

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI-620 002. DEPARTMENT OF  
COMPUTER SCIENCE CHOICE BASED CREDIT SYSTEM**

**BACHELOR OF COMPUTER SCIENCE**  
(For Candidates admitted from June 2014 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	U12TL1TAM01 U14HN1HIN01 U13FR1FRE01	6	3	100
	II	English	English Paper I	U10EL1GEN01	6	3	100
	III	Major Core-1	Advanced Programming in C (Theory cum Lab)	U14CS1MCT01	7	5	100
	III	Allied-1 (Compulsory)	Digital Fundamentals and Architecture	U14CS1ACT01	4	4	100
	III	Allied-2 (Compulsory)	Applied Mathematics I	U08MA1ACT05	4	3	100
	IV	Environmental Studies	Environmental Studies	U14RE1EST01	2	2	100
	IV	Value Education	Ethics I/ Bible Studies I/ Catechism I	U12VE2LVE01 U12VE2LVB01 U12VE2LVC01	1	-	-
			<b>TOTAL</b>		<b>30</b>	<b>20</b>	<b>600</b>
II	I	Language	Tamil Paper II / Hindi Paper II / French Paper II	U12TL2TAM02 U14HN2HIN02 U13FR2FRE02	5	3	100
	II	English	English Paper II	U10EL2GEN02	6	3	100
	III	Major Core-2	Data Structures and Algorithms	U14CS2MCT02	5	5	100
	III	Major Core-3	Data Structures – Lab	U14CS2MCP03	5	4	100
	III	Allied-3 (Compulsory)	Applied Mathematics II	U08MA2ACT11	4	3	100
	IV	Skill-based Elective-1	Soft Skill Development	U14RE2SBT01	2	2	100
	IV	Skill-based Elective-2	Rural Enrichment and Sustainable Development	U08RE2SBT02	2	2	100
	IV	Value Education	Ethics I/ Bible Studies I/ Catechism I	U12VE2LVE01 U12VE2LVB01 U12VE2LVC01	1	1	100
			<b>TOTAL</b>		<b>30</b>	<b>23</b>	<b>800</b>
III	I	Language	Tamil Paper III / Hindi Paper III / French Paper III	U12TL3TAM03 U14HN3HIN03 U14FR3FRE03	6	3	100
	II	English	English Paper III	U10EL3GEN03	6	3	100
	III	Major Core-4	Database Systems	U11CS3MCT04	5	5	100
	III	Major Core-5	RDBMS – Lab	U08CS3MCP05	5	5	100
	IV	Allied-4 (Optional)	Allied Optional Paper I Applied Mathematics III	U11MA3AOT13	4	3	100
	IV	Skill-based Elective-3	Multimedia and Animation Lab	U13CS3SBP03	2	2	100
	IV	Gender Studies	Gender Studies	U12WS3GST01	1	1	100
	IV	Value Education	Ethics II /Bible Studies II/ Catechism II	U12VE4LVE02 U12VE4LVB02 U12VE4LVC02	1	-	-
			<b>TOTAL</b>		<b>30</b>	<b>22</b>	<b>700</b>
IV	I	Language	Tamil Paper IV / Hindi Paper IV / French Paper IV	U12TL4TAM04 U14HN4HIN04 U14FR4FRE04	5	3	100
	II	English	English Paper IV	U13EL4GEN04	6	3	100
	III	Major Core-6	Principles of micro computer systems	U15CS4MCT06	5	5	100
	III	Major Elective-1	Visual Programming - Lab / Open Source Technology - Lab / Dot Net Lab	U14CS4MEP01/ U14CS4MEP02/ U14CS4MEP03	5	5	100

	III	Allied-5 (Optional)	Practical-Electronics	U13PH4AOP05	4	4	100
	III	Allied-6 (Optional)	Basics of Electronics	U13PH4AOT04	4	3	100
	IV	Value Education	Ethics II/ Bible Studies II/ Catechism II	U12VE4LVE02 U12VE4LVB02 U12VE4LVC02	1	1	100
			<b>TOTAL</b>		<b>30</b>	<b>24</b>	<b>700</b>
V	III	Major Core-7	Java Programming	U15CS5 MCT07	5	4	100
	III	Major Core-8	Software Engineering	U11CS5 MCT08	5	4	100
	III	Major Core-9	Operating System	U12CS5 MCT09	5	4	100
	III	Major Core-10	Java Programming Lab	U08CS5 MCP10	5	4	100
			Unix Shell Programming Lab /	U14CS5MEP04/			
	III	Major Elective-2	System Analysis and Design /	U14CS5MET05/	5	5	100
			Management Information System	U14CS5MET06			
	IV	Non Major Elective-1	Multimedia Lab – Photoshop	U13CS5NMP01	2	2	100
	IV	Skill Based Elective-4	Competitive Examination Skills	U14CS5SBT04	2	2	100
IV	Value Education	Ethics III/ Bible Studies III / Catechism III	U13VE6LVE03 U12VE6LVB03 U12VE6LVC03	1	-	-	
			<b>TOTAL</b>	<b>30</b>	<b>25</b>	<b>700</b>	
VI	III	Major Core-11	Computer Networks	U12CS6MCT11	6	5	100
	III	Major Core-12	Web Application Development Tools Lab	U14CS6 MCP12	6	5	100
	III	Major Core-13	Web Application Development	U15CS6MCT13	6	5	100
			Computer Graphics /	U14CS6MET07/			
	III	Major Elective-3	Artificial Intelligence and Expert	U14CS6MET08/	5	5	100
			System / Software Testing	U14CS6MET09			
	IV	Non Major Elective-2	Animation Lab – Flash	U13CS6NMP02	2	2	100
	IV	Skill Based Elective-5	Office Tools Lab	U13CS6SBP05	2	2	100
	IV	Skill Based Elective-6	Research Methodology	U13DS6SBT06	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	U08RE6ETF01	-	1	100
			<b>TOTAL</b>	<b>30</b>	<b>28</b>	<b>900</b>	
			<b>GRAND TOTAL</b>	<b>180</b>	<b>141</b>	<b>4400</b>	

**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)	Allied Optional Paper I Office Management Software	U08CS3AOT02	4	3	100
			Multimedia and its Applications	U12CS3AOT03			
IV	III	Allied-5 (Optional)	Web Page Development	U08CS4AOT04	4	3	100
			Windows and Internet Concepts	U08CS4AOT05			
		Allied-6 (Optional)	Desktop Publishing Lab	U11CS4AOP05	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	Multimedia Lab – Photoshop	U13CS5NMP01	2	2	100
VI	IV	Non Major Elective-2	Animation Lab – Flash	U13CS6NMP02	2	2	100

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

**TAMIL DEPARTMENT**

**BA/ B.SC/ B.COM DEGREE**

**Part - I : Language: Tamil Paper - 1**

**Total Hours : 90**

**Hrs : 6Hrs /Wk**

**Credit : 3**

**Code : U12TL1TAM01**

**Marks : 100**

**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 துணைப்புகிறதல்.
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.

**பாடத்திட்டம்**

**அலகு:1 செய்யுள்**

மொழி

கல்வி

வீரம்

**அலகு:2 செய்யுள்**

அறம்

வாழ்க்கை

**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

(for the candidates admitted from June 2014 onwards)  
**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: U14HN1HIN01**

**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**

**SYLLABUS**

**SEMESTER I**

**PART I – LANGUAGE - FRENCH PAPER I [GRAMMAR & CIVILISATION**

(ÉCHO A1 2<sup>e</sup> édition)]

(For candidates admitted 2013 onwards)

**HRS/WEEK : 6**

**MARKS : 100**

**CODE : U13FR1FRE01**

**CREDIT : 3**

**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 1<sup>er</sup> groupe, des accords, les articles – l’état civil, des personnes et des objets caractéristiques d’un pays – exprimer ses goûts – 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.

(for candidates admitted from 2014 onwards)  
**HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2.**  
**2014 - 2015**

**I B.A., B.Sc., B.Com., B.R.Sc., B.C.A., B.B.A., SEMESTER I**  
**PART II - ENGLISH 1 - GENERAL ENGLISH PAPER I**

**NO.OF HRS/WK:6**  
**NO.OF CREDITS: 3**

**CODE:U10EL1GEN01**  
**MARKS: 100**

**OBJECTIVES**

To develop in the students LSRW Skills at the foundation basic level  
To focus on Oral Communication Skills through several Spoken English tasks given individually and in groups.  
To encourage students to read and appreciate biographies/passages/fables/folk tales  
To develop sub skills including comprehension, vocabulary, grammar, spelling, punctuation and reference skills.

**UNIT I: Speak Better I**  
Tasks 1 - 30

**UNIT II: Speak Better II**  
Generation of Alternatives  
Viewpoints  
Challenging Assumptions  
Redesigning  
Dominant Ideas and Crucial Factors

**UNIT III : Read and Communicate I : a) Fables and Folk Tales**  
The Crow and the Kavun  
The Parakeet and the Clay Pot

**UNIT IV: Read and Communicate I: b) Fables and Folk Tales**  
How the Ministers Laid Eggs  
How Andare Ate Curd at the Palace

**UNIT V: Read and Communicate II : Biographies**  
MahatmaGandhi  
AbrahamLincoln

**PRESCRIBED TEXT**

OraneeJansz : *EXPLORATIONS A Course in reading, thinking and communication skills:*  
Foundation Books. Print.

**LIST OF GENERAL TOPICS:**

1. Knowledge is power
2. The Impact of English Language
3. Science and Technology
4. Where there is a will there is way
5. Honesty is the best policy
6. Birds of the same feather, flock together
7. East or west home is the best
8. Make hay while the sun shines
9. Your favourite leader
10. Description of a significant experience in your life.



**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc / B.C.A. COMPUTER SCIENCE**  
**SEMESTER I**  
**MAJOR CORE 1 ADVANCED PROGRAMMING IN C**  
(Theory cum Lab)

**CODE: U14CS1MCT01 / U14CA1MCT01**

**HOURS/WEEK: 7**  
**CREDITS 6**

**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 of Strings.

**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**”, 6<sup>th</sup> 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. Simple programs.
2. Control Structure.
3. Arrays.
4. Function.
5. Strings.
6. Structures and Unions.
7. Pointers.
8. Sequential File Access.
9. Random File Access.
10. Command Line Arguments.

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.SC. COMPUTER SCIENCE**  
**SEMESTER I**  
**ALLIED 1: DIGITAL FUNDAMENTALS AND ARCHITECTURE**

**CODE: U14CS1ACT01**

**HOURS/WEEK : 4**  
**CREDITS:3**

**OBJECTIVE**

To impart 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.

