MINOR PROPHETS
- Brief Life History and teachings of
- Amos
- Jonah
- Micah
- Nahum
- Habakkuk

UNIT – V: MAJOR PROPHETS:
- Brief Life History and teachings of
- Isaiah (Is 1,6,11,36-38,40-42,44,50,53,61)
- Jeremiah (Jer 1-3,7-12,18-19,23)
- Ezechial (chapters 1,2,3,5,8,12 visions)
- Daniel (Daniel 1-6)

REFERENCES:

1. Missionaries Biographies. 1995, Amazon.com
2. Russell Fueller (1999) The Text book of the Twelve Minor Prophets. Wipf&Stock Publishers, UK.
3. Willis Judson Beecher (2002) The Prophets and The Promise. Wipf& Stock Publishers, UK

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2
B.A./B.Sc./ B.Com/ B,R.SC/ B.C.A - DEGREE COURSES
LIFE ORIENTED EDUCATION
CATECHISM – II: CHURCH AND SACRAMENTS

HRS / WK : 1

CODE : U12VE4LVC02
CREDIT : 1
MARKS : 100

OBJECTIVES:
- To instruct the students to live in relationship with God.
- To offer God's gift of the Holy Spirit.
- To build relationship with Jesus.
- To learn Sacraments and Prayer life through which a Christian is able to live in relationship with Christ.
- To enrich our devotion to Mother Mary and Saints.

UNIT – I: MISSION OF THE CHURCH
What is church (attributes) – Interpretation: body of the Christ- Bride of Christ, goal of all things- Historical as well as spiritual- Mystery and Sacrament-Pilgrim Church.

UNIT – II: PARTICIPATORY CHURCH (AS LAY FAITHFUL) AS A COMMUNITY
Work of the holy Spirit- Salt and leaven in the world "Church of modern World" Church as community – Its important aspect, early Christian Church – People of God as Church- Its characteristic and structure

UNIT – III: THE FUNCTIONARY CHURCH AND I
Ministerial Church – Relating Church –Parish Church- Role of lay faithful in the Church – Its challenges – Church and I.
Sacraments – Initiation- Social – Healing (all the seven) - stress on Confession, Confirmation and Holy Communion - Sacramental: holy "things" used –their sanctity

UNIT – IV: SACRAMENTS AND SACRAMENTAL
Sacraments-Initiation-Social-Healing (all the seven)-stress on Confession, Confirmation and Holy Communion. Sacramental: holy "things"used-their sancity.

UNIT – V: MARY AND WOMEN IN THE BIBLE- RUTH, ESTHER, JUDITH
Mary as a young virgin- Disciple- Her role in the Catholic Church-Annual feasts- Pilgrimages-Devotion to Mary, Theologies. Saints in the Church- 10 women saints. Ex. Mother Teresa, St.Alphonse.

REFERENCES:

1.   "Vatican II Revised" Archbishop Angelo Fernandes Published by X.Diax de Rio S.J. Gujarat Sahitya Prakash, P.O.Box. 70, Gujarat, 388001, India.

2.   "The Sacraments The Word of God at the Mercy of the Body" Claretian Publications, Malleswaram, Bangalore 560055.

MAJOR CORE 7: COMPUTER ORGANIZATION AND ARCHITECTURE

Hours/Week : 5   CODE: U15CA5MCT07
Credits:4   Marks:100
OBJECTIVE :
To give Basic Knowledge on Various Building Blocks of a Digital Computer and Architecture.

UNIT I

NUMBER SYSTEMS: Binary, Decimal, Octal, Hexadecimal – Conversion from one to another – Complements – ASCII – Excess 3 – Gray – Parity Generator and Checker.
DIGITAL LOGIC: Basic Logic Gates - Basic theorems and properties of Boolean algebra - NAND, NOR Implementation – K- Map – Pairs, Quads, Octet – K map Simplification – Sum of Product and Product of Sum – Don"t Care conditions.

UNIT II

COMBINATIONAL LOGIC CIRCUITS DESIGN: Multiplexers – De multiplexers – Encoders – Decoders - Arithmetic Building blocks – Half Adder – Full Adder –Half Subtractor – Full Subtractor. **FLIPFLOPS, REGISTERS, COUNTERS:** RS FlipFlop – JK FlipFlop – D Flipflop – T Flipflop – Edge triggered Flipflop – Master – Slave Flipflop – Types of Registers – Serial in Serial Out – Serial in Parallel out – Parallel in Serial out – Parallel in Parallel out – Counters – Ripple counter.

UNIT III

INPUT – OUTPUT ORGANIZATION: Peripheral Devices -- Input Output Interface – Asynchronous Data Transfer – Modes of Transfer – Priority Interrupt – Direct Memory Access -- Input Output Processor – Serial Communication.

UNIT IV

CENTRAL PROCESSING UNIT: General Register Organization – Stack Organization – Instruction Formats – Addressing Modes – Data Transfer and Manipulation.
PIPELINE AND VECTOR PROCESSING: Parallel Processing – Pipelining – Arithmetic Pipeline – Instruction Pipeline – RISC Pipeline – Vector Processing.

UNIT V

MEMORY ORGANIZATION: Memory Hierarchy – Main Memory – RAM and ROM Chips – Memory Address Map – Memory Connection to CPU – Auxiliary Memory – Magnetic Tape – Associative Memory -- Cache Memory – Virtual Memory – Memory Management Hardware.

TEXT BOOKS

1. Albert Paul Malvino, Donald. P.Leach , **Digital Principles and Applications**, 2002, Tata McGraw- Hill Publishing Company Limited, New Delhi.

   UNIT I : Chapters 2.1 -2.7, 3.1 - 3.8, 5.1 – 5.8
   UNIT II : Chapters 8.1 – 8.7, 9.1 – 9.5, 10.1 – 10.3,4.1 – 4.3 ,4.6

2. M.Morris Mono, **Computer System Architecture**, Third Edition,2005,Prentice – Hall of India Private Ltd, New Delhi.

   UNIT III : Chapters 11
   UNIT IV : Chapters 8.1 – 8.6, 9.1 – 9.6
   UNIT V : Chapters 12

REFERENCE BOOKS

1. B.Govinderajalu, "**Computer Architecture and Organization**",2004 ,Tata McGraw – Hill Publishing Company, New Delhi.

2. William Stallings, " **Computer Organization and Architecture** ", 2006, 7th Edition ,Pearson Education.

3. Carl Hamacher, Auonko Uranesic and Safwat Zaky , "**Computer Organization**", 2002, 5th Edition, Tata McGraw – Hill Publishing Company, New Delhi.

4. Kai Hwang , "**Advanced Computer Architecture**" , 2000, Tata McGraw – Hill Publishing Company, New Delhi.

5. P.Pal Chaudhuri, "**Computer Organization and Design**",2008, 3rd Edition , Prentice Hall of India Pvt Ltd, New Delhi.

MAJOR CORE 8 - VISUAL PROGRAMMING

Hours/Week : 5 **CODE: U15CA5MCT08**
Credits:4 **Marks:100**

OBJECTIVE
To highlight the framework, programming tools and techniques of VB.Net
To develop various windows applications in object oriented programming concept.

