

HOLY CROSS COLLEGE
(AUTONOMOUS),
TIRUCHIRAPPALLI
DEPARTMENT OF BOTANY
B.Sc BOTANY
SYLLABUS 2014-15

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2
DEPARTMENT OF BOTANY
CHOICE BASED CREDIT SYSTEM
UG COURSE PATTERN(2014 – 2015)

Sem	Part	Course	Title of the course	Code	Hrs/week	Credit	Mark	
I	I	Language	Tamil Paper I/ Hindi Paper I/ French PaperI	U14TL1TAM01 U14HN1HIN01 U13FR1FRE01	6	3	100	
	II	English	English Paper-I	U10EL1GEN01	6	3	100	
	III	Major Core- 1	Phycology, Mycology and Plant Pathology (Theory cum Lab)	U11BO1MCT01	7	5	100	
		Allied -1	Allied Optional Paper I	U11BO1AOT01	4	4	100	
		Allied – 2	Allied Optional Paper II	U11BO1AOT02	4	3	100	
	IV	Environmental Studies	Environmental Studies	U14RE2EST01	2	2	100	
		Value Education	Ethics /Bible Studies/ Catechism	U12VE2LVE01 U12VE2LVB01 U12VE2LVC01	1	-	-	
			TOTAL		30	20	600	
II	I	Language	Tamil Paper II/ Hindi Paper II/ French Paper II	U14TL2TAM02 U14HN2HIN02 U13FR2FRE02	5	3	100	
	II	English	English Paper-II	U10EL2GEN02	6	3	100	
	III	Major Core- 2	Bryology, Pteridology and Gymnospermology	U11BO2MCT02	6	6	100	
		Major Core - 3	Practical 1	U11BO2MCP03	4	3	100	
		Allied – 3	Allied Paper III	U11BO2AOT03	4	3	100	
	IV	Skill Based Elective -1	Soft Skill Development	U14RE2SBT01	2	2	100	
		Skill Based Elective -2	Rural Enrichment and Sustainable Development	U08RE2SBT02	2	2	100	
		Value Education	Ethics I/Bible Studies I/ Catechism I	U12VE2LVE01 U12VE2LVB01 U12VE2LVC01	1	1	100	
				TOTAL		30	23	800
	III	I	Language	Tamil Paper III/ Hindi PaperIII/ French Paper III	U14TL3TAM03 U14HN3HIN03 U14FR3FRE03	6	3	100
II		English	English Paper-III	U10EL3GEN03	6	3	100	
III		Major Core – 4	Histology,Palynology, Embryology and Seed Technology	U14BO3MCT04	5	5	100	
		Major Core – 5	Practical 2	U11BO3MCP05	5	5	100	
		Allied – 4	Paper I -Plant Diversity and Plant Physiology (Compulsory)	U11BO3ACT04	4	3	100	
IV		Skill Based Elective - 3	Biological skills for Physical Sciences (Theory cum Lab)for Physics students	U13BZ3SBT03	2	2	100	
		Gender Studies	Gender Studies	U12WS3GST01	1	1	100	
		Value Education	Ethics /Bible Studies / Catechism	U12VE4LVE02 U12VE4LVB02 U12VE4LVC02	1	-	-	
			TOTAL		30	22	700	
IV	I	Language	Tamil Paper IV/ Hindi PaperIV/ French PaperIV	U14TL4TAM04 U14HN4HIN04 U14FR4FRE04	5	3	100	
	II	English	English Paper-IV)	U13EL4GEN04	6	3	100	
	III	Major Core – 6	Cell and Molecular biology, Biometrics and Bioinformatics (Theory cum Lab)	U11BO4MCT06	5	5	100	
		Major Elective - 1	Basics and applied Microbiology/ Forest Resources and their utilization	U11BO4MET01/ U11BO4MET04	5	5	100	
		Allied – 5 (Compulsory)	Paper-II Economic Botany and Applied Plant Biotechnology	U11BO4ACT05	4	4	100	
		Allied – 6 (Compulsory)	Paper-III.Practical-1. Plant Diversity,Histology, Embryology, Taxonomy, Physiology, Ecology and Economic Botany	U11BO4ACP06	4	3	100	