**ARITHMETIC CIRCUITS:** Binary Addition Subtraction, Unsigned Binary Numbers- Sign Magnitude numbers – 2's Complements arithmetic.

**UNIT II**

**BASIC LOGIC GATES:** Inverters – OR gates - AND gates - Boolean Algebra- NAND gates-NOR gates - Boolean laws and Theorems .

**K MAP:** Sum of Product method- Truth Table to Karnaugh Map – Pairs, Quads, Octets – Karnaugh map Simplifications —Don't Care conditions- Product of Sums method.

**UNIT III**

**INPUT – OUTPUT ORGANIZATION:** Peripheral Devices - Input Output Interface – I/O Bus and Interface- I/O Bus Versus Memory- Isolated Versus Memory – Mapped I/O - Asynchronous Data Transfer: Strobe Control and Handshaking.

**UNIT IV**

**CENTRAL PROCESSING UNIT:** General Register Organization – Stack Organization – Instruction Formats – Addressing Modes.

**UNIT V**

**MEMORY ORGANIZATION:** Memory Hierarchy – Main Memory – RAM and ROM Chips – Memory Address Map – Memory Connection to CPU – Auxiliary Memory – Magnetic Tape – Cache Memory

## **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 5.1 – 5.8, 4.8, 6.1- 6.4, 6.6

**UNIT II** : Chapters 2.2 - 2.5, 3.1 -3.7

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

**UNIT III** : Chapters 11.1 - 11.3

**UNIT IV** : Chapters 8.1 – 8.5

**UNIT V** : Chapters 12.1 - 12.3, 12.5

## **REFERENCE BOOKS**

1. Carl Hamacher, Zvonko Vranesi, **“Computer Organization”**, 2002,Fifth Edition, McGraw – Hill Publishing Company, New Delhi.

2. Andrew Tanenbaum, **“Structured Computer Organization”** ,2006,Fifth Edition ,Pearson Education.

3. William Stallings,, **“Computer Organization and Architecture”**,2009,Seventh Edition, Pearson Education.

4. M.Morris Mano, Charles R.Kime, **“Logic and Compute Design Fundamentals”**, 2004,Fourth Edition, Pearson Education..

5. Michael J.Flynn, **“Computer Architecture”**, 2006,Seventh Edition, Narosa Publishing House Private Ltd.

**HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 620 002.**

**(For the candidates admitted from 2008 onwards)**

**SEMESTER – I**

**Allied 2 - APPLIED MATHEMATICS I**

**(for computer science students)**

**Total Hours: 60**

**Hours/Week: 4**

**Credits: 3**

**Code: U08MA1ACT05**

**Marks:100**

**GENERAL OBJECTIVE:**

To impart the knowledge on matrices, differential equation of I and II order, Laplace Transforms and Fourier series.

**UNIT I:MATRICES**

**(12 HRS)**

Solution of system of linear equations-- Eigen values and Eigen vectors of a matrix – Cayley Hamilton's Theorem(without proof).

**UNIT II :PARTIAL DIFFERENTIAL EQUATIONS**

**(12 HRS)**

Formation of equations by eliminating arbitrary constants and arbitrary functions; definition of general, Particular, complete and singular integrals – solutions of first order equations in their standard forms –  $F(p,q) = 0$ ,  $F(x,p,q) = 0$ ,  $F(y,p,q) = 0$ ,  $F(z,p,q) = 0$ ,

$F(x,p) = F(y,q)$ ,  $Z = px+qy+f(p,q)$ , Lagrange's equations  $Pp+Qq = R$

**UNIT III : LAPLACE TRANSFORMS**

**(12 HRS)**

Definition - Laplace transforms of functions  $e^{at}$ ,  $\cos at$ ,  $\sin at$ ,  $t^n$  ( $n$  is a +ve integer),

$e^{at}\cos bt$ ,  $e^{at}\sin bt$ ,  $f(t)$ ,  $f'(t)$ ,  $f_n(t)$ ,  $t_n f(t)$ ,  $f(t)/t$

**UNIT IV : INVERSE LAPLACE TRANSFORMS**

**(12 HRS)**

Definition - Inverse transforms relating to the above standard functions

**UNIT V: FOURIER SERIES**

**(12 HRS)**

Fourier Series: Fourier Series: – Even and odd functions – properties of odd and even functions – Half range Fourier series – Development in sine and cosine series (omitting general interval).

## **TEXT BOOKS:**

1. Narayanan S, Hanumantharao.R, ManicavachagomPillay.T.K, Kandaswamy(2000), ANCILLARY MATHEMATICS – VOLUME 1 - PART I – ALGEBRA, S.Viswanathan

Printers and publishers Pvt Ltd, Chennai.

2. Narayanan.S and ManicavachagomPillay T.K(2000), INTEGRAL CALCULUS AND DIFFERENTIAL EQUATIONS.S.Viswanathan Printers and publishers Pvt Ltd, Chennai.

3. Venkataraman M.K, ENGINEERING MATHEMATICS (VOL II), (2006) National publishing company Chennai

Unit : I

1. “Ancillary Mathematics – Volume 1 - Part I – Algebra”,

S. Narayanan, R. Hanumantharao, T.K.

ManicavachagomPillay& Kandaswamy.

Unit II, III & IV:

2. Narayanan and ManickavasagamPillai, “Ancillary Mathematics Volume 1 :

Part II (Section B)-Integral Calculus and Differential equations.

Unit V:

3. Dr. M.K. Venkataraman, “Engineering Mathematics (Vol II)”, Third Edition, 1998.

## **REFERENCE BOOKS:**

1. Ashan and zafar (2006) ,DIFFERENTIAL EQUATION AND THEIR APPLICATIONS ,Prentice Hall of India,Pvt Ltd.

2. Iyengar(2000), DIFFERENTIAL EQUATION Anmal Publications, Newdelhi.

3. ManicavachagomPillayT.K(2006),Algebra , S.Viswanathan Printers and publishers Pvt Ltd, 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**

**CODE: U14RE1EST01**  
**CREDITS : 2**

**Hrs – 2/Week**

**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 and 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

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

**HRS / Wk :1**

**CODE: U12VE2LVE01**

**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**

Concept of God- Faith, Meaning, Definition, Nature, Characteristics. Basic values of different religions-Globalization.

**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: U12VE2LVB01**

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

- 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**

- St. Thomas (John 20:24-31) & Missionary to India\ Pandithar Rama Bai
- William Carrie
- Dr.Ida Scudder & 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-DEGREE COURSES**  
**LIFE ORIENTED EDUCATION**  
**CATECHISM – I: GOD OF LIFE**

**HRS / WK :1**  
**MARKS : 100**

**CODE :U12VE2LVC01**  
**CREDIT : 1**

**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**

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. Vaalvin Valizha – St. John's Gospel – Fr. Eronimus

புனித சிலுவை தன்னாட்சிக் கல்லூரி, திருச்சிராப்பள்ளி - 620 002.

தமிழாய்வுத்துறை

இளங்கலை ∴ இளமறிவியல் ∴ இளம் வணிகவியல் பட்ட வகுப்பு

முதலாமாண்டு - இரண்டாம் பருவம் - 2014

தாள் - II

Total Hours : 75

Hrs : 5Hrs /Wk

Credit : 3

Code : U12TL2TAM02

Marks : 100

**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.

**அலகு:1** செய்யுள்

இறைமை

அன்பு

நேர்மை

**அலகு:2** செய்யுள்

தன்னம்பிக்கை

முயற்சி

**அலகு:3**

தமிழ் இலக்கிய வரலாறு - தமிழாய்வுத்துறை வெளியீடு

பல்லவர்காலம்

நாயக்கர்காலம்

#### அலகு:4

படைப்பிலக்கியம் - புதினம்

சு.தமிழ்ச்செல்வி - கீதாரி

#### அலகு:5

கடிதம் எழுதுதல்

#### பாட நூல்கள்

செய்யுள்

தமிழ் இலக்கிய வரலாறு

கீதாரி

கடித இலக்கியம்

- தமிழாய்வுத்துறை வெளியீடு

- தமிழாய்வுத்துறை வெளியீடு

- சு.தமிழ்ச்செல்வி

- பயிற்சி ஏடு.

(for the candidates admitted from June 2014 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**  
**CREDITS : 3**

**CODE: U14HN2HIN02**  
**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**

**CREDIT : 3**

**CODE : U13FR2FRE02**

**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.

(for candidates admitted from 2014 onwards)  
**HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2.**  
**2014 - 2015**  
**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**

**NO.OF HRS/WK:6**  
**NO.OF CREDITS: 3**

**CODE:U10EL2GEN02**

**OBJECTIVES**

Integrated skills of English with focus on reading, writing, speaking and listening.  
Integrated sub skills that include comprehension, vocabulary, grammar, spelling, punctuation and reference skills.  
Literary appreciation (incidental)

**UNIT I**

The Suitor and Papa: *Anton Chekov*

**UNIT II**

The Sniper :*Liam O'Flaherty*

**UNIT III**

A Handful of Dates :*Tayeb Salih*

**UNIT IV**

Two Gentlemen of Verona: *A.J. Cronin*

**UNIT V**

GRAMMAR - 1. Transformation of sentences – a) Direct – Indirect speech b) Voices  
2. Question Tag 3. Tenses

COMPREHENSION – Prescribed texts

COMPOSITION - 1. Personal letter  
2. Creative Writing  
3. Narrative Writing  
4. Article Writing

GENERAL ESSAY: 5 TOPICS

1. My relationship with my mother
2. My favourite hobby
3. Look before you leap
4. All that glitters is not gold
5. Me, after ten years...

**BOOKS FOR REFERENCE**

Renu, Anand and Geetha, Rajeevan, *Images Of Life An Anthology of Prose*, New Delhi: Cambridge University Press, 2006. Print.

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**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.C.A. / B.Sc Computer Science**  
**SEMESTER II**  
**MAJOR CORE 2: DATA STRUCTURES AND ALGORITHMS**

**CODE: U14CA2MCT02 / U14CS2MCT02**

**HOURS/WEEK: 5**  
**CREDITS 5**

**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 Structure – 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.