UNIT I
.NET FRAMEWORK AND VB.NET: Evolution of the .NET Framework – Overview of the .Net Framework – VB.NET – Simple VB.Net Program. **VARIABLES, CONSTANTS AND EXPRESSIONS:** Value Types and Reference Types – Variable Declarations and Initializations – Value Data Types – Reference Data Types – Boxing and Unboxing – Arithmetic Operators – Textbox Control – Label Control – Button Control.

UNIT II
CONTROL STATEMENTS: If Statements – Radio Button Control – CheckBox Control – Group Box Control – Listbox Control – Checked List Box Control – Combo box Control – Select Case Statement – While Statement – Do Statement – For Statement. **METHODS AND ARRAYS:** Types of Methods– One Dimensional Array – Multi Dimensional Arrays – Jagged Arrays. **CLASSES:** Definition And Usage of a Class – Constructor Overloading – Copy Constructor – Instance and Shared Class Members – Shared Constructors.

UNIT III
INHERITANCE AND POLYMORPHISM: Virtual Methods – Abstract Class and Abstract Methods – Sealed Classes. **INTERFACES, NAMESPACES AND COMPONENTS:** Definition of Interfaces – Multiple Implementations of Interfaces – Interface Inheritance – Namespaces – Components – Access Modifiers. **DELEGATES, EVENTS AND ATTRIBUTES:** Delegates – Events – Attributes – Reflection.

UNIT IV
EXCEPTION HANDLING: Default Exception Handling Mechanism – User Defined Exception Handling Mechanism – Throw Statement – Custom Exception. **MULTITHREADING:** Usage Of Threads – Thread Class – Start(), Abort(), Join(), and Sleep() Methods – Suspend() And Resume() Methods – Thread Priority – Synchronization. **I/O STREAMS:** Binary Data Files – Text Files - Data Files – FileInfo and DirectoryInfo Classes.

UNIT V

ADDITIONAL CONTROLS: Timer – ProgressBar – LinkLabel – Panel – TreeView – Splitter – Menu – SDI & MDI – Dialog Boxes – Toolbar – StatusBar. **DATABASE CONNECTIVITY:** Advantages Of ADO.NET – Managed Data Providers – Developing a Simple ADO.NET Based Application – Creation of Data Table – Retrieving Data From Tables – Table Updating – Disconnected Data Access Through Dataset Objects. **VALIDATION CONTROLS:** Validation controls, List controls.

TEXT BOOK

1. Muthu C, "**Visual Basic.NET**", Second Edition, Vijay Nicole Imprints Private Limited, Chennai, 2008.

UNIT I: Chapters 1, 3
UNIT II: Chapters 4, 5, 6
UNIT III: Chapters 7, 8, 9
UNIT IV: Chapters 10, 11, 12
UNIT V: Chapters 14, 15, 17

REFERENCE BOOKS

1. Peter Aitken"s, "**Visual Basic .NET Programming**", First Edition, Dream Tech Press., 2002.
2. Steven Holzner, "**Visual Basic.Net Black Book**", Published by Coriolis Group Books, 2004.
3. Paul Lomax, Ron Petrusha, Steven Roman, "**VB.NET Language Pocket Reference**", Shroff Publishers & Distributors PVT. LTd./O'Reilly, 2003.
4. Julia Case Bradley, Anita C. Millspaugh, "**Programming in Visual Basic.NET**", Fifth Edition, Career Education.
5. Richard Blair, Jonathan Crossland, Matthew Reynolds, Thearon Willis, "**Beginning VB.NET**", Second Edition, Wiley Publishing Inc., 2003.

Hours/Week : 5   **CODE:U15CA5MCT09**
Credits:4   **Marks:100**

OBJECTIVE
To impart deep knowledge on different layers of Computer Networks.

UNIT I

INTRODUCTION: Uses of Computer Networks - Network Hardware - Network Software - Reference models OSI reference Model (TCP/IP reference Model, A comparison of the OSI and TCP/IP Reference Models).

UNIT II

THE PHYSICAL LAYER: Guided Transmission Media - Wireless Transmission - The Public Switched Telephone Network- Mobile Telephone System.

UNIT III

THE DATA LINK LAYER: Data Link Layer Design issues - Error Detection and Correction - Elementary Data Link Protocols - Sliding Window Protocols.

UNIT IV

THE NETWORK LAYER: Network Layer Design Issues - Routing Algorithms - Congestion Control Algorithms. **THE TRANSPORT LAYER**: The Transport Service (Services Provided to the Upper Layers, Transport Service Primitives) – Elements of Transport Protocols.

UNIT V

THE APPLICATION LAYER: DNS - Domain Name System - Electronic Mail - The World Wide Web. **NETWORK SECURITY:** Cryptography – Symmetric Key Algorithms – Public Key Algorithms.

TEXT BOOK

1. Tanenbaum Andrew . S, **Computer Networks**, 2006, Fourth Edition, Prentice-Hall India of India Pvt. Ltd., New Delhi.

UNIT I   : Chapters 1 (1.1, 1.2, 1.3, 1.4.1 to 1.4.3)
UNIT II   : Chapters 2 (2.2, to 2.6)
UNIT III   : Chapters 3 (3.1 to 3.4)
UNIT IV   : Chapters 5 (5.1 to 5.3), 6 (6.1.1, 6.1.2, 6.2)
UNIT V   : Chapters 7 (7.1, 7.2, 7.3), 8 (8.1 to 8.3)

REFERENCE BOOKS :

1. Black Uyless D., **Data Communication and Distributed Networks**, 2000, Prentice Hall of India Pvt. Ltd., New Delhi.

2. Forouzan Behrouz A.,   **Local Area Networks**, 2003, Tata McGraw Hill   Publishing Limited, New Delhi.

3. Godbole Achyut S., **Data Communication and Networks**, 2002, Tata   McGraw   Hill Publishing Limited, New Delhi.

4. Mansfield Kenneth C., Antonakos James L., **An Introduction to Computer Networking**, 2002, Prentice Hall of India, New Delhi.

5. Tanenbaum Andrew S., **Computer Networks**, 2003, Pearson Education,   Asia.

MAJOR CORE 10 - VISUAL PROGRAMMING LAB

Hours/Week : 5   **CODE: U15CA5MCP10**
Credits:4   **Marks:100**

1. Develop an Image Viewer Application.

2. Simulate a Scientific Calculator.

3. Simulate a Paint Brush Application.

4. Design a Notepad Editor using Dialog Control.

5. Create a VB.NET UI to Move an object using Timer Control.

6. Develop a Simple Student Information System Using Files.

7. Develop a College Admission Form Using MDI.

8. Design a Bio – Data Application Form and enforce Validation.

9. Develop an Inventory Control System Using ADO.NET.

10. Develop a Continuous Internal Assessment System Using Grid Control.

11. Develop Employee‟s Pay details for an organization

12. Prepare bills for the following:

    a) Electricity Bill

    b) Telephone Bill

MAJOR ELECTIVE 2: EMBEDDED SYSTEMS

Hours/Week : 5   **CODE: U15CA5MET01**
Credits:4   **Marks:100**

OBJECTIVE:
To provide fundamental concept of Embedded systems, programming and real time operating systems.