	IV	Value Education	Ethics II/Bible Studies II/ Catechism II	U12VE4LVE02 U12VE4LVB02 U12VE4LVC02	1	1	100	
			TOTAL		30	24	700	
V	III	Major Core – 7	Genetics and Plant Breeding	U11BO5MCT07	5	4	100	
		Major Core - 8	Ethnobotany, Morphology and Taxonomy of Angiosperms	U11BO5MCT08	5	4	100	
		Major Core – 9	Pharmacognosy	U11BO5MCT09	5	4	100	
		Major Core – 10	Practical 3- Genetics, Plant Breeding Plant Morphology, Taxonomy and Pharmacognosy	U11BO5MCP10	5	4	100	
		Major Elective 2	Plants in Human Health Care/ Horticulture, Plant Pathology and Plant Protection	U11BO5MET02/ U11BO5MET05	5	5	100	
	IV	Non Major Elective –1				2	2	100
		Skill Based Elective-4	Biological skills for Chemical Sciences (Theory cum Lab)for chemistry students	U13BZ5SBT04		2	2	100
	IV	Value Education	Ethics /Bible Studies / Catechism	U13VE6LVE03 U12VE6LVB03 U12VE6LVC03	1	-	-	
			TOTAL		30	25	700	
VI	III	Major Core -11	Plant Physiology and Biochemistry	U11BO6MCT11	6	5	100	
		Major Core -12	Plant Tissue Culture, Genetic Engineering and Nanotechnology	U11BO6MCT12	6	5	100	
		Major Core -13	Practical 4 - Plant Physiology, Biochemistry and Plant tissue culture	U11BO6MCP13	6	5	100	
		Major Elective 3	Instrumentation and Botanical Techniques / Food Science	U11BO6MET03/ U11BO6MET06	5	5	100	
	IV	Non Major Elective –2				2	2	100
		Skill Based Elective-5	Techniques in Botany	U13BO6SBP05		2	2	100
		Skill based Elective - 6	Research Methodology	U13DS6SBT06		2	2	100
		Value Education	Ethics /Bible Studies / Catechism	U13VE6LVE03 U12VE6LVB03 U12VE6LVC03	1	-	-	
		V	Extension Activity	RESCAPES -Impact study of project	U08RE6ETF01	-	1	100
			TOTAL		30	27	800	
GRAND TOTAL(I-VI SEMESTERS)					180	141	4300	

**List of Non-Major Elective Courses
Offered by the Department of Botany to Other Students
UG**

Sem	Part	Course	Title of the course	Code	Hrs/ week	Credits	Marks
V	IV	Non Major Elective -1	Food Science & Technology	U11BO5NMT01	2	2	100
VI		Non Major Elective -2	Herbal Remedies	U11BO6NMT02	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 : U14TL1TAM01

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
தமிழாய்வுத்துறை வெளியீடு

- கலைச்சொற்கள்

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 2e édition)]

(For candidates admitted 2013 onwards)

HRS/WEEK : 6

CODE : U13FR1FRE01

CREDIT : 3

MARKS : 100

Unit 1 Parcours d'initiation ; Vous comprenez

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

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

Unit 2 Au travail!

La conjugaison des verbes du 1^{er} 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.
2015 - 2016

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

HOURS – 6 PER WEEK
CODE : U10EL1GEN01

CREDIT : 3

OBJECTIVES

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

UNIT I - I, ME, MYSELF

Listening for specific information in instructions and directions

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

Reading for comprehension of routine work.