**UNIT I** : Chapters 1.1(Pg.no29-34), 1.2(Pg.no42-55), 2.1-2.3(Pg.no93-122), 3.1(Pg.no133-141).

**UNIT II** : Chapters 4.1- 4.2(Pg.no190-218).

**UNIT III** : Chapters 5.1-5.2(Pg.no265-284),5.5(325-334).

**UNIT IV** : Chapters 6.2(Pg.no355-361), 6.3(Pg.no372-378), 6.4(Pg.no381 - 384)

**UNIT V** : Chapters 8.1(Pg.no531-532,537-544), 8.3(Pg.no563-564).

## **REFERENCE BOOKS:**

1. Ellis Horowitz, Sartaj Sahni, Dinesh Mehta. “**Fundamentals of Data Structures in C++**”, 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. A.Michael Berman, “**Data structures via C++ Object by Evolution**”, 2002.

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.C.A. / B.Sc Computer Science**  
**SEMESTER II**  
**MAJOR CORE 3**

**DATA STRUCTURES USING C LAB**

**CODE: U14CA2MCP03 / U14CS2MCP03**

**HOURS/WEEK: 5**  
**CREDITS            4**

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.

**HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 620 002.**  
**(For the candidates admitted from 2008 onwards)**  
**SEMESTER – II**  
**Allied 3 - APPLIED MATHEMATICS II**  
**(for Computer science students)**

**Total Hours: 60**  
**Hours/Week: 4**  
**Credits: 3**

**Code: U08MA2ACT11**  
**Marks:100**

**GENERAL OBJECTIVE:**

This course introduces the basic concepts of mathematics relevant to business and managerial skills.

**UNIT I: TRANSPORTATION PROBLEM (12 HRS)**

Transportation problem - Initial basic feasible solution – North west corner rule – Vogel’s Approximation method – Matrix minima method(optimal solution excluded)

**UNIT II: ASSIGNMENT PROBLEM (12 HRS)**

Assignment problem(Travelling salesman problem excluded)

**UNIT III: MEASURES OF CENTRAL TENDENCY, VARIATION AND SKEWNESS (12 HRS)**

**MEASURES OF CENTRAL TENDENCY, VARIATION AND SKEWNESS**

Mean – Median – Mode – Measures of variation: Range – Quartile deviation &Standard deviation – Karl Pearson’s Coefficient of Skewness.

**UNIT IV: ASSOCIATION OF ATTRIBUTES: (12 HRS)**

Yules coefficient of association. Correlation coefficient – rank correlation.

**UNIT V: TESTS OF SIGNIFICANCE (12 HRS)**

Test of significance based on normal distribution – Difference between proportions – Difference between means – Difference between standard deviation(problems only)

**TEXT BOOKS:**

1. KandiSwarup , Gupta P.K., Man Mohan (2004), “**OPERATIONS RESEARCH**”, Sultan Chand & Sons, New Delhi.
2. Vittal. P.R.,(2004), “**BUSINES STATISTICS**”, Margham Publishers, Chennai.

3. Pillai R.S.N, Bagavathi.V (2007) “**STATISTICS**”(Theory and Practice), S.Chand and company, New Delhi.

**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**  
**B.A/B.Sc./B.Com/B.R.SC/B.C.A/B.B.A DEGREE EXAMINATION**  
**SEMESTER-II**  
**SBE-1 SOFT SKILL DEVELOPMENT**

**Hrs – 2/Week**

**CODE:U14RE2SBT01**  
**CREDITS : 2**

**General Objective:**

The student understands the need for the development of self esteem, team spirit and communicative skills to prepare themselves for employability

**UNIT I: 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-trustworthiness-interpersonal communication-art of listening, reading and writing-art of writing-Emails etiquettes-building relationship-networking

**UNIT III: Corporate skills**

Vision, mission and goals: Concepts, vision setting, goal setting, goals for roles 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-Importance and urgent activities-Time management to move towards life vision.

**UNIT V: Employability skills**

Writing Resume/CV- interview skills-Group Discussion-mock Interview-mock GD-Career planning

**TEXT BOOKS:**

Meena K.Ayothi V.(2013) A Book on development of soft skills(soft skills: A Road Map to Success) P.R . Publishers and distributors, Trichy.

Alex K.(2012) Soft Skills Know Yourself & Know the World, S.Chand&Company Ltd., NewDelhi

**Book Recommended:**

1.Francis Thamburaj S.J.(2009).Communication soft skills for Professional Excellence,1<sup>st</sup> Ed., Grace Publishers,

Rathan Reddy B.(2005).Team Development and Leadership, Jaico Publishing House, Mumbai

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI**  
**B.A./B.Sc./B.Com./BCA&BBA, DEGREE EXAMINATION**  
**SEMESTER II**  
**SKILL BASED ELECTIVE II: RURAL ENRICHMENT AND SUSTAINABLE**  
**DEVELOPMENT**

**Hrs – 2/Week**

**CODE: U08RE2SBT02**  
**CREDIT: 2**

**UNIT I:**

Green Revolution and industrialization

Cost climate changes and mismanagement of natural resources: Effects of over exploitation of land and water, mono culture practices use of hybrid and genetically modified (GM) seeds dumping of chemical fertilizers and pesticides-reduced economic returns from agriculture- resultant social issues-poverty-farmers suicide.

**UNIT II:**

Sustainable Development: concept environmental, social and economic aspects of sustainable development-sustainable development as solution to address rural issues- successful case studies from India .

**UNIT III:**

Elements in sustainable development I: Water shed management-rain water Harvesting, de- silting, bunds construction ,check dams, managing rain water drainage canals Alternative agricultural models –agro-forestry.

**UNIT IV:**

Elements in sustainable development II: addressing agricultural issues- biofertilizers-azolla culture, vermicomposting, biopesticides-panchakavya, mulikai puchiviratti ,amirthakarasal  
,addressing health and sanitation issues-health, nutrition, vaccination.

**UNIT V:**

Survey of natural resources and resource mapping in villages, village level participatory approach(VLPA)-role of SHGs and NGOs.  
Introduction to disaster Management (fire and flood)

**HOLY CROSS COLLEGE ( AUTONOMOUS), TIRUCHIRAPPALLI-2**

**B.A. /B.Sc. / B.Com. / B.R.Sc. / B.C.A. DEGREE COURSES**

**LIFE ORIENTED EDUCATION**

**ETHICS – I: RELIGION AND VALUE SYSTEMS**

**HRS / Wk :1**

**CODE: U12VE2LVE01**

**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**

Concept of God- Faith, Meaning, Definition, Nature, Characteristics. Basic values of different religions-Globalization.

**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: U12VE2LVB01**

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

- 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**

- St. Thomas (John 20:24-31) & Missionary to India\ Pandithar Rama Bai
- William Carrie
- Dr. Ida Scudder & 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-DEGREE COURSES**  
**LIFE ORIENTED EDUCATION**  
**CATECHISM – I: GOD OF LIFE**

**HRS / WK :1**  
**MARKS : 100**

**CODE :U12VE2LVC01**  
**CREDIT : 1**

**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**

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. Vaalvin Valizha – St. John's Gospel – Fr. Eronimus

புனித சிலுவை தன்னாட்சிக் கல்லூரி, திருச்சிராப்பள்ளி - 620 002.

தமிழாய்வுத்துறை

இளம் வணிகவியல் ∴ இளங்கலை ∴ இளம் அறிவியல் பட்ட வகுப்பு

இரண்டாம் ஆண்டு - மூன்றாம் பருவம் - 2014

தாள் - III

Total Hours : 90

Hrs : 6Hrs /Wk

Credit : 3

Code : U12TL3TAM03

Marks : 100

நோக்கங்கள்:

1. வாழ்வின் கூறுகளாகிய அறம், பொருள், இன்பம், வீடுபேறு ஆகியவற்றின் வழிமுறைகளை எடுத்துரைத்தல்.
2. ஊடகங்களின் ஆழமான நுண்ணறிவை வெளிப்படுத்துதல்.

பயன்கள்:

1. காப்பியங்களை பயில்வதன் மூலமாக மாணவர்கள் அறக்கருத்துக்களை உணர்ந்து கொள்ளுதல்.
2. தமிழ் மொழியை செம்மொழியாக அறிவித்துள்ள இக்காலக்கட்டத்தில் தமிழ் இலக்கியத்தின் பயனை மாணவர்கள் முழுமையாக அறிந்துக் கொள்ளுதல்.
3. ஊடகங்கள் வெளிப்படுத்தும் நன்மை, தீமை ஆகியவற்றைப் பகுத்தறியக் கூடிய பக்குவத்தை அடைதல்.

அலகு:1 செய்யுள்

இயற்கை

நாட்டுப்பற்று

உழைப்பு

அலகு:2 செய்யுள்

மானம்

பெண்ணுரிமை

அலகு:3

தமிழ் இலக்கிய வரலாறு

சோழர் காலம்

**அலகு:4**

நாடகம்

தண்ணீர் தண்ணீர் - கோமல் சுவாமிநாதன்

**அலகு:5**

கோயிற்கலை - திட்டக்கட்டுரை, வினாடி வினா

**பாட நூல்கள்**

- |                             |                        |
|-----------------------------|------------------------|
| 1. செய்யுள் நூல்            | - தமிழ்த்துறை வெளியீடு |
| 2. தமிழ் இலக்கிய வரலாறு     | - தமிழ்த்துறை வெளியீடு |
| 3. நாடகம் - தண்ணீர் தண்ணீர் | - கோமல் சுவாமிநாதன்    |
| 4. கோயிற்கலை                | - தமிழ்த்துறை வெளியீடு |

(for the candidates admitted from June 2014 onwards)  
**HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI-620002**  
**DEPARTMENT OF HINDI**  
**PART – I LANGUAGE HINDI FOR B.A, B.Sc & B.Com**  
**HINDI PAPER-III POETRY, PREDICS, HISTORY OF HINDI LITERATURE**  
**SEMESTER – III**

**HRS/WEEK : 6**

**CREDITS : 3**

**CODE: U14HN3HIN03**

**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**

**SYLLABUS**

**SEMESTER III**

**PART I - LANGUAGE - FRENCH PAPER III [LANGUAGE & CIVILISATION**

(ÉCHO A2 2e édition)]

(For candidates admitted 2013 onwards)

**HRS/WEEK : 6**

**CREDIT : 3**

**CODE : U14FR3FRE03**

**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.

(for candidates admitted from 2013 onwards)  
**HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2.**  
**2014 - 2015**  
**II B.A., B.Sc., B.Com., B.R.Sc., B.C.A., B.B.A., SEMESTER I**  
**PART II - ENGLISH III - GENERAL ENGLISH PAPER III**

**NO.OF HRS/WK:6**  
**NO.OF CREDITS: 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 tuckin
2. In tunewith
3. To frown upon
4. In favourof
5. In vogue
6. To gloatat
7. On thecontrary
8. Promptedby
9. To pale tonothing
10. To waxenthusiastic
11. To figure oneout
12. Crystalclear
13. Greyarea



14. To have second thoughts
15. On red alert
16. On a fool's errand
17. To be taken aback
18. To storm
19. Troublespots
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?