UNIT I
Introduction to Embedded systems: Embedded Systems – Processor embedded into a system – software embedded in a system – Embedded hardware units and devices in a system – Design process in embedded system - Challenges in Embedded system – Design examples in Embedded System – # Classification in Embedded System #

UNIT II
Devices and Communication buses for Devices Network: I/O types and examples – Serial communication devices – Parallel device ports – Interfacing features in device ports – Wireless devices Timer and counting devices – Watchdog timer – Network embedded systems – Serial bus communication protocols

UNIT III
Device Drivers – interrupt service mechanism – Interrupt sources – Multiple interrupts – Direct memory access – Direct Memory Access - Device driver programming. Interprocess communication and synchronization of processes, threads and tasks – Multiple process in an application – Multiple threads in an application – Tasks – Task states – Semaphores – Semaphore

UNIT IV
Programming concepts and embedded programming in C, C++ and Java – Software programming in Assembly Language ALP and in high level language C – C program elements: Header and source files and preprocessor directives

UNIT V
Real-Time operating systems: OS services – process management – Timer functions – Event functions - Device , File and I/O subsystems management – Interrupt routines in RTOS Environment and Handling of Interrupt source calls – Real time operating system – Basic design using an RTOS – RTOS task scheduling models, interrupt latency and response of the task as performance Metrics .

Text Book
1. Embedded systems – Architecture, Programming and Design by Raj Kamal, Second Edition – TMH, 2008.

Reference book
Mohamed Ali Maszidi & Janice Gillispie Maszidi, "The 8051 Microcontroller and Embedded System", Pearson Publishers.

MAIN ELECTIVE 2: COMPUTER GRAPHICS

Hours/Week : 5   **CODE:U15CA5MET02**
Credits:5   **Marks:100**

OBJECTIVE:
    This course introduces the concept of Computer Graphics.

UNIT I

OVERVIEW OF GRAPHICS SYSTEMS: Video display devices: Refresh cathode-ray tubes -
Raster-Scan Displays - Random-Scan Displays - Color CRT Monitors - Direct-View Storage
Tubes - Flat-Panel Displays - Three-Dimensional Viewing Devices - Stereoscopic and Virtual-
Reality Systems - Raster-Scan Systems: Video Controller - Raster-Scan Display Processor -
Random-Scan Systems - Graphics Monitors and Workstations - Input Devices: Keyboards-
Mouse - Trackball and space ball - Joysticks - Data Glove - Digitizers - Image Scanners - Touch
Panels - Light Pens - Voice Systems- Hard Copy Devices.

UNIT II

OUTPUT PRIMITIVES: Points and Lines - Line-Drawing Algorithms: DDA Algorithm-
Bresenham's Line Algorithm - Loading the Frame Buffer - Line Function - Circle-Generating
Algorithms: Properties of Circles - Midpoint Circle Algorithm - Curve Functions – Fill-Area
Functions – Character Generation.

UNIT III

ATTRIBUTES OF OUTPUT PRIMITIVES: Line Attributes: Line Type - Line width - Pen
and Brush Options - Line color - Curve Attributes - Color and Grayscale Levels: Color Tables-
Grayscale - Area-Fill Attributes: Fill Styles - Pattern Fill - Soft Fill - Character Attributes: Text
Attributes - Marker Attributes - Bundled Attributes: Bundled Line Attributes - Bundled Area-Fill
Attributes - Bundled Text Attributes - Bundled Marker Attributes -Inquiry Functions.

UNIT IV

TWO - DIMENSIONAL GEOMETRIC TRANSFORMATIONS: Basic Transformations:
Translation – Rotation -- scaling – Matrix Representations and Homogeneous Coordinates -
Composite Transformations: Translations – Rotations -- Scaling. Other Transformations:
Reflection
-- Shear - Transformations Between Coordinate systems - Affine Transformations -
Transformation functions - Raster Methods for transformations. **TWO – DIMENSIONAL
VIEWING :** Window to View port Coordinate Transformations - Clipping Operations - Point
Clipping - Line Clipping: Cohen Sutherland Line Clipping – Polygon Clipping: Sutherland-
Hodgeman Polygon Clipping.

UNIT V

THREE DIMENSIONAL CONCEPTS: Three - Dimensional Display Methods: Parallel projection -- Perspective Projection -- Depth Cueing -- Visible Line and Surface – Identification -- Surface Rendering -- Exploded and Cutaway Views -- Three-dimensional and Stereoscopic views -- Three-Dimensional Graphics Packages.
TWO – DIMENSIONAL VIEWING : Viewing Coordinates : Specifying the View Plane-- Transformation from World to Viewing Coordinates -- Projections: Parallel projection -- Perspective Projection.

TEXT BOOK :
1.Donald Hearn & M.Pauline Baker 'COMPUTER GRAPHICS' , 2006,Prentice Hall of India, New Delhi.

Unit I   : Chapter-2 (2.1-2.6)
Unit II   : Chapter-3 (3.1-3.5,3.9,3.12,3.14)
Unit III   : Chapter-4 (4.1- 4.7)
Unit IV   : Chapters 5(5.1 - 5.8), 6(6.3, 6.5-6.7,6.8)
Unit V   : Chapters 9(9.1 – 9.2), 12(12.2 - 12.3)

REFERENCE BOOKS :
1. Asthana R.G.S , Sinha .N.K, **Computer Graphics**, 2002 ,   New   Age
   International Publishers, New Delhi.

2. Foley,   Van Dam,   Feiner Hugher, **Computer Graphics – Principles & Practice**,
2004, Pearson Education, New Delhi.

3. Krishnamurthy N.,   **Introduction   to   Computer   Graphics**, 2002, Tata   McGraw
   Hill Publishing Company Limited, New Delhi.

4.   David Hillman, **Multimedia Technology and Applications** ,2003,Galgotia
Publications Private Ltd, New Delhi.

5. Judith Jeffcoale, **Multimedia in Practice Technology and Applications** , 2003,Prentice Hall
of India Private Ltd, New Delhi.

HOURS/WEEK: 2   **CODE: U15CA5NMP01**
CREDITS :2   **Marks:100**

PHOTOSHOP

1.   Creating a New Document.

2.   Working with Tools in Photoshop.

3.   Working with Layers and History.

4.   Designing a Greeting Card.

5.   Designing an Invitation.

6.   Designing a Wallpaper.

7.   Designing a Logo.

8.   Designing a Business Card.

COREL DRAW

9.   Creating a new document file, opening a document file, saving and closing documents.

10.   Working with tools in Corel draw.

- Creating rectangles, squares, circles and ellipses.

- Drawing polygons, spirals, Graph paper grids and creating Stars.

- Rotating shapes.

- Selecting objects

- Working with fill and outline colors.

- Working with objects, duplicating objects, locking and unlocking objects.

- Aligning objects, finding and replacing objects.

- Combing objects and intersecting

11. Working with Curves and Text in Corel draw

- Working with curves, drawing with freehand tool and drawing closed curves and auto close curved objects.
- Working with nodes and segments.
- Drawing with Bezier tool, drawing with the Artistic Media tool.
- Working with objects sprayer, calligraphic mode.
- Working with Pen tool, Polyline tool, 3 point curve tool and dimension tool.
- Working with Artistic
- Creating paragraph text, line text, Formatting text, Moving and Rotating text.
- Fill color to the text.
- Spacing, word spacing , working with lines.
- Fitting text to path.