Writing -Paragraph guided

Grammar- Articles, Prepositions, Punctuation

Vocabulary-Meanings, Synonyms, Antonyms

Composition –GuidedCreative writing

TEXTS

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

UNIT II -MY FAMILY AND FRIENDS

Listening to identify the persons/ places/ things from descriptions

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

Reading to get specific information and to analyze characters

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

Grammar -adjectives and verbs

Vocabulary-synonyms and antonyms in context

Composition - Guided paragraph

TEXTS

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

UNIT III -THE WORLD AROUND ME

Listening To identify specific information

Speaking –Discussing and expressing opinions

Reading To infer meaning

Writing Descriptive and Diary writing

Grammar Uses of 'be' Verbs – subject verb concord

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

Composition - Essay writing

TEXTS

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

UNIT IV - MY CONCERN AND RESPONSIBILITIES

Listening to short speeches and getting main concern- Global comprehension

Speaking Expressing opinions, concerns and responsibilities

Reading To detect one's perspective

Writing Debate and Dialogue

Grammar Sentence patterns (5 basic types)

Vocabulary Appropriate words in the context ,coinage of new words , use of phrases

Composition-Imaginative writing

TEXTS

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

UNIT V - MY PROFESSIONAL WORLD

Listening to short profile to get details –global comprehension

Speaking Discussion on secrets of success learnt from success stories

Reading to infer meaning – to trace the development and analyze the ratio of development

Writing resume and E-mail writing

Grammar- Four Types of sentences

Vocabulary-Idioms and phrases- meaning

Composition – Formal and imaginative writing

TEXTS

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

Prescribed Book:

English for Communication –PoGo publication Trichy

(for candidates admitted from 2014 onwards)
HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI – 2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2014 onwards
SEMESTER I
MAJOR CORE 1 – PHYCOLOGY, MYCOLOGY AND PLANT PATHOLOGY
(THEORY CUM LAB)

Hours 7

Credit 5

Code: U11BO1MCT01

Marks:100

Course Objectives:

This includes classification, detailed study of the genera belonging to various classes of algae and fungi, their habitat, thallus structure, reproduction and economic importance. Use of algae as biofertilizers and as pollution indicators are given in this paper. The pathology of higher plants are also included.

UNIT – I Phycology:

Outline classification of Algae (Fritsch, 1979). Salient features of various classes of algae. Thallus organization in algae. Structure, reproduction and life cycle patterns of the following genera: Nostoc, Chlamydomonas, Volvox, Chlorella, Ulva and Cladophora.

UNIT – II

Structure, reproduction and life cycle patterns of the following genera: Caulerpa, Pinnularia, Dictyota and Polysiphonia. Techniques in algae: Cultivation of freshwater algae – Spirulina (SCP). Application of algal bio-fertilizer in crop improvement – BGA. Agar agar and Diatomite – sources and uses.

UNIT – III Mycology:

Outline classification of fungi (Ainsworth, 1971). Salient features of the main classes of fungi. Morphology and reproduction of the following genera: Albugo, Saccharomyces and Penicillium.

UNIT – IV

Morphology and reproduction of the following genera: Peziza, Puccinia and Polyporus. Techniques in fungi: Cultivation and identification of fungi – soil, water and spoiled foods. Uses of fungi : edible mushroom - Pleurotus, antibiotic – Penicillin.

UNIT – V Plant Pathology:

Concept and pathogenesis. Etiology, causative organism, symptoms and control measures of the following diseases. Fungal disease - red rot of sugar cane, tikka disease of groundnut, bacterial disease – citrus canker and viral disease – tobacco mosaic.

Practical:

Algae: Identification and drawing of the algal forms: Nostoc filament, Volvox coenobium with daughter colony, Cladophora filaments, Caulerpa thallus, Dictyota thallus with oogonial sorus and Polysiphonia with carposporophyte. Sectioning: Ulva thallus and Caulerpa rhizome

Fungi: Observation and drawing of the fungal forms: Albugo- infected crucifer leaf, Saccharomyces, Penicillium conidia, Peziza apothecium, Polyporus basidiocarp, Puccinia infected leaves showing uredia, telia, pycnia and aecidia.

Sectioning: Albugo infected leaves.

Pathology: Collection, observation and submission of red rot of sugarcane, tikka disease of groundnut, citrus canker and tobacco mosaic disease.