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**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER - III**  
**MAJOR CORE 4: DATABASE SYSTEMS**

**CODE: U11CS3MCT04**

**HOURS/WEEK : 5**  
**CREDITS            5**

**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 – Object-Based and Semistructured Databases – Data Storage and Querying – Transaction Management – Data Mining and Analysis – Database Architecture – Database Users and Administrators – History of Database Systems.

**UNIT II**

**RELATIONAL MODEL :** Structure of Relational Databases – Fundamental Relational-Algebra Operations – Additional Relational-Algebra Operations – Extended Relational-Algebra Operations – Null Values – Modification of the Database.

**UNIT III**

**DATABASE**

**DESIGN**

**Database Design and the E-R Model:** Overview of the Design Process – The Entity-Relationship Model – Constraints – Entity-Relationship Diagrams – Entity-Relationship Design Issues – Weak Entity Sets. **Normalization:** Recharacterizing Relational Database Schemas – Normal Forms – Anomalies and Data Redundancies – Lossless Join and Dependency – Preserving Decomposition – Decomposition into Third Normal Form - BCNF – Problems in the Decomposition Approach – Normalization through Synthesis – Multivalued Dependency – Normalization using Join Dependency: Fifth Normal Form.

## UNIT IV

**SQL AND ADVANCED SQL :** Background – Data Definition – Basic Structure of SQL Queries – Set Operations – Aggregate functions – Null Values – Nested Sub queries – Complex Queries – Views – Modification of the databases of the database – Joined Relations. SQL data types & schemas – Integrity constraints- Authorization – Embedded SQL- Functions and procedural Constructs - Recursive Queries – Advanced SQL Features.

## 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. **Transaction :** Transaction Concept – Transaction State – Implementation of Atomicity and Durability – Concurrent Executions – Serializability - Recoverability.

### **TEXT BOOKS**

1. Abraham Silberschatz, Henry F. Korth, S. Sudarshan, “**Database System Concepts**”, 2006, Fifth Edition, McGraw-Hill Publications.  
**UNIT I :** Chapter 1(1.1-1.13)  
**UNIT II :** Chapter 2(2.1-2.6)  
**UNIT III :** Chapter 6(6.1-6.6)  
**UNIT IV :** Chapters 3(3.1-3.11),4(4.1-4.6)  
**UNIT V :** Chapters 11(11.1,11.6-11.8),15(15.1-15.6)
2. Bipin C. Desai, “**An Introduction to Database Systems**” ,2000, West Publishing Company.  
**UNIT III :** Chapters 6(6.5(6.5.1-6.5.3,6.5.5,6.5.6)),7(7.1-7.4)

### **REFERENCE BOOKS**

1. Alexis Leon and Mathews Leon, “**Database Management Systems**”, 2002, Vikas Publishing House Pvt, Ltd., New Delhi.
2. Desai Bipin C., “**An Introduction to Database Systems**”, 2001, Galgotia Publications Ltd., New Delhi.
3. Elmasri & Navathe, “**Fundamentals of Database Systems**”, 2006, Pearson Education Publications, New Delhi.
4. Ragu Ramakrishnan, “**Database Management System**”, 2000, Tata McGraw Hill Publications Company Limited, New Delhi.
5. Ramez Elmasri, Navathe Shamkant B., “**Fundamentals of Database Systems**”, 2001, Addison Wesley Longman Publications Pvt. Ltd., New Delhi.

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER - III**  
**MAJOR CORE 5:RDBMS - LAB**

**CODE: U08CS3MCP05**

**HOURS/WEEK : 5**  
**CREDITS            5**

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.

**HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 620 002.**

**(For the candidates admitted from 2008 onwards)**

**SEMESTER – III**

**Allied 4 - APPLIED MATHEMATICS III**

**(for Computer science students)**

**Total Hours: 60**

**Hours/Week: 4**

**Credits: 3**

**Code: U11MA3AOT13**

**Marks:100**

**GENERAL OBJECTIVE:**

To enable the students to acquire the knowledge on numerical and certain statistical concepts.

**UNIT I : INTERPOLATION AND SOLUTION OF ALGEBRAIC AND  
TRANSCENDENTAL EQUATIONS (12 HRS)**

Newton Gregory forward and backward interpolation formulae-Lagrange's Interpolation formula.Solving algebraic and transcendental equations – Bisection, False position and Newton Raphson methods.

**UNIT II : SOLUTION OF SIMULTANEOUS EQUATIONS (12 HRS)**

Gauss elimination – Finding inverse of a matrix using Gauss elimination method – Iterative methods.Gauss Jacobi and Gauss Seidal methods.

**UNITIII : NUMERICAL INTEGRATION: (12 HRS)**

Trapezoidal rule and simpsons 1/3 rule. Solving differential equations (1<sup>st</sup> order differential equations only) – solutions by Euler's method – rungeKutta 2<sup>nd</sup> and 4<sup>th</sup> order method.

**UNIT IV :ANALYSIS OF TIME SERIES (12 HRS)**

Time Series - components of Time Series - measurement of trend - measures of seasonal variation(Methods of simple averages and Link relatives only) - problems (Deseasonalization is excluded)

**UNIT V :INDEX NUMBERS (12 HRS)**

Index Numbers – Laspeyer's,Fisher's and Paasche's index numbers- tests for Index Numbers - cost of living Index Number - uses of Index Numbers.

**TEXT BOOKS:**

1. Venkataraman M.K(2006), "**NUMERICAL METHODS IN SCIENCE AND ENGINEERING**", National Publishing House, Chennai

2. Pillai R.S.N, Bagavathi .V (2007 ) “STATISTICS” S.Chand and Company ,New Delhi

**REFERENCE:**

1.Freedman,David,(2006), “STATISTICS”, Viva Books PvtLtd,New Delhi.

2.Kalavathy .S,(2004),”NUMERICAL METHODS“ .Thomson Publishers ,Newdelhi.

3.Kandaswamy .P,(2001), “NUMERICAL METHODS” S.Chand& co, Newdelhi.

4.Vedamurthy.V.N,(2005),”NUMERICAL METHODS” ,VikasPublishers,Newdelhi.

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI- 2**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER - III**  
**SKILL BASED ELECTIVE 3**  
**MULTIMEDIA AND ANIMATION - LAB**

**CODE: U13CS3SBP03**

**HOURS/WEEK : 2**

**CREDITS 2**

**Photoshop Practical Exercises**

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 Practical Exercises**

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.R.Sc. / B.C.A./B.B.A DEGREE COURSE**  
**II YEAR: SEMESTER - III**  
**(From 2012 onwards)**  
**GENDER STUDIES**

**Hours: 1Hr/wk**

**CODE: U12WS3GST01**  
**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 Main streaming – 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<sup>rd</sup> 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 COURSES**  
**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 attitude of men and women towards women, 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 Prett Nandhini Upreti, jaipur 2000 "Women and problems of Gender Discrimination".
4. Thomas B.Jayaseelan, 2002, "Women: Rights and law" Indian Social Institute, New Delhi.
5. 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**  
**CREDIT : 1**

**CODE: U12VE4LVB02**  
**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
- Elijah(I Kings 17-19)
- Elisha(II Kings 4-6)
- Isaiah (Is 1,6,11,36-38,40-42,44,50,53,61)
- Jeremiah (Jer 1-3,7-12,18-19,23)
- 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 SAINTS**

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.

**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.

புனித சிலுவை தன்னாட்சிக் கல்லூரி, திருச்சிராப்பள்ளி - 620 002.

தமிழாய்வுத்துறை

இளம் வணிகவியல் ∴ இளங்கலை ∴ இளம் அறிவியல் பட்ட வகுப்பு

இரண்டாம் ஆண்டு - நான்காம் பருவம் - 2014

தாள் - IV

Total Hours : 75

Hrs : 5Hrs /Wk

Credit : 3

Code : U12TL4TAM04

Marks : 100

**நோக்கங்கள்:**

1. மாணவர்களுக்குத் தமிழர்தம் வாழ்வியல் விழுமியங்களை உணர்த்துதல்.
2. அறநெறிகள் வாழ்க்கைக்கு வழிகாட்டும் விதத்தினை எடுத்துரைத்தல்
3. சிகரம் தொட்ட படைப்பாளிகளின் சிந்தனைகளை வெளிப்படுத்துதல்
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**

கடமை

காலந்தவறாமை

ஒற்றுமை உணர்வு

**அலகு:2 செய்யுள்**

நட்பு

குடும்பமும் விருந்தோம்பலும்

**அலகு:3**

தமிழ் இலக்கிய வரலாறு

சங்ககாலம் - சங்கம் மருவியகாலம்

எட்டுத்தொகை, பத்துப்பாட்டு, பதினெண்கீழ்க்கணக்கு நூல்கள்

**அலகு:4**

உரைநடை

சங்க இலக்கியம் (பெண்பாற் புலவர்கள்)

கட்டுரைத் தொகுப்பு

**அலகு:5**

பொது - மொழிபெயர்ப்பு

**பாட நூல்கள்**

- |                                      |                            |
|--------------------------------------|----------------------------|
| 1. செய்யுள் நூல்                     | - தமிழாய்வுத்துறை வெளியீடு |
| 2. தமிழ் இலக்கிய வரலாறு              | - தமிழாய்வுத்துறை வெளியீடு |
| 3. சங்க இலக்கியம் கட்டுரைத் தொகுப்பு | - தமிழாய்வுத்துறை வெளியீடு |
| 4. மொழிபெயர்ப்பு                     | - தமிழாய்வுத்துறை வெளியீடு |

(for the candidates admitted from June 2014 onwards)  
**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**  
**CREDITS : 3**

**CODE: U14HN4HIN04**  
**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**

**SYLLABUS**

**SEMESTER IV**

**PART I - LANGUAGE - FRENCH PAPER IV [LANGUAGE & CULTURE  
(ÉCHO A2 2e édition)]**

(For candidates admitted 2013 onwards)

**HRS/WEEK : 5**

**CREDIT : 3**

**CODE : U14FR4FRE04**

**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 20<sup>e</sup> 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 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 tâches 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.