12. Working with Colors

- Working with fills.
- Working with uniform fills.
- Working with fountain fill.
- Working with pattern fill.
- Working with texture fill.
- Working with postscript texture.

PAGEMAKER

13. Designing a Page using Page Maker.

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2
B.C.A. : SEMESTER V
(For Candidates admitted from June 2014Onwards)
SBE 4 - QUANTITATIVE APTITUDE

Hours/Week : 2   Code: U15CA5SBT04
Credits   : 2   Mark: 100

OBJECTIVE:
To impart the basic knowledge on English, Mathematics, Verbal and Non-Verbal reasoning.

UNIT – I

Vocabulary : Prefixes and Suffixes - Jumbled Words and Sentences – Jumbled Words –Jumbled Sentence.

Grammar and Usage : The Sentence – Active and Passive voice – Tenses an overview – Reported Speech / Indirect Speech – Errors in use of Articles.

UNIT - II

Arithmetic Ability : Numbers – H.C.F and L.C.M of Numbers – Problems on Numbers – Problems on Ages – Profit and Loss – Simple Interest.

UNIT – III

Verbal Reasoning : Coding – Decoding Test – Series Test – Inserting the Missing Character.

UNIT – IV

Non-Verbal Reasoning : Series – Analogy – Similar Figure Test.

UNIT V

Brain Twisters : Date, Calendar and Clock - Puzzle Test.

TEXT BOOKS
1. J.K. Gangal , "Competitive English for Professional Courses", S.Chand & Company
Ltd.,New Delhi.2010.
UNIT I	:	Vocabulary	:	Units 5,8
		Grammar & usage	:	Units 2,5,6,7

2. Dr. R.S. Aggarwal, "Quantitative Aptitude", S.Chand & Company Ltd.,New
Delhi.2011. UNIT II : Chapters 1,2,7,8,11,21

3. Dr.Lal, Mishra & Kumar, "Multi- dimensional Reasoning (Verbal & Non-Verbal)", Upkar
Prakashan Private Company Ltd., New Delhi.
UNIT III	:	Verbal Reasoning	:	Chapters 2,10,20
UNIT IV	:	Non-Verbal Reasoning :	Chapters 1,2,15
UNIT V	:	Verbal Reasoning	:	Chapters 7,22

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI-2
B.A. /B.Sc. / B.Com. / B.R.Sc./ B.C.A. DEGREE COURSE
LIFE ORIENTED EDUCATION
ETHICS – III: FAMILY AND CAREER DEVELOPMENT

HRS / Wk :1   **CODE: U13VE6LVE03**
                                                    CREDIT :1
                                                    MARKS : 100

OBJECTIVES:
- To help the students learn skills, knowledge, talent to lead a meaningful life.
- To help the students understand marriage life.
- To make the students learn skills of nurturing family and children.
- To make them aware of emotional intelligence and choose their carrier.

UNIT – I: PERSONAL COMPETENCE

Emotional Intelligence for Professional growth, Management Vs Leadership-Management and Leadership Skills - Conflict Management - Tips for Professional growth

UNIT – II: MARRIAGE AND FAMILY

Family Vision - Family Values, Family relationship, Family Management, Sex in Marriage, Emotional Balance and Imbalance, Compatibility between Husband and Wife

UNIT – III: MOTHERHOOD

Bringing up Children - Development stages(Eric Ericson model), Spirituality: Spirituality in Family - Prayer, God's Will , Role of Mother

UNIT – IV: PERSONALITY DEVELOPMENT

Self Analysis; interpersonal relation, introspection – character formation towards positive personality (values, self and college motto, punctuality, good moral, poverty, honesty, politeness, humanity, gentleness, friendship, fellowship and patriotism

UNIT – V: CAREER CHOICE

Career Choice according to Personality, Preparation for Competitive Exams, Sources of Knowledge, Memory Techniques, Mind Mapping

REFERENCES:
1. Tony B and Barry Buzan(2003), The mind map book, BBC world wide limited, London.
2. Susan Nash(2005), Turning team performance inside out, Jai CO. publishing House, New Delhi.
3. Fr. Ignacimuthu (1999) "Values for Life", VaigaraiPathipagam.
4. Grose. D.N. (2000), "A text book on Value Education", Dominant Publishers.

HOLY CROSS COLLEGE (AUTONOMOUS), TRICHIRAPALLI-2.
B.A/B.SC/B.COM/B.R.SC/B.C.A – DEGREE COURSES
LIFE ORIENTED EDUCATION
BIBLE STUDIES – III: ESSENCE OF CHRISTIAN FAITH

HRS / Wk : 1
CODE: U12VE6LVB03
CREDIT :1
MARKS : 100

Objective:

- Prepare to practice Christian principles in family, church and society as a young women.

UNIT – I: ESSENTIALS OF CHRISTIAN FAITH

- Salvation   – Deliverance from sin (Is 53),Assurance of salvation and New life (II Cor 5:17)
- Sacraments – Baptism (Luke 3: 6-14), Lord's Supper (I Cor 10: 16,17; 11: 23-29)
- Trinity   – One in three and three in one. Illustrations from the Bible. (John 14: 16,17)
- Heaven and Eternal life (John 14: 13, 3: 13-21)

UNIT – II: MAARIAGE AND FAMILY LIFE

- Finding the God's Will - Issac (Gen 24)
- Man and woman as Partners – Abraham and Sarah (Gen 16-18,22)

  Aquila and Priscilla (Acts 18: 1-3,26)
- Evils to be avoided – Premarital Sex, Extramarital Sex,

  Homosexuality, Abortion(Heb 13: 4, Psalm 127 : 4)
- Ideal Wife – Sarah (I Peter 3: 1-6), Ruth, Eph 5

UNIT – III: CHRISTIAN HOME

- Parental Responsibilities and bringing up children – Abraham (Gen 22),

  Eli (I Sam 2: 24-36,3: 11- 18), Mary Mother of Jesus (Luke 2: 51,52
- Caring for the Aged (I Sam 2: 31,32)
- Entertainments (I Cor 10: 23)

UNIT – IV: CHRISTIAN ETHICS

- Holiness – Joseph (Gen 39:9)Levi 11: 45, Ecc 12
- Obedience to God - Abraham (Gen 12) ; St. Paul (Acts 9)
- Freedom and Accountability
- Justice and Love
- Choices in Life – Making Decisions(Studies, job, life Partner)

- Model to follow – Who is your model? (John 15: 1-17)
- Social Evils – Dowry, Caste discrimination, Accumulation of wealth
- Freedom of Options, Time Management, Work Ethics (I Peter 2: 11-25)

UNIT – V: ROLE IN CHURCH AND SOCIETY

- Man is the temple of God (I Cor 3: 11-17, 6: 19-20) Individual responsibility in Gospel work
- Church –Body of Christ (I Cor 12: 14-27)
- Unity (John 17: 20-23, Mat 10: 37-39, 16:24-26, Mark 13: 11-13)
- Discipleship (I & II Timothy, Titus)
- Social Responsibilities (Phil 2; 1-11, James 1: 27, 2: 14-17, 4: 17, 5: 14-15)

REFERENCES:

1. Alban Douglass (1982) One Hundred Bible Lessons. Gospel Literature Service, Mumbai.
2. Derek Prince (1993) Foundations for Righteous Living. Derek Prince Ministries-South Pacific, New Zealand.
3. Derek Prince and Ruth Prince (1986) God is a Match maker. Derek Ministries, India.
4. Ron Rhodes(2005) Hand book on Cults. Amazon.com
5. Stanley.R. (1997) With God Again. Blessing Youth Mission, India.
6. Taylor.H. (1993) Tend My Sheep. SPCK, London.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2
B.A./B.Sc/B.Com/B,R.SC/B.C.A DEGREE COURSES
LIFE ORIENTED EDUCATION
CATECHISM – III: LITURGY AND CHRISTIAN LIFE

HRS / WK :1
CODE:U12VE6LVC03
CREDIT :1
MARKS : 100

OBJECTIVES:
- To prepare the students to participate meaningfully in the liturgical celebration and experience GOD in their day today life.
- To become a living witness to Jesus Christ in their personal, family and social life.