References

Text Books:

1. Pandey, B. P. 1993. Text Book of Botany, Vol –1. S. Chand and Company Ltd, New Delhi.
2. Vashishta, B. R. 1984. Botany for degree students. Vol. 1 – Algae. S. Chand and Company Ltd, New Delhi.
3. Vashishta, B. R. 1984. Botany for degree students Fungi. S. Chand and Company Ltd, New Delhi.
4. Vashishta, B. R. 2001. Botany for degree students Bryophytes. S. Chand and Company Ltd, New Delhi.

Reference Books:

1. Alexopoulos, C. J. 1971. Introductory Mycology – John Wiley and Sons Inc. New York, London.
2. Kumar, H. D. and Singh, H. N. 1982. A text Book on Algae, Affiliated East West Press Pvt. Ltd. New Delhi.

3. Smith, G. M. 1978. Cryptogamic Botany Vol – 1. Tata Mc Graw- Hill Pub. Company Ltd. New Delhi.
4. Watson, E. V. 1974. The structure and life of Bryophytes. B.I. Publication, Bombay.
5. Webster, J. 1993. Introduction to Fungi – Cambridge University press, Cambridge.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2014 onwards
SEMESTER I

A1 - ALLIED OPTIONAL PAPER I – BIODIVERSITY CONSERVATION AND MANAGEMENT

Hours 4
Credits 4

Code: U11BO1AOT01
Marks:100

Course Objectives:

The aim of the study of biodiversity conservation is to protect the existing flora and fauna for enhancing the beauty of our planet earth mother and to pass it on for our future generation with all the conserved resources for maintaining environment friendly sustainable development.

UNIT - I Biodiversity-

Definition- Types of biodiversity – protected areas. Biosphere reserves – national parks and wild life sanctuaries.

UNIT – II

Biodiversity assessment and inventory programme: Morphological and molecular characterization of biodiversity – methods for species identification and classification.

UNIT – III

Conservation of biodiversity – Conservation through in-situ and ex-situ methods. National and international initiatives – IUCN categories – Endangered, Threatened, Vulnerable and extinct species.

UNIT – IV

Biodiversity informatics – Documenting biodiversity – Biodiversity databases – Red book – Blue book and green book – Biodiversity registers.

UNIT – V

Global biodiversity information System – species 2000 and Tree of life – Overview of the UNEP/GEF biodiversity data management project (BDM) – CBD and bioethics.

References

Text books:

1. Agarwal K.C., Biodiversity.
2. Kumar, 2005, Biodiversity Principles and Conservation, International Book Distributors, Dehradun.

Reference Books:

1. Kevin J. Canton and John I Spicer, An introduction of Biodiversity.
2. Global Biodiversity, 1992, Status of the Earth Living Resources, Water Conservation and monitoring Center, Chapman hall, London.
3. Forey. P. L., Humphries C.J. and Vane R.I., Wright (eds, 1994, Systematics and Conservation Evolution.
4. Hawksworth D.I., 1995, (ed), Biodiversity, Measurement and Estimation, Chapman and Hall, London.
5. Kandy A.K., 2007, Biodiversity Conservation and Legal Aspects, International Book Distributors, Dehradun.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2014 onwards
SEMESTER I
A2 - ALLIED OPTIONAL PAPER II - MUSHROOM CULTIVATION

Hours 4
Credits 3

Code: U11BO1AOT02
Marks: 100

Course Objectives:

It deals with the importance of mushroom in the nutritious diet. It also gives knowledge on different steps involves in the cultivation of edible mushroom, post harvest technology and various recipes of mushrooms. It also encourages students to produce mushrooms at their home level (micro entrepreneurship).

UNIT – I

Introduction: Life cycle of common edible mushrooms – Agaricus and Pleurotus.

UNIT –II

Construction of mushroom cultivation sheds. Cultivation – isolation, spawn production and growth media.

UNIT – III

Mushroom cultivation - spawns running and harvesting of mushrooms and nutritive value of mushrooms.

UNIT – IV

Post harvest technology: Freezing, dry freezing, drying, packaging, marketing, recipes of mushrooms.