(for candidates admitted from 2013 onwards)  
**HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2.**  
**2014 - 2015**  
**II B.A., B.Sc., B.Com., B.R.Sc., B.C.A., B.B.A., SEMESTER I**  
**PART II - ENGLISH IV - GENERAL ENGLISH PAPER IV**

**NO.OF HRS/WK:6**  
**NO.OF CREDITS: 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. Notemaking  
2. Dialogue  
3. Creative Writing  
4. Narrative Writing  
5. Imaginative Writing

**GENERAL ESSAY – 5TOPICS**

1. Should capital punishment beabolished?
2. Is a corruption- free India adream?
3. The nuclear family and its consequent changes insociety.
4. The threat ofterrorism.
5. If man becomesimmortal...

**THINK BETTER - READ AND COMMUNICATE : MODERN FABLES**

1 – 10 for Internal Testing

**BOOKS FOR REFERENCE**

OraneeJansz : *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 takeover
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-quiet
16. Collision
17. Exiled
18. Revolution
19. To come round
20. To fight for a cause

**DEPARTMENT OF COMPUTER SCIENCE  
HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI-2.  
B.Sc. COMPUTER SCIENCE  
SEMESTER – IV  
MAJOR CORE 6: PRINCIPLES OF MICRO COMPUTER SYSTEMS**

**HOURS/WEEK: 5**

**CODE: U15CS4MCT06**

**CREDITS :5**

**MARKS: 100**

**OBJECTIVES**

To Give Assembly Language Programming Knowledge in Intel 8086.

**UNIT I**

**8086 Architecture** CPU Architecture - Machine Language Instructions – The 8088 Assembler Language Programming: Assembler Instruction Format-Data Transfer Instructions - Arithmetic Instructions - Branch Instructions

**UNIT II**

**Instructions** - Loop Instructions - NOP and HLT Instructions - Flag Manipulation Instructions. Logical Instructions - Shift and Rotate Instructions - Byte and String Manipulation: String Instructions - REP Prefix.

**UNIT III**

**Modular Programming:** Linking and Relocation: Segment Combination-Access to External Identifiers - Stacks - Procedures: Calls, Returns and Procedure Definitions – Saving and Restoring Register – Procedure Communication – Recursive Procedures - Interrupts and Interrupt Routines

**UNIT IV**

**MULTIPROCESSORS:** Characteristics of Multiprocessors \_ Interconnection Structures \_ Interprocessor Arbitration \_ Interprocessor Communication and Synchronization \_Cache Coherence.

**MEMORY ORGANIZATION**

Virtual Memory – Memory Management Hardware

**UNIT V**

**PIPELINE AND VECTOR PROCESSING:** Parallel Processing – Pipelining – Arithmetic Pipeline – Instruction Pipeline – RISC Pipeline – Vector Processing.

## TEXT BOOKS

1. Yu-Cheng Liu and Glenn A. Gibson, 2001, *Microcomputer Systems:The 8086 /8088 family*, Second Edition, Prentice -Hall of India,
2. M.Morris Mono, “**Computer System Architecture**”, 2005, Third Edition,Prentice – Hall of India Private Ltd, New Delhi.

**UNITS - I,II,III** : Chapters 2 : (2.1, 2.3, 2.5), 3(3.1 - 3.9),4( 4.1 - 4.4),5( 5.1, 5.2)  
**UNIT IV UNIT V** : Chapters 13: (13.1-13.5), 12: (12.6,12.7)  
: Chapters 9 (9.1-9.6)

## REFERENCE BOOKS

1. V.Korneev,A.Kiselec,2005, ”*ModernMicroprocessors*”, New Delhi,Dreamtech,Press
2. Badri Ram,2003, ”*Advanced Micro Processors and Interfacing*”,NewDelhi, Tata McGraw – hill Publishing cmp Pvt ltd.
3. Charles M,Gilmore, 2005,Second Edison, ”*Microprocessors Principles and application*”, Tata McGrawhill Publishing cmp ltd.
4. Andrew Tanenbaum, “**Structured Computer Organization**” ,2006,Fifth Edition ,Pearson Education.
5. William Stallings,, “**Computer Organization and Architecture**”,2009,Seventh Edition, Pearson Education.

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI - 2**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER - IV**  
**MAJOR ELECTIVE 1(OPTIONAL)**

**VISUAL PROGRAMMING - LAB**

**CODE: U14CS4MEP01**

**HOURS/WEEK : 5**  
**CREDITS : 5**

1. Write a Procedure for the following:  
For Scrolling Text on Client area using Scale properties.  
Execute the Program and show the results in a neat format.
2. Use the Circle method to draw several ellipses and circles so that they have the appearance of a pair of eyes.
3. Write code to develop Calculator program which includes basic mathematical functions like square, multiplication, division and cosine.
4. Develop a window environment which accepts the file name as input and displays the content of the selected file. The environment should include the options such as filename listing, types of files listed, directory and drive listing. After the listing, give provisions to confirm and cancel the selection.
5. Create a designer with basic primitives like circle, square, rectangle, ellipse and fill the same.
6. Write code for the following
  - a. Scroll the text „Visual Programming Lab“ from left to right and right to left on the Client area.
  - b. Divide the Client area into 8\*8 cells and while moving the mouse on these cells, the shape of cursor should change in every cell
7. Write a program to expand and shrinking Objects – While a program is running.
8. Write a program to create animation by using the Move Method and a Timer object.
9. By the use of Flex Grid Control create sales Data to track sales in a particular region.
10. Write a program by using Data Grid to display a University Course List.
11. Write a Program to Majortain the following information in a Business Database.
  - Supplier Addresses.
  - Customer Addresses.
  - Type of Business.
  - Stock level of each Item.

Execute the Program with suitable data and show the results in a neat form.

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER - IV**  
**MAJOR ELECTIVE 1(OPTIONAL): OPEN SOURCE TECHNOLOGY**

**CODE: U14CS4MEP02**

**HOURS/WEEK : 5**  
**CREDITS : 5**

1. Use the LINUX commands and give the output.
2. Write a server side 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.
3. Write a PHP program that adds products that are selected from a web page to a shopping cart.
4. Write a PHP program to access the data stored in a mysql table.
5. Write a PHP program interface to create a database and to insert a table into it.
6. Write a PHP program using classes to create a table.
7. Write a PHP program to upload a file to the server.
8. Write a PHP program to create a directory, and to read contents from the directory.
9. Create a mysql table and execute queries to read, add, remove and modify a record from that table.

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER - IV**  
**MAJOR ELECTIVE 1(OPTIONAL): DOT NET LAB**

**CODE: U14CS4MEP03**

**HOURS/WEEK : 5**  
**CREDITS : 5**

**VB.NET**

1. Scientific Calculator.
2. Notepad Creation.
3. Student Marksheet Preparation.
4. Employee Pay Bill Preparation.
5. Electricity Bill Generation.
6. Telephone Bill Generation.

**ASP.NET**

1. Login Registration Form design and validation.
2. Library Management.
3. Train Information Processing.
4. Job Portal Designing.

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI-2**  
**DEPARTMENT OF PHYSICS**  
**Allied- 5: ALLIED PHYSICS PRACTICAL-ELECTRONICS**  
**(OPTIONAL PAPER II)**  
**(For Computer Science students)**

**NO.OF HOURS: 4**

**CODE: U13PH4AOP05**  
**NO.OF CREDITS: 3**

**Course objective:** To understand the role of various components in electronic circuits and to build basic circuits such as operational amplifiers and to study practical digital circuits like registers, adder, subtractor and microprocessor

1. Study of Junction Diode characteristics
2. Study of Zener Diode characteristics
3. Construction of Regulated Power Supply using Zener Diode
4. Op – Amp – Adder and Subtractor
5. Op – Amp – Inverting and non-inverting amplifiers
6. Study of Logic gates AND and OR using discrete components
7. Study of IC chips
8. Verification of De-Morgan's Theorems
9. NAND as universal gate
10. Karnaugh Map – Construction of simplified circuit
11. Flip – Flops: R-S, J-K and D
12. Study of Encoders and Decoders
13. Half adder, Half Subtractor and Full adder circuits
14. Shift Left and Right registers
15. Microprocessor – Programming for addition and Subtraction
16. Microprocessor – Programming for identifying the largest and smallest number from a series.



**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI-2**  
**DEPARTMENT OF PHYSICS**  
**Allied- 6: ALLIED PHYSICS (OPTIONAL PAPER III)**  
**BASICS OF ELECTRONICS**  
**(For Computer Science students)**

**NO.OF HOURS: 4**

**CODE: U13PH4AOT04**  
**NO.OF CREDITS: 4**

**Course Objective:** To understand the characteristics and functions of various electronic elements such as diode, transistor and operational amplifier and the basic principles of digital electronics and microprocessor.

**UNIT I: SEMICONDUCTOR ELECTRONICS**

Semiconductors – P type and N type semiconductors- PN Junction diode – Biasing of PN junction – Volt-Ampere characteristics of diode- Zener diode- characteristics of zener diode- zener diode as a voltage regulator- Bipolar junction transistor – Basic configurations– Characteristics of transistor in CE mode –voltage divider bias-Transistor amplifier.

**UNITII: OPERATIONAL AMPLIFIER**

Differential amplifier – Characteristics of an ideal op-amp– Virtual ground - Inverting amplifier – Non Inverting amplifier – Applications: Adder, Subtractor, Integrator, Differentiator and Solving differential equations.

**UNIT III: DIGITAL ELECTRONICS –I**

Boolean operations – Rules and Laws of Boolean Algebra – Logic gates- DeMorgan's theorems- NAND and NOR as universal gates - Karnaugh map - four variables- Half adder – Full adder – Half subtractor – Encoder – Decoder – Flip Flops: SR, D, JK and T Flip Flops.

**UNIT IV: DIGITAL ELECTRONICS –II**

Modulus of a counter – Modulo –N counter (asynchronous counters) - asynchronous Decade counter- Synchronous counters using JK Flip Flop – Synchronous Decade counter – Shift registers – Series and Parallel Shift registers: shift left and shift right registers.

**UNIT V: MICROPROCESSOR**

General architecture of Microcomputer and microprocessor – CPU – Input/output devices – ALU – memory – types of memories – Semiconductor memories – RAM – static RAM – Dynamic RAM – Architecture of 8085 - Instruction and data formats – addressing modes- simple programming : Addition, subtraction and finding smallest/largest element of an integer array.