UNIT – I: LITURGY
Personal prayer (Know oneself) – Vocal prayer – Community prayer – Meditation – Contemplation – Knowing the prayers : Our Father – Hail Mary – Holy Rosary – Mysteries of the Rosary- Litany of Mary – family prayer-Popular devotion

UNIT – II: HOLY SACRIFICE OF THE MASS
Significance – meaning and need for spiritual growth – mass prayers – part of the mass – liturgical year, its division and its significance. –Creed – Act of contrition – Discernment of spirits – Counseling – Spiritual direction.

UNIT – III: CHRISTIAN VOCATION AS DISCIPLE FOR THE KINGDOM OF GOD
Who am I as a Christian? – Christian dignity and others – The values of the Kingdom opposing to the values of the World – Christian social conscience – Christian in the reformation of the world – a call to be salt and light in today's context.

UNIT – IV: CHRISTIAN FAMILY
Holy family- characteristic of good family – Bible centered, Prayer centered, Christian centered–Responsibilities of parents, and children in the family – church – laws towards marriage-Pro life (Abortion, Euthanasia) – Lay Vocation – Lay Participation – Lay associates.

UNIT – V: CONSECRATED LIFE
"Come and follow me" – special disciples - Religious vocation – "I have called you to be mine"- Role of Nuns and Priest - called to be prophets and agents for God's Kingdom – nucleus of the church – Eschatological signs of the God's Kingdom.

REFERENCES:

2. Compendium – Catechism for the Catholic Church Published by Vaigarai Publishing House for the Catholic Church of India.
3. You are the light of the World, A course on Christian living for II year Religion published by Department of Foundation Courses, St.Joseph's College (Autonomous), Tiruchirappalli– 620 002.

MAJOR CORE 11: SOFTWARE ENGINEERING

Hours/Week:6   **CODE: U15CA6MCT11**
Credits:5   **Marks:100**

OBJECTIVE
To understand the concept of software design, maintenance. To
understand the verification and validation techniques.

UNIT I
INTRODUCTION TO SOFTWARE ENGINEERING: Evolving role of software –
Software – The changing nature of software.
SOFTWARE ENGINEERING: A layered technology – A process framework – CMMI-
Process Pattern – Process Assessment – Personal and Team Process Models.
PROCESS MODELS: Prescriptive models-The waterfall model - Incremental Process
Models - Evolutionary Process Models – Specialized Process Models.

UNIT II

REQUIREMENTS ENGINEERING: Abridge to Design and Construction-
Requirements Engineering task – Initiating the requirement engineering process –
Eliciting requirements .
BUILDING THE ANALYSIS MODEL: Requirement analysis – Analysis Modeling
approaches - Data Modeling concepts - Object Oriented Analysis - Flow Oriented
Modeling - Creating a behavioral model.

UNIT III

DESIGN ENGINEERING: Design within the context of software engineering - Design
process and Design quality - Design Concepts - Design Model - Pattern based software
design.
CREATING AN ARCHITECTURAL DESIGN: Architectural styles and patterns -
Mapping data flow into a software architecture.

UNIT IV
MODELING COMPONENT LEVEL DESIGN : What is a component - Designing
Class Based components – Conducting Component level design.
PERFORMING USER INTERFACE DESIGN: The golden rules – User-Interface
analysis and Design-Interface analysis - Interface Design steps.

UNIT V

TESTING STRATEGIES: Test strategies for Conventional Software – Test Strategies for Object- Oriented Software - Validation testing – System testing - The art of debugging.

TESTING TACTICS: Software testing fundamentals - Black Box and White Box testing-Basis path testing- Control Structure testing - Black Box testing- object oriented testing methods.

QUALITY MANAGEMENT: Quality concepts - Software Quality Assurance - Software Reviews
-Formal Technical Reviews - Software Reliability.

TEXT BOOK

1.   Pressman Roger .S, "**Software Engineering-A Practitioner's Approach**", 2005, Tata McGraw Hill Publishing Company Ltd., New Delhi.

UNIT I
Chapter1 (1.1 to 1.3), Chapter2 (2.1 to 2.6), Chapter3 (3.1 to 3.5)

UNIT II
Chapter7 (7.1 to 7.4), Chapter8 (8.1 to 8.4, 8.6, 8.8)

UNIT III
Chapter9 (9.1 to 9.5), Chapter10 (10.3 and 10.6)

UNIT IV
Chapter11 (11.1 to 11.3), Chapter12 (12.1 to 12.4)

UNIT V
Chapter13 (13.3 to 13.7), Chapter14 (14.1 to 14.7), Chapter26 (26.1 to 26.4, 26.7)

REFERENCE BOOKS

1.   Carlo Ghezzi, Mehdi Jazayeri and Dimo Mandrioli, "**Fundamentals of Software Engineering**", 2001, Prentice-Hall of India Private Ltd., New Delhi.

2.   Ian Sommarvilla, "**Software Engineering**", 2004, Pearson Education Publishing Ltd., New Delhi.

3.   Jawadekar Waman.S, "**Software Engineering Principles and Practice**", 2004, Tata McGraw Hill Publishing Company Ltd., New Delhi.

4.   Richard Fairley, "**Software Engineering Concepts**", 2000, Tata McGraw Hill International Publishing Company Ltd., New Delhi.

5.   Shari Lawrence Pfleeger, "**Software Engineering Theory and Practice**", 2001, Pearson Education Publishing Ltd., New Delhi.

MAJOR CORE 12: OPERATING SYSTEMS

Hours/Week: 6   CODE: U15CA6MCT12
Credits:5   **Marks:100**

OBJECTIVE
To give deeper understanding of operating system as a resource manager.

UNIT I

INTRODUCTION: What is an Operating System? – Mainframe Systems – Desktop Systems – Multiprocessor Systems – Distributed Systems – Clustered Systems - Real-Time Systems – Handheld Systems – Feature Migration – Computing Environments.
COMPUTER-SYSTEM STRUCTURES: Computer-System Operation – I/O Structure – Storage Structure – Storage Hierarchy – Hardware Protection –Network Structure.
OPERATING-SYSTEM STRUCTURES: System Components – Operating-System Services – System Calls – System Programs – System Structure – Virtual Machines.

UNIT II

PROCESSES: Process Concept – Process Scheduling – Operation on Processes – Cooperating Processes – Interprocess Communication. **THREADS:** Overview – Multithreading Models - Threading Issues. **CPU SCHEDULING:** Basic Concepts – Scheduling Criteria – Scheduling Algorithms – Multiple–Processor Scheduling – Real-Time Scheduling – Algorithm Evaluation.

UNIT III

PROCESS SYNCHRONIZATION: Background - The Critical-Section Problem –Synchronization Hardware – Semaphores – Classic Problems of Synchronization.
DEADLOCKS: System Model – Deadlock Characterization – Methods for Handling Deadlocks – Deadlock Prevention – Deadlock Avoidance – Deadlock Detection – Recovery from Deadlock.

UNIT IV

MEMORY MANAGEMENT: Background – Swapping – Contiguous Memory Allocation
– Paging - Segmentation – Segmentation with Paging.
VIRTUAL MEMORY: Background - Demand Paging – Process Creation - Page Replacement – Allocation of Frames – Thrashing – Other Considerations.

UNIT V

FILE-SYSTEM INTERFACE: File Concept – Access Methods – Directory Structure –
File System Mounting – File Sharing – Protection.
FILE-SYSTEM IMPLEMENTATION: File-System Structure – File System Implementation - Directory Implementation – Allocation Methods – Free-Space Management –Efficiency and Performance – Recovery.

TEXT BOOK

1. Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, **Operating System Concepts,** 2006, Sixth Edition, John Wiley & Sons Publications Inc., Singapore.

UNIT I	:	Chapters 1, 2, 3(3.1 – 3.6)
UNIT II	:	Chapters 4(4.1 – 4.5), 5(5.1 - 5.3), 6(6.1 - 6.6)
UNIT III	:	Chapters 7(7.1 – 7.5), 8(8.1 – 8.7)
UNIT IV	:	Chapters 9(9.1 – 9.6), 10(10.1 – 10.6,10.8)
UNIT V	:	Chapters 11(11.1 – 11.6), 12(12.1 – 12.7)

REFERENCE BOOKS

1. Deitel Harvay M., **Operating Systems**, 2003, Pearson Education Publications, Singapore.

2. Godbole Achyut S., **Operating Systems**, 2002, Tata McGraw Hill Publishing Company Limited, New Delhi.

3. Milan Milankovic, **Operating System-Concepts and Design**, 2005, Tata McGraw Hill Publishing Company Limited, New Delhi.

4. Tanenbaum Andrew S. & Woodhull Albert S., **Operating Systems – Design and Implementation**, 2002, Pearson Education Publications, Singapore.

5. William Stallings, **Operating Systems – Internals and Design Principles**, 2006, Pearson Education Publications, Singapore.

MAJOR CORE 13 - WEB APPLICATION DEVELOPMENT

Hours/Week : 6   **CODE: U15CA6MCT13 / U15CS6MCT12**
Credits:5   **Marks:100**

OBJECTIVE
To give an overall view on basic and advanced concepts of HTML and elements of HTML forms. To give an overview of programming constructs and elements of Java Script.
To describe various elements of DHTML, XML, and its advanced features and provide an exposure to the various aspects of ASP.

UNIT I
Introduction: History of the Internet – Internet services and accessibility – uses of Internet – Protocols – Web Concepts.
HTML: Introduction – SGML - Outline of an HTML Document - Head Section - Body Section - HTML Forms.

UNIT II
JAVA SCRIPT: Introduction - Language Elements - Objects of Java Script - Other Objects
VBSCRIPT: Introduction - Embedding VBScript Code in an HTML Document - Comments-Variable - Operators - Procedures-Conditional Statements - Looping Constructs - Objects and VBScript - Cookies.

UNIT III
DYNAMIC HTML (DHTML): Introduction - Cascading Style Sheets (CCS) - DHTML Document Object Model and Collections - Event Handling - Filters and Transitions-Data Binding.

UNIT IV
EXTENSIBLE MARK-UP LANGUAGE(XML): Introduction - HTML vs. XML - Syntax of the XML Document - XML Attributes - XML Validation - XML DTD - The Building Blocks of XML Documents - DTD Elements - DTD Attributes - DTD Entities - DTD Validation – XSL - XSL Transformation - XML Namespaces - XML Schema.

UNIT V
JAVA SERVER PAGES (JSP): Introduction - Advantages of JSP - Developing First JSP - Components of JSP - Reading Request Information-Retrieving the Data Posted from a HTML File to a JSP File - JSP Sessions – Cookies - Disabling Sessions.
ACTIVE SERVER PAGES(ASP): Introduction - Advantages of Using ASP - First ASP Script- Processing of ASP Scripts with Forms - Variables and Constructs - Subroutines - Include/Virtual - ASP Cookies -ASP Objects - Connecting to Data with ASP.

TEXT BOOK

1. Gopalan N.P. and Akilandeswari J, "WEB TECHNOLOGY" A Developer"s Perspective 2007 by PHI Learning Private Limited, New Delhi.

UNITS I : Chapter 1 (1.1 to 1.6), 4

UNIT II : Chapter 5, 6

UNIT III : Chapter 7

 UNIT IV : Chapter 8

UNIT V   : Chapter 11, l2

REFERENCE BOOKS

1. Manju Bargavi S.K, "Web Technology", 2008, Sams Publishers,Chennai.
2. Niit building, "Web Applications" , 2005, Prentice Hall of India Private Limited ,NewDelhi
3. Pandey, Tiwari, Pathak, "A Journey with Technology", Acme Learning Private Limited, New Delhi.
4. Smith Eric A., "Active Server Pages Bible", 2000, Willey Publishing Inc., Indian Polix, Indiana.
5. Thomasson Michael. D, "ASP3 Fast & Easy Web Development", 2001, Prentice Hall of India Publications, New Delhi.

MAJOR ELECTIVE 3 - WEB APPLICATION DEVELOPMENT LAB

Hours/Week : 5   **Code: U15CA6MEP03 / U15CS6MEP03**
Credits:5   **Marks:100**

HTML5:

1. Develop a web page for a Restaurant"s Menu Card using tables.
2. Design a web page for your College displaying various courses using Lists and Frames.
3. Design an Online Application form for your College.

CSS 3:

1. To illustrate CSS Border Style Properties
2. To illustrate CSS Border Image Properties.
3. To illustrate CSS Selector Properties.

JAVA SCRIPT:

1. Write a script to generate random numbers within 1 to 10 and display the numbers in a table.
2. Write a script to create an arithmetic calculator using function.
3. Write a script to check the given string is palindrome or not.

VB SCRIPT:

1. Write a program to display the week days.
2. Write a program to generate Date and Time in different format.
3. Write a program to Validate Age and Numeric Value.

ASP:

1. Write an ASP program to get the name and favorite ice cream flavor. Respond with the price of the corresponding ice cream.
2. Create a Login form, to expire, if the user does not type the password within 100 seconds.
3. Create an application for Students" Information using database.