**BOOK FOR STUDY:**

1. Mehta V.K., Principles of Electronics, S.chand and Company Ltd,New Delhi, 7 th edition (2001) (Unit I & II)
2. Vijayendran.V, Introduction to Integrated Electronics, S. Viswanathan Pvt., Ltd. (2011) (Unit III & IV)
3. Ram .B, Fundamentals of microprocessors and microcomputer, Dhanapat. Rai & sons New Delhi, Fifth Edition (2001).(unit V)

**BOOK FOR REFERENCE:**

1. Sedha R.S., A text book of applied Electronics, S.Chand & company Ltd, New Delhi (2002)
2. Malvino. A and Leach, Digital Principles and Applications,4<sup>TH</sup> edition, Mc-Graw Hill, New York (1986)
3. Ramesh Gaonkar, Microprocessor: Architecture, Programming and Applications by Wiley Eastern Limited.

**HOLY CROSS COLLEGE ( AUTONOMOUS), TIRUCHIRAPPALLI-2**

**B.A. /B.Sc. / B.Com. / B.R.Sc./ B.C.A. DEGREE COURSES**

**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 attitude of men and women towards women, 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 Pretti Nandhini Upreti, jaipur 2000 "Women and problems of Gender Discrimination".
4. Thomas B.Jayaseelan, 2002, "Women: Rights and law" Indian Social Institute, New Delhi.
5. 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**  
**CREDIT : 1**

**CODE: U12VE4LVB02**  
**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
- Elijah(I Kings 17-19)
- Elisha(II Kings 4-6)
- Isaiah (Is 1,6,11,36-38,40-42,44,50,53,61)
- Jeremiah (Jer 1-3,7-12,18-19,23)
- 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 SAINTS**

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.

**REFERENCES :**

- 1.“Vatican II Revised” Archbishop Angelo Fernandes Published by X.Diya 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.

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI - 2**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER V**  
**MAJOR CORE 7: JAVA PROGRAMMING**

**CODE: U15CS5MCT07**

**HOURS/WEEK : 5**

**CREDITS 4**

**OBJECTIVE**

Learn and develop JAVA Programming skills.

**UNIT I**

**OVERVIEW OF JAVA LANGUAGE:** 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.

**CONSTANTS, VARIABLES AND DATA TYPES:** Introduction – Constants – Variables – Data types – Declaration of Variables – Giving Values to Variables – Scope of Variables - Symbolic Constants – Type Casting – Getting Values of Variables – Standard Default Values.

**OPERATORS AND EXPRESSIONS:** Introduction – Arithmetic Operators – Relational Operators – Logical Operators – Assignment Operators – Increment and Decrement Operators – Conditional Operator – Bitwise Operators – Special Operators – Arithmetic Expressions – Evaluation of Expressions – Precedence of Arithmetic Operators – Type Conversions in Expressions – Operator Precedence and Associativity – Mathematical Functions.

**UNIT II**

**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.

**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 – Adding Variables – Adding Methods – Creating Objects – Accessing Class Members – Constructors – Methods Overloading – Static Members – Nesting of Methods – Inheritance – Overriding Methods – Final Variables and Methods – Final Classes - Finalizer Methods – Abstract Methods and classes – Visibility Control.

**UNIT III**

**ARRAYS, STRINGS AND VECTORS:** Arrays – One-Dimensional Arrays – Creating an Array – Two-Dimensional Arrays – Strings – Vectors – Wrapper Classes.

**INTERFACES: MULTIPLE INHERITANCE:** Introduction – Defining Interfaces – Extending Interfaces – Implementing Interfaces – Accessing Interface Variables.

## UNIT IV

**PACKAGES: PUTTING CLASSES TOGETHER:** Introduction –Java API Packages – Using System Packages –Naming Conventions – Creating Packages – Accessing a Package – Using a Package – Adding class to a Package – Hiding classes.

**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.

**MANAGING ERRORS AND EXCEPTIONS:** Types of Errors – Exceptions – Syntax of Exception Handling Code - Multiple Catch Statements - Using finally statements – Throwing Our Own Exceptions – Using Exceptions for Debugging.

## UNIT V

**APPLET PROGRAMMING:** 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 Applet – Aligning the Display – More About HTML Tags - Displaying Numerical Values – Getting Input from the User.

**GRAPHICS PROGRAMMING:** Introduction – The Graphics Class – Lines and Rectangles – Circles and Ellipses – Drawing Arcs – Drawing Polygons – Line Graphs – Using Control Loops in Applets – Drawing Bar Charts.

## TEXT BOOK

1. Balagurusamy. E, **Programming with Java**, 2002, Tata McGraw-Hill Publication Pvt. Ltd., New Delhi.

<b>UNIT I</b>	: Chapters 3,4,5
<b>UNIT II</b>	: Chapters 6,7,8
<b>UNIT III</b>	: Chapters 9,10
<b>UNIT IV</b>	: Chapters 11,12,13
<b>UNIT V</b>	: Chapters 14,15

2. Grady Booch , James Rumbaugh , Ivar Jacobson ,”**The Unified Modeling Language User Guide**”, 2002,Pearson Education Pte. Ltd ., Delhi.

**UNIT III** : Chapter 9,10,11,12,13,14.

## REFERENCE BOOKS

1. Ken Arnold, James Gosling, David Holmes, **The Java Programming Language**, 2005, Pearson Education Pvt. Ltd., New Delhi.
2. Koparkar. P, **Java For You**, 2001, Tata McGraw-Hill Publications Pvt. Ltd., New Delhi.
3. Dr. Muthu. C, **Programming with Java**, 2004, Vijay Nicole Imprints Pvt. Ltd., Chennai.
4. Patrick Naughton , **The Java Hand Book**, 2002, Tata McGraw-Hill Publications Pvt. Ltd., New Delhi.
5. Xavier. C, **Projects on Java 2**, 2002, Scitech Publications India Pvt. Ltd., Chennai.



**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI - 2.**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER - V**  
**MAJOR CORE 8: SOFTWARE ENGINEERING**

**CODE: U11CS5MCT08**

**HOURS/ WEEK : 5**  
**CREDITS 4**

**OBJECTIVE**

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

**UNIT I**

**SOFTWARE AND SOFTWARE ENGINEERING:** The nature of software – The unique nature of WebApps – Software Engineering – The Software Process – The Software Engineering Practice- Software myths.

**PROCESS MODELS:** A Generic Process Model – Process Assessment and Improvement – Prescriptive Process Models (The Waterfall Model, Incremental Process Models, Evolutionary Process Models, Concurrent Models)- Specialized Process models(Component based Development, The formal Methods model, Aspect-Oriented Software Development)- the Unified Process – Personal and Team process models.

**AGILITY:** What is agility? Agility and the Cost of change

**UNIT II**

**UNDERSTANDING REQUIREMENTS:** Requirement Engineering – Establishing the Ground work-Eliciting the Requirements- Developing Use cases – Building the requirement model – Negotiating Requirements – Validating Requirements.

**REQUIREMENT MODELING: SCENARIOS, INFORMATION AND ANALYSIS CLASSES:** Requirement Analysis – Scenario Based Modeling – UML Models that Supplement the Use Case – Data Modeling Concepts – Class based Modeling.

**UNIT III**

**DESIGN CONCEPTS**

Design within the Context of Software Engineering – The Design process - The Design Concepts(Abstraction, Architecture, Patterns, Separation of concerns, Modularity, Information hiding, Functional Independence, refinement, Aspects , Refactoring, OOD Concepts.

The Design model( Data Design elements – Architectural Design Elements – Interface Design Elements- Component-Level Design Elements – Deployment-Level Design Elements)

**UNIT IV**

**QUALITY MANAGEMENT**

Quality Concepts : What is Quality? Software Quality? Achieving Software Quality - Software Quality Assurance – Elements of Software Quality Assurance – SQA Tasks, Goals and Metrics – Statistical Software Quality Assurance (six sigma) – ISO 9000 Quality standards

## **SOFTWARE TESTING STRATEGIES**

A Strategic approach to Software Testing – Strategic Issues - Test Strategies for Conventional Software (Unit testing, Integration testing) – Test strategies for Object Oriented Software – Test Strategies for WebApps – Validation Testing – System Testing – The Art of Debugging.

## **UNIT V**

### **TESTING CONVENTIONAL APPLICATION**

Software Testing fundamentals – Internal and External use of Testing – White box Testing – Basic Path Testing – Control Structure Testing – Black box Testing – Model based Testing – Testing for Environments – Architectures and Applications.

### **ESTIMATION FOR SOFTWARE PROJECT**

Observation an estimation – The Project planning process – Embrical estimation models – Estimation for Object Oriented Project.

**PROJECT SCHEDULING** : Project Scheduling – Scheduling.

## **TEXT BOOK**

1. Roger S.Pressman, “**Software Engineering: A Practitioner’s Approach**”, 2010, Seventh Edition, McGraw-Hill International Edition.

- UNIT I** : Chapters 1.1 – 1.6, 2.1 – 2.6,3.1,3.2
- UNIT II** : Chapters 5.1 – 5.7,6.1 – 6.5
- UNIT III** : Chapters 8.1 – 8.4 ,Appendix 1 & 2
- UNIT IV** : Chapters 14.1,14.2,14.4,16.2,16.3,16.5,16.7,17.1-17.8
- UNIT V** : Chapters 18.1 – 18.8 ,26.1,26.2,26.7,26.8,27.2,27.5

## **REFERENCE BOOKS**

1. Ian Sommarvilla, “**Software Engineering**”, 2009, Eighth edition, Pearson Education Publishing Ltd., New Delhi.
2. Richard Fairley, “**Software Engineering Concepts**”, 2000, Tata McGraw Hill International Publishing Company Ltd., New Delhi.
3. Ali Behfroz and Frederick J.Hudson, “**Software Engineering Fundamentals**”, 2003, Oxford University Press, New York.
4. Carlo Ghezzi, Mehdi Jazayeri, Dino Mandride, “**Fundamentals of Software Engineering**”, 2002, Prentice Hall of India , New Delhi.
5. Jawadekar Waman S., “**Software Engineering - Principles and Practice**”, 2004, Tata McGraw Hill Publishing Companies, New Delhi

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI-2.**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER -V**  
**MAJOR CORE 9: OPERATING SYSTEM**

**CODE: U12CS5MCT09**

**HOURS/WEEK: 5**  
**CREDITS : 4**

**OBJECTIVE**

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

**UNIT I**

**INTRODUCTION:** What is an Operating System? – Majorframe 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**”, 2002, 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.