MAJOR ELECTIVE 3 – SOFTWARE DEVELOPMENT LAB

Hours/Week : 5	**Code: U15CA6MEP04**
Credits:5	**Marks:100**

Web Page Development

Objective To provide basic coding knowledge for web designing
To design a Website using HTML, CSS and Java Script on any one of the following topics in
         Hotel Booking System
ii   E-Commerce Website
iii   Virtual Keyboard Design
iv)   College Website
v)   Tourism Website

1. Application with Database

Objective To provide basic knowledge of the real time applications of the IT industry
To develop mini real time applications using Java with MySQL on any one of the following topics
i   Attendance Management System
ii   Campus Recruitment System
iii   Student Feedback System
iv   Course Registration System
v   Web portal for Health Care

Hours/Week : 2   **CODE: U15CA6NMP02 / U15CS5NMP01**
Credits:2   **Marks:100**

1. Using various selection tools.

2. Using image adjustment tools to enhance an image.

3. Create scenery using Photoshop brushes.

4. Demonstrate the use of layer effects.

5. Create a text with picture inside.

6. Demonstrate the use of ripple effect and lens flare.

7. Create a snapshot inside a photo.

8. Photo retouching.

9. Coloring a BW photo.

10. Create slide mount template.

11. Create Photo mount template.

12. Create photo frame effect.

13. Create photo film effect.

14. Create a 3D Photo effect.

15. Create 2D and 3D logos.

16. Animate text using Image Ready.

17. Create three frames with Lens flare effect and different background colors and animate using Image Ready.

18. Create a Christmas Tree with Blinking Lights.

19. Animate a candle flame using Liquify filter.

20. Design an attractive Greeting Card, Invitation, Wallpaper.

Hours/Week : 2   **CODE: U15CA6SBP05 / U15CS6SBP05**
Credits: 2   **Marks: 100**

MS Word

1 Creating Documents

2 Working with Documents
a. Opening Files – New & Existing
b. Saving Files
c. Formatting page and Setting Margins
d. Converting files to different formats
i. Importing
ii. Exporting
iii. Sending files to others
e. Editing text documents
i. Inserting
ii. Deleting
iii. Cut, Copy, paste
iv. Undo, Redo
v. Find, Search,Replace
f. Using Tool bars,Ruler
i. Using Icons
g. Using help

3 Formatting Documents
a. Setting Font Styles
i. Font selection – style, size, color etc.
ii. Type face – Bold Italic, underline
iii. Case settings
iv. Highlighting
v. Special symbols
b. Setting Paragraph style
i. Alignments
ii. Indents
iii. Line space
iv. Margins
v. Bullets and Numbering
c. Setting Page Style
i. Formatting
ii. Border & Shading
iii. Columns
iv. Header & footer
v. Setting Footnotes
vi. Inserting manual Page break, Column break and line break.
vii. Creating sections and frames
viii. Inserting Clip arts, pictures, and other files

ix. Anchoring & Wrapping

d. Setting Document Styles
i. Table of Contents
ii. Index
iii. Page Numbering, data &Time, Author etc.
iv. Creating Master Documents
v. Web page

4 Creating Tables
a. Table settings
b. Borders
c. Alignments
d. Insertion, deletion
e. Merging
f. Splitting
g. Sorting
h. Formula

5 Drawing
a. Inserting Pictures/Files etc.
b. Drawing Pictures
c. Formatting &Editing pictures
d. Grouping and ordering
e. Rotating

6 Tools
a. Word Completion
b. Spell Checks
c. Macros
d. Mail merge
e. Templates
f. Using Wizards
g. Tracking Changes
h. Security

7   Printing Documents
   a.   Printing Documents

MS Excel
1 Creating worksheet

2 Working with Spreadsheets
a. Opening a File
b. Saving Files
c. Setting Margins
d. Converting files to different formats
i. Importing, Exporting and Sending files to others

e. Spreadsheet addressing
i. Rows, Columns & Cells,
ii. Referring cells and Selecting cells
f. Entering and Editing Data
i. Entering Data
ii. Cut, Copy, paste, Undo, Redo, Find, Search & Replace
iii. Filling continuous rows, columns
iv. Inserting - Data, cells, column, rows & sheets
v. Manual breaks
g. Computing data
i. Setting Formula
ii. Finding total in a column or row
iii. Mathematical operations (Addition, Subtraction, Multiplication, Division, Exponentiation)
iv. Using other Formulas

3 Formatting Spreadsheets
a. Formatting – Cell, row, column & Sheet
i. Alignment, Font, Border &shading
ii. Highlighting values
iii. Hiding/Locking Cells
b. Worksheet
i. SheetName
ii. Row & Column Headers
iii. Row Height, Column Width
iv. Visibility – Row, Column, Sheet
v. Security
c. Formatting – worksheet
i. Sheet Formatting & style - background, color , Borders & shading
d. Anchoring objects
e. Formatting layout for Graphics, Clipart etc.

4 Working with sheets
a. Sorting
b. Filtering
c. Validation
d. Consolidation
e. Subtotal

5 Creating Charts
a. Selecting charts
b. Formatting charts, label, scaling etc.

6 Using Tools
a. Error Checking
b. Spell Checks
c. Macros
d. Formula Auditing
e. Creating & using Templates
f. Tracking Changes
g. Customization

MS Power Point

1 Creating a presentation
a. Setting presentation style
b. Adding Text to the presentation

2 Formatting a presentation
a. Adding style
b. Color, gradient fills
c. Arranging objects
d. Adding Header & Footer
e. Slide Background
f. Slide layout

3 Adding Graphics to the presentation
a. Inserting pictures, movies, tables, etc into the presentation
b. Drawing Pictures using Draw

4 Adding effects to the presentation
a. Setting Animation & transition effect
b. Adding audio and video

5 Printing Handouts

6 Generating standalone

presentationviewer MS Access

1 Introduction
a. Database concepts
b. Tables
c. Queries
d. Forms
e. Reports

2 Opening & Saving database files
a. Creating Tables
b. Table Design
c. Indexing
d. Entering data
e. Importing data

3 Creating Queries
a. SQL statements
b. Setting relationship
c. Using wizards

4 Creating Forms
a. GUI
b. Form

5 Creating & printing reports

SKILL BASED ELECTIVE 6: RESEARCH METHODOLOGY

Hours/Week : 2	**CODE: U15DS6SBT06**
Credits: 2	**Marks: 100**

Course objectives:

To help the students develop research skills

To expose the students to the concept of research and to implement a research project.

UNIT 1: Introduction to Research

Definition, type, nature and scope of research – Research design

UNIT 2: Data Collection

Types-Primary and secondary data-Data processing-Hypothesis testing

UNIT 3: Plan and Execution

Methodology –Plan and execution-Analysis –Documentation

UNIT 4: Format and Presentation of Project Report

Art of writing and Structure of a Project Report-Viva-Voce

UNIT 5: Project

Project work

Books for reference:

1. Kothari C.R., Research Methodology. New Delhi: New Age International (P)Ltd Publishers,   2009.Reprint

2. Rahim F.A Thesis Writing: A manual for researchers. New Delhi: NewAge International Publishers, 1998. Print.

3. Gopalana. Thesis Writing. Chennai: Vijay Nicole, 2005.Print.Oliver, Paul, Writing Your Thesis. New Delhi: Sage Publication, 2008. Print.

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI-2
B.A. /B.Sc. / B.Com. / B.R.Sc./ B.C.A. DEGREE COURSE
LIFE ORIENTED EDUCATION
ETHICS – III: FAMILY AND CAREER DEVELOPMENT

HRS / Wk :1   **CODE: U13VE6LVE03**
                                                         CREDIT :1
                                                         MARKS : 100

OBJECTIVES:
- To help the students learn skills, knowledge, talent to lead a meaningful life.
- To help the students understand marriage life.
- To make the students learn skills of nurturing family and children.
- To make them aware of emotional intelligence and choose their carrier.