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI-2.**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER V**  
**MAJOR CORE 10: JAVA PROGRAMMING - LAB**

**CODE: U08CS5MCP10**

**HOURS/WEEK : 5**  
**CREDITS            4**

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

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI -2.**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER- V**  
**MAJOR ELECTIVE 2: UNIX SHELL PROGRAMMING - LAB**

**CODE: U14CS5MEP04**

**HOURS/WEEK : 5**  
**CREDITS 5**

1. A. Unix programs using basic commands for the following cat,  
cp, rm, mv, cmp, wc, nl, tac, tail, head, cal, date, banner  
B. Menu driven program using who, ls, date, pwd
2. A. Write a shell program for the Positional Parameters  
B. Menu driven program using copy, edit, rename
3. A. Write a shell program to Search a word in a file  
B. Write a shell program to Sum of two digits
4. A. Write a shell program to check whether the given file is readable or writable  
B. Write a shell program to find leap year or not
5. A. Write a shell script to find the string is a palindrome or not  
B. Write a shell program to convert the upper case and lower case letters.
6. A. Write a shell program to find the factorial of n numbers  
B. Write a shell program to find the largest and smallest in numbers
7. A. Write a shell script to display the result of the student.  
B. Write a shell script to find the odd numbers that are present between the  
two given numbers
8. A. Write a shell program to add, sub, mul and divide B.  
Write a shell program to find prime number or not
9. Write a shell program to calculate electricity bill.

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER- V**  
**MAJOR ELECTIVE 2: SYSTEM ANALYSIS AND DESIGN**

**CODE: U14CS5MET05**

**HOURS/WEEK : 5**  
**CREDITS : 5**

**OBJECTIVE**

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

**UNIT -I**

Overview of System Analysis and Design, Business System concepts, System development life cycle, Project Selection, Feasibility Analysis, Design, Limitation, testing and evaluation. Initial Investigation- Sources of Requests, User / Analyst, interaction

**UNIT –II**

Qualities of a System Analyst, Feasibility studies- Technical and economic feasibilities, cost and benefit analysis.

**UNIT –III**

System requirement specification and analysis- Fact finding techniques, Data Flow Diagrams, Data Dictionaries, process organization and interaction, Decision Analysis, Decision Trees and Tables. Top down and bottom up variance, Audit trails.

**UNIT –IV**

Detail Design- Modularization, module specification, file design, system development involving databases.

**UNIT - V**

System control and quality assurance- Design objectives reliability and maintenance, software design and documentation tools, unit and integration testing, testing practice and plans, system control.

**Text & Reference Books:**

1. Awad, “System Analysis Design”, Galgotia Publishing, Delhi.
2. Jamas, A.S., “Analysis and design of information systems”, Mc GrawHill.
3. Luteberg, M., Golkuhl, G and Hilsson, A, “Information System Development a Systematic Approach”, PHI
4. Leeson N., “System Analysis and Design”, Science Research Associates, 1985
5. Samprive, P.C., “System analysis: Definition Process and Design”.

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPALLI – 2**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER- V**  
**MAJOR ELECTIVE 2: MANAGEMENT INFORMATION SYSTEM**

**CODE: U14CS5MET06**

**HOURS/WEEK : 5**

**CREDITS : 5**

**OBJECTIVE**

To enable the students to explore how technology and information can be best used to achieve the organization's goals and in doing so gain strategic and sustainable competitive advantage within its business sector.

**UNIT I: AN OVERVIEW**

An Introduction to Information Systems: Information Concepts – System Concepts – What is an Information System? – Business Information Systems – Global Challenges in Information Systems. Information Systems in Organizations: Organizations and Information Systems – Competitive Advantage – Careers in information systems.

**UNIT II: INFORMATION TECHNOLOGY CONCEPTS**

Hardware: Input and Output Devices - Software: Systems Software: Operating Systems – Current Operating Systems - Application Software: Overview of Application Software – Personal Application Software – Database Systems and Business Intelligence: Database Management Systems – Database Applications – Telecommunications and Networks: An overview of Telecommunications: Short Range Wireless options – Networks and Distributed Processing: Network Types – The Internet, Intranets and Extranets: Internet and Web Applications.

**UNIT III: BUSINESS INFORMATION SYSTEMS**

Electronic and Mobile Commerce: An Introduction to Electronic Commerce – An Introduction to Mobile Commerce – Electronic and Mobile Commerce Applications – Enterprise Systems: An Overview of Enterprise Systems: Transaction Processing Systems – Transaction Processing Activities – Information and Decision Support Systems: Decision Making and Problem Solving – Knowledge Management and Specialized Information Systems: Knowledge Management Systems – An Overview of Artificial Intelligence.



## **UNIT IV: SYSTEMS DEVELOPMENT**

Systems Development: Investigation and Analysis: Systems Development Life Cycles – Systems Investigation - Systems Analysis. Systems Development: Design, Implementation, Maintenance and Review.

## **UNIT V: INFORMATION SYSTEMS IN BUSINESS AND SOCIETY**

The Personal and Social Impact of Computers: Computer Waste and Mistakes - Preventing Computer-Related Waste and Mistakes - Computer Crime: The Computer as a Tool to Commit Crime - The Computer as the Object of Crime - Preventing Computer-Related Crime - Privacy Issues.

## **TEXT BOOK**

1. Ralph M. Stair, George W. Reynolds, “**Principles of Information Systems, A Managerial Approach**”, Ninth Edition, Thomson Publishing.

## **BOOK FOR REFERENCE**

1. A.K. Gupta, S. Chand, “**Management Information System**”, 2010.
2. Dr. S.P. Rajagopalan, “**Management Information System**”, Margham Publications, 2012.
3. P. Mohan, “**Management Information System**”, Himalaya Publishing House, 2006.
4. Elizabeth Hardcastle, “**Business Information Systems**”, Elizabeth Hardcastle & Ventus Publishing, 2008.

[Paul Bocij](#) [Andrew Greasley](#) [Simon Hickie](#), “**Business Information Systems**”, Third Edition, Prentice Hall, 2008.

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI -2**

**DEPARTMENT OF COMPUTER SCIENCE**

**B.Sc./B.COM./B.A./B.B.A.**

**SEMESTER V**

**NON MAJOR ELECTIVE 1: MULTIMEDIA LAB - PHOTOSHOP**

**CODE: U13CS5NMP01**

**HOURS/WEEK: 2**

**CREDITS 2**

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

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**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER V**  
**SKILL BASED ELECTIVE 4: COMPETITIVE EXAMINATION SKILLS**

**CODE: U14CS5SBT04**

**HOURS / WEEK: 2**

**CREDITS 2**

**OBJECTIVE:**

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

**UNIT-I**

**General English:** Tenses- Direct and Indirect Speech- Prepositions – Articles – Adverbs.

**Common Errors & How to avoid them:** Errors in uses of verbs - Errors in uses of Prepositions & Prepositional Phrases.

**UNIT-II**

**Numerical Ability:** Numbers – LCM – HCF Fraction –Average–Problem on Ages – Percentage Profit and Loss — Chain Rule – Time and Work — Simple Interest.

**UNIT-III**

**Verbal Reasoning:** Series completion – Coding and Decoding: Letter Coding, Number Coding, Mixed Letter Coding – Inserting the Missing Character.

**UNIT-IV**

**Non-Verbal Reasoning:** Series: Type1: Five Figure Series, Type 3: Choose the Missing Figure in a Series, Analogy: Type 1: Choose the One Element of a Similarly Related Pair.

**UNIT-V**

**Brain Twisting:** Puzzle Test: Type 1: Classification Type Question, Type 2: Seating / Placing Arrangement, Type 3: Comparison Type Question, Type 4: Sequential Order of Things– Direction Sense Test – Calendars.

## TEXT BOOKS

1. Wren&Martin, "**High School Grammar & Composition**", 2006, S.Chand & Company Pvt.Ltd., New Delhi.

UNIT I : General English : Units 14, 16,24,34,36.

2. J.K.Gangal, "**Competitive English for Professional Courses**", S. Chand & Company Ltd., New Delhi, 2010.

UNIT I : Common Errors & How to avoid them : Units 4, 7

2. R.S.Aggrawal, "**Quantitative Aptitude**", S. Chand & Company Pvt. Ltd., New Delhi. UNIT II: Chapters 1, 2, 6,8,10,11,15,21

3. R.S.Aggrawal,"**Verbal & Non-Verbal Reasoning**", 2007, S.Chand &Company Pvt.Ltd.,New Delhi.

UNIT III : Verbal Reasoning : Chapters 3,4,15

UNIT IV : Non - Verbal Reasoning : Chapters 1, 2

UNIT V : Verbal Reasoning : Chapters 6

4. Dr.Lal, Mishra & Kumar, "**Multi- dimensional Reasoning (Verbal & Non-Verbal)**", Upkar Prakashan Private Company Ltd., New Delhi.

UNIT V : Verbal Reasoning : Chapters 3,7

**HOLY CROSS COLLEGE(AUTONOMOUS), TIRUCHIRAPPALLI-2**

**B.A. /B.Sc. / B.Com. / B.R.Sc./ B.C.A. DEGREE COURSES**

**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, and 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", Vaigarai Pathipagam.
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: MARIAGE 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-Come follow me-I have chosen you-Servant hood- Baptism-Common priesthood- Discipleship-Lay vocation-Lay participation-Lay associates.

**UNIT – IV: CHRISTIAN FAMILY**

Holy family- characteristic of good family – role of families in the church and society- Responsibilities of parents, and children in the family – church – laws towards marriage-Prolife (Abortion, Euthanasia).

**UNIT – V: CONSECRATED LIFE**

“Come and follow me” – special disciples - “I have called you to be mine”- - called to be prophets and agents for God’s Kingdom – nucleus of the church – Eschatological signs of the God’s Kingdom.

**REFERENCES:**

1. Compendium – Catechism for the Catholic Church Published by Vaigarai Publishing House for the Catholic Church of India.
2. 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.



**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI -2.**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER VI**  
**MAJOR CORE 11: COMPUTER NETWORKS**

**CODE: U12CS6MCT11**

**HOURS/WEEK : 6**

**CREDITS 5**

**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 - Communication Satellites - 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 Uyles 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.

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**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. / B.C.A. Computer Science**  
**SEMESTER - VI**  
**MAJOR CORE 12**  
**WEB APPLICATION DEVELOPMENT TOOLS LAB**

**CODE: U14CS6MCP12 / U14CA6 MCP12**

**HOURS/WEEK: 6**  
**CREDITS 5**

**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.

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**DEPARTMENT OF COMPUTER SCIENCE B.C.A. / B.Sc. Computer Science**  
**SEMESTER – VI**  
**MAJOR CORE 13 - WEB APPLICATION DEVELOPMENT**

**CODE: U15CA6MCT13 / U15CS6MCT12**

**HOURS/WEEK : 6**  
**CREDITS 5**

**OBJECTIVE:**

To give an overall view on Basic and Advanced Concepts of HTML and DHTML. To give an overview of Programming Constructs and Elements of JavaScript. To understand the structure of an ASP.NET page and how to connect and work with a database through AP.NET

**UNIT I**

**HTML**

**INTRODUCTION TO HTML:** Hyper Text Markup Language – Commonly Used HTML Commands – Titles and Footers – Text Formatting – Emphasizing Material in a Web Page – Text Styles – Other Text Effects. **LISTS** – Types of List. **ADDING GRAPHICS TO HTML DOCUMENTS:** Using the BORDER, WIDTH, HEIGHT, ALIGN and ALT Attributes. **TABLES:** Introduction – Using the WIDTH, BORDER, CELL PADDING, CELL SPACING, BGCOLOR, COLSPAN and ROWSPAN Attributes. **LINKING DOCUMENTS:** Links - Images as Hyperlinks. **FRAMES:** Introduction to Frames.

**UNIT II**

**FORMS USED BY A WEB SITE:** The Form Object – The Form Object Methods – Other Built-In Objects - User Defined Objects. **DYNAMIC HTML:** Cascading Style Sheets – Class – External Style Sheets – Using the DIV Tag.

**UNIT III**

**JAVASCRIPT**

**INTRODUCTION TO JAVASCRIPT:** JavaScript in Web Pages – Writing JavaScript into HTML – Building up Java Script Syntax - Operators and Expressions - Conditional Checking – Super Controlled – Endless Loops - Functions - Dialog boxes. **JAVASCRIPT DOCUMENT OBJECT MODEL:** JSSS DOM - Understanding Objects in HTML - Browser Objects - Handling Events - **COOKIES**

**UNIT IV**

**ASP.NET**

**ASP.NET LANGUAGE STRUCTURE:** Page Structure – Page - Compiler Directives. **HTML SERVER CONTROLS:** HTML Anchor Control – Tables, Forms and Form Input Controls & Input File Control. **BASIC WEB SERVER CONTROLS:** Label Control - Text Box Control - Button Control - Link Button Control - Image Button Control - Check Box Control - Radio Button Control - Hyperlink Control - Image Control.

## **UNIT V**

**DATA LIST WEB SERVER CONTROLS:** Check box list - Radio button list - Drop down list - List box - Data grid – Repeater controls. **REQUEST AND RESPONSE OBJECTS:** Request object – Response object – Cookies. **WORKINGWITH DATA:** OLEDB connection class, command class, transaction class, data adaptor class, data set class.

### **TEXT BOOKS:**

1. Ivan N. Bayross, “Web enabled Commercial Application Development using HTML, JavaScript, DHTML and PHP”, 4th Revised Edition, BPB Publications, New Delhi, 2010.

**UNIT I :** Chapters 2, 3, 4, 5, 6 & 7.

**UNIT II:** Chapters 10, 12.

**UNIT III:** Chapters 8, 9 & 11.

2. GREG BUCZEK, “ASP.NET Developer’s Guide” TATA McGraw-Hill Edition 2002, Thirteenth Reprint 2011.

**UNIT IV:** Chapters 1, 2 & 3.

**UNIT V:** Chapters 4, 8 & 10.

### **REFERENCE BOOKS:**

1. Gopalan N.P. and Akilandeswari J, “WEB TECHNOLOGY” A Developer’s Perspective 2007 by PHI Learning Private Limited, New Delhi.
2. Manju Bargavi S.K, “Web Technology”, 2008, Sams Publishers, Chennai.
3. Niit building, “Web Applications” , 2005, Prentice Hall of India Private Limited , New Delhi
4. T.A. Powell, Thomas; Schneider, Fritz, JavaScript: The Complete Reference, 2<sup>nd</sup> Edition 2004, TMH.
5. Matt J. Crouch, ASP. NET and VB.NET Web Programming, Pearson Education, 2002.

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**SEMESTER VI**  
**MAJOR ELECTIVE- 3: COMPUTER GRAPHICS**

**CODE: U14CS6MET07**

**HOURS/WEEK : 5**

**CREDITS : 5**

**OBJECTIVE**

This course introduces the concept of Computer Graphics.

**UNIT I**

**OVERVIEW OF GRAPHICS SYSTEMS:** Video Display Devices - Raster-Scan Systems - Random-Scan Systems - Graphics Monitors and Workstations - Input Devices – Input of Graphics Data.

**UNIT II**

**OUTPUT PRIMITIVES:** Points and Lines - Line-Drawing Algorithms - Loading the Frame Buffer - Line Function - Circle-Generating Algorithms – Curve Functions – Fill Area Functions – Character Generation.

**UNIT III**

**ATTRIBUTES OF OUTPUT PRIMITIVES:** Line Attributes - Curve Attributes - Color and Grayscale Levels - Area-Fill Attributes - Character Attributes - Bundled Attributes - Inquiry Functions.

**UNIT IV**

**TWO - DIMENSIONAL GEOMETRIC TRANSFORMATIONS:** Basic Transformations – Matrix Representations and Homogeneous Coordinates - Composite Transformations - Other Transformations - Transformations Between Coordinate Systems - Affine Transformations - Transformation Functions - Raster Methods for Transformations - Window to View Port 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 - Three-Dimensional Graphics Packages.

**THREE DIMENSIONAL VIEWING:** Projections - Clipping.

## **TEXT BOOK**

1. Donald Hearn & M.Pauline Baker, “**COMPUTER GRAPHICS**”, 2005, Prentice Hall of India, New Delhi.
  - UNIT I** : Chapters 2.1 – 2.5, 2.6,8.2
  - UNIT II** : Chapters 3.1 – 3.5, 3.9, 3.12, 3.14
  - UNIT III** : Chapters 4.1 – 4.7
  - UNIT IV** : Chapters 5.1 – 5.8, 6.3, 6.5 – 6.8
  - UNIT V** : Chapters 9.1 – 9.2, 12.3, 12.5

## **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. Newman William M & Sproull Robert F., “**Principles of Interactive Computer Graphics**”, 2001, Tata McGraw Hill Publishing Company Limited, New Delhi.
5. Steven Harington, “**Computer Graphics**”, 2003, Tata McGraw Hill International Editions, New Delhi.

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**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER VI**  
**MAJOR ELECTIVE- 3: ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEM**

**CODE: U14CS6MET08**

**HOURS/WEEK : 5**

**CREDITS : 5**

**OBJECTIVE**

To develop a basic understanding of the building blocks of AI as presented in terms of intelligent agents.

**UNIT I**

Concept of intelligence, Artificial intelligence, definition turning test, areas of application. Search techniques, state space, Production rules, problem characteristics. Production system characteristic, depth first, breadth first search methods.

**UNIT II**

Heuristic search method, generate and test, hill climbing, best first method, graph search, AND OR search methods, constraint satisfaction, backtracking. Introduction to list and string processing, concept of knowledge, Logic, prepositional and predicate calculus, resolution.

**UNIT III**

Semantics nets, frames, conceptual dependency, scripts, Monotonic reasoning, logical reasoning induction, default reasoning, minimalist reasoning, statistical reasoning, Baye's theorem, certainty factors, Dempster Shafer theory, Fuzzy logic.

**UNIT IV**

Concept of learning, Knowledge acquisition, rote learning, discovery, analogy.

**UNIT V**

Concept of expert system, need for an expert system, Component and categories of an expert system, Stages in the development of an expert system.



## **TEXT BOOKS**

1. Elaine rich & Kevin Knight: Artificial Intelligence and Expert System, PHI.
2. Charniak, E.: Introduction of Artificial Intelligence, Narosa Publishing House.
3. Winton. P.H.: LISP, Narosa Publishing House.

## **REFERENCE BOOKS**

1. Data W. Patterson, Introduction to Artificial Intelligence and Expert Systems, PHI, 2009.
2. Stuart Russell and Peter Norvig, Artificial Intelligence A Modern Approach, Second Edition, Pearson Education Series, 2003.
3. Keith Darlington, The essence of Expert Systems, Pearson First Impression, 2011.
4. Marcellus: Expert System Programming in TURBO PROLOG Prentice-Hall Inc. 1989.
5. Clark, K. L. & McCabe, F.G.: Micro-Prolog Prentice-Hall Inc. 1987

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**B.Sc./B.COM./B.A./B.B.A**  
**SEMESTER VI**  
**NON MAJOR ELECTIVE 2: ANIMATION LAB - FLASH**

**CODE: U13CS6NMP02**

**HOURS/WEEK : 2**  
**CREDITS            2**

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.**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**B.Sc. COMPUTER SCIENCE**  
**SEMESTER VI**  
**SKILL BASED ELECTIVE 5: OFFICE TOOLS – LAB**

**CODE: U13CS6SBP05**

**HOURS/WEEK : 2**

**CREDITS 2**

## **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. Sheet Name
- 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 presentation viewer**

# **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**



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**DEPARTMENT OF COMPUTER SCIENCE**  
**III B.C.A/B.A/B.Sc/B.Com/BBA/B.R.Sc**  
**SEMESTER VI**  
**SKILL BASED ELECTIVE 6: RESEARCH METHODOLOGY**

**CODE: U13DS6SBT06**

**HOURS/WEEK : 2**

**CREDITS : 2**

**Objectives:**

To help the students develop research skills

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

**UNIT I**

**Introduction to Research**

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

**UNIT II**

**Data Collection**

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

**UNIT III**

**Plan and Execution**

Methodology –Plan and execution-Analysis –Documentation

**UNIT IV**

**Format and Presentation of Project Report**

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

**UNIT V**

**Project**

Project work

**REFERENCE BOOKS**

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: New Age 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 COURSES**

**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, and 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”, Vaigarai Pathipagam.
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: MARIAGE 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-Come follow me-I have chosen you-Servant hood- Baptism-Common priesthood-Discipleship-Lay vocation-Lay participation-Lay associates.

**UNIT – IV: CHRISTIAN FAMILY**

Holy family- characteristic of good family – role of families in the church and society- Responsibilities of parents, and children in the family – church – laws towards marriage-Prolife (Abortion, Euthanasia).

**UNIT – V: CONSECRATED LIFE**

“Come and follow me” – special disciples - “I have called you to be mine”- - called to be prophets and agents for God’s Kingdom – nucleus of the church – Eschatological signs of the God’s Kingdom.

**REFERENCES:**

1. Compendium – Catechism for the Catholic Church Published by Vaigarai Publishing House for the Catholic Church of India.
2. 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.