UNIT – I: PERSONAL COMPETENCE

Emotional Intelligence for Professional growth, Management Vs Leadership-Management and Leadership Skills - Conflict Management - Tips for Professional growth

UNIT – II: MARRIAGE AND FAMILY

Family Vision - Family Values, Family relationship, Family Management, Sex in Marriage, Emotional Balance and Imbalance, Compatibility between Husband and Wife

UNIT – III: MOTHERHOOD

Bringing up Children - Development stages(Eric Ericson model), Spirituality: Spirituality in Family - Prayer, God's Will , Role of Mother

UNIT – IV: PERSONALITY DEVELOPMENT

Self Analysis; interpersonal relation, introspection – character formation towards positive personality (values, self and college motto, punctuality, good moral, poverty, honesty, politeness, humanity, gentleness, friendship, fellowship and patriotism

UNIT – V: CAREER CHOICE

Career Choice according to Personality, Preparation for Competitive Exams, Sources of Knowledge, Memory Techniques, Mind Mapping

REFERENCES:
5. Tony B and Barry Buzan(2003), The mind map book, BBC world wide limited, London.
6. Susan Nash(2005), Turning team performance inside out, Jai CO. publishing House, New Delhi.
7. Fr. Ignacimuthu (1999) "Values for Life", VaigaraiPathipagam.
8. Grose. D.N. (2000), "A text book on Value Education", Dominant Publishers.

HOLY CROSS COLLEGE (AUTONOMOUS), TRICHIRAPALLI-2.
B.A/B.SC/B.COM/B.R.SC/B.C.A – DEGREE COURSES
LIFE ORIENTED EDUCATION
BIBLE STUDIES – III: ESSENCE OF CHRISTIAN FAITH

HRS / Wk : 1 **CODE: U12VE6LVB03**
CREDIT :1
MARKS : 100

Objective:

- Prepare to practice Christian principles in family, church and society as a young women.

UNIT – I: ESSENTIALS OF CHRISTIAN FAITH

- Salvation – Deliverance from sin (Is 53),Assurance of salvation and New life (II Cor 5:17)
- Sacraments – Baptism (Luke 3: 6-14), Lord's Supper (I Cor 10: 16,17; 11: 23-29)
- Trinity – One in three and three in one. Illustrations from the Bible. (John 14: 16,17)
- Heaven and Eternal life (John 14: 13, 3: 13-21)

UNIT – II: MAARIAGE AND FAMILY LIFE

- Finding the God's Will - Issac (Gen 24)
- Man and woman as Partners – Abraham and Sarah (Gen 16-18,22)

   Aquila and Priscilla (Acts 18: 1-3,26)
- Evils to be avoided – Premarital Sex, Extramarital Sex,

   Homosexuality, Abortion(Heb 13: 4, Psalm 127 : 4)
- Ideal Wife – Sarah (I Peter 3: 1-6), Ruth, Eph 5

UNIT – III: CHRISTIAN HOME

- Parental Responsibilities and bringing up children – Abraham (Gen 22),

   Eli (I Sam 2: 24-36,3: 11- 18), Mary Mother of Jesus (Luke 2: 51,52
- Caring for the Aged (I Sam 2: 31,32)
- Entertainments (I Cor 10: 23)

UNIT – IV: CHRISTIAN ETHICS

- Holiness – Joseph (Gen 39:9)Levi 11: 45, Ecc 12
- Obedience to God - Abraham (Gen 12) ; St. Paul (Acts 9)
- Freedom and Accountability
- Justice and Love
- Choices in Life – Making Decisions(Studies, job, life Partner)

- Model to follow – Who is your model? (John 15: 1-17)
- Social Evils – Dowry, Caste discrimination, Accumulation of wealth
- Freedom of Options, Time Management, Work Ethics (I Peter 2: 11-25)

UNIT – V: ROLE IN CHURCH AND SOCIETY

- Man is the temple of God (I Cor 3: 11-17, 6: 19-20) Individual responsibility in Gospel work
- Church –Body of Christ (I Cor 12: 14-27)
- Unity (John 17: 20-23, Mat 10: 37-39, 16:24-26, Mark 13: 11-13)
- Discipleship (I & II Timothy, Titus)
- Social Responsibilities (Phil 2; 1-11, James 1: 27, 2: 14-17, 4: 17, 5: 14-15)

REFERENCES:

7. Alban Douglass (1982) One Hundred Bible Lessons. Gospel Literature Service, Mumbai.
8. Derek Prince (1993) Foundations for Righteous Living. Derek Prince Ministries-South Pacific, New Zealand.
9. Derek Prince and Ruth Prince (1986) God is a Match maker. Derek Ministries, India.
10. Ron Rhodes(2005) Hand book on Cults. Amazon.com
11. Stanley.R. (1997) With God Again. Blessing Youth Mission, India.
12. Taylor.H. (1993) Tend My Sheep. SPCK, London.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2
B.A./B.Sc/B.Com/B,R.SC/B.C.A DEGREE COURSES
LIFE ORIENTED EDUCATION
CATECHISM – III: LITURGY AND CHRISTIAN LIFE

HRS / WK :1   **CODE:U12VE6LVC03**
                                                                            CREDIT :1
                                                                            MARKS : 100

OBJECTIVES:
- To prepare the students to participate meaningfully in the liturgical celebration and experience GOD in their day today life.
- To become a living witness to Jesus Christ in their personal, family and social life.

UNIT – I: LITURGY

Personal prayer (Know oneself) – Vocal prayer – Community prayer – Meditation – Contemplation – Knowing the prayers : Our Father – Hail Mary – Holy Rosary – Mysteries of the Rosary- Litany of Mary – family prayer-Popular devotion

UNIT – II: HOLY SACRIFICE OF THE MASS

Significance – meaning and need for spiritual growth – mass prayers – part of the mass – liturgical year, its division and its significance. –Creed – Act of contrition – Discernment of spirits – Counseling – Spiritual direction.

UNIT – III: CHRISTIAN VOCATION AS DISCIPLE FOR THE KINGDOM OF GOD

Who am I as a Christian? – Christian dignity and others – The values of the Kingdom opposing to the values of the World – Christian social conscience – Christian in the reformation of the world – a call to be salt and light in today's context.

UNIT – IV: CHRISTIAN FAMILY

Holy family- characteristic of good family – Bible centered, Prayer centered, Christian centered–Responsibilities of parents, and children in the family – church – laws towards marriage-Pro life (Abortion, Euthanasia) – Lay Vocation – Lay Participation – Lay associates.

UNIT – V: CONSECRATED LIFE

"Come and follow me" – special disciples - Religious vocation – "I have called you to be mine"- Role of Nuns and Priest - called to be prophets and agents for God's Kingdom – nucleus of the church – Eschatological signs of the God's Kingdom.

REFERENCES:

4. Compendium – Catechism for the Catholic Church Published by Vaigarai Publishing House for the Catholic Church of India.
5. You are the light of the World, A course on Christian living for II year Religion published by Department of Foundation Courses, St.Joseph's College (Autonomous), Tiruchirappalli– 620 002.