UNIT – V

Scenario of mushroom cultivation – prospects and scope in small scale industry.

References:

1.Sharma, B.B. 1993. A Guide to home Gardening. Ministry of information and broadcasting, Govt. of India.

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

Hrs– 2/Week

CREDITS : 2

Unit I–Awareness and Natural Resources

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

Unit II–Ecosystems and Biodiversity

Ecosystem–concepts, structure and types–concept of food chain 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

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 : U14TL2TAM02
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, வளர்வும், 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

- தமிழாய்வுத்துறை வெளியீடு

தமிழ் இலக்கிய வரலாறு

- தமிழாய்வுத்துறை வெளியீடு

கீதாரி

- சு.தமிழ்ச்செல்வி

கடித இலக்கியம்

- 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, Meritheertha 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 :

- | | |
|--|---|
| <input type="checkbox"/> Naveen Gadhya Chayanika | – D.B.H.P. Sabha Publishers, Chennai-17 |
| <input type="checkbox"/> Sathyameva Jayathe | – D.B.H.P. Sabha Publishers, Chennai-17 |
| <input type="checkbox"/> General Grammar | – D.B.H.P. Sabha Publishers, Chennai-17 |

HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI – 2

DEPARTMENT OF FRENCH

SYLLABUS

SEMESTER II

PART I - LANGUAGE - FRENCH PAPER II [GRAMMAR, CIVILISATION &

TRANSLATION (ÉCHO A1 2e édition)]

(For candidates admitted 2013 onwards)

HRS/WEEK : 5

CODE : U13FR2FRE02

CREDIT : 3

MARKS : 100

Unit 1 Quelle journée !

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

Unit 2 Qu'on est bien ici !

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

Unit 3 Souvenez-vous ?

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

Unit 4 On s'appelle ?

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

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

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

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

TEXT BOOKS :

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

(for candidates admitted from 2014 onwards)
HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2.
2015 - 2016
I B.A., B.Sc., B.Com., B.R.Sc., B.C.A., B.B.A.,
SEMESTER II
PART II – ENGLISH II - GENERAL ENGLISH PAPER II

HOURS – 6 PER WEEK
CODE : U10EL2GEN02

CREDIT : 3

OBJECTIVES

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

UNIT I – SELF

Listening- Specific information from demonstration and instructions, transfer of information.

Speaking - Sharing expressions, dreams and expressing opinions.

Reading - Skimming and Scanning for specific information, reading for local comprehension.

Writing - Story Writing

Grammar - Articles and Sentence Pattern

Vocabulary - Meanings, Synonyms, Antonyms

Composition - Transfer of information: Paragraph to Bar graph/pie chart
General Essay - Courage is the key to success

TEXTS

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

UNIT II – STRENGTHS

Listening - Listening to a process

Speaking - Telephone Etiquette

Reading - Loud reading with pause, intonation and expression in dialogue form

Writing - Writing about oneself (strengths & weaknesses, Have's & Have not's)

Grammar- Subject verb agreement, Prepositions

Vocabulary- One word substitute in the context

Composition- Letter Writing - informal letters
General essay – A bird in hand is worth two in bush.

TEXTS

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

UNIT III - POSITIVE SHORTCOMINGS

Listening - Listening to facts and opinions and trying to differentiate it

Speaking - Pair Work – about have's & have not's, understanding the strengths and overcoming the weaknesses

Reading - Reading newspapers, articles, magazines, anecdotes for global and specific in analytical thinking

Writing - Filing Complaints, Travelogues

Grammar - Tenses, Direct and Indirect Speech

Vocabulary - Compound words

Composition - Dialogue Writing
General essay – Adversity is the seed of success.

TEXTS

1. *The Ballad of father Gilligan* by Alexander Pope (poem)

2. *Six thinking hats* by Edward de Bono (prose)
3. *A cup of tea* by Katherine Mansfield (Short Story)
4. An extract from Shakespeare's *As you like it* (Act II Scene I lines 12 -17)

UNIT IV POTENTIALS

Listening - Listening to the description of personalities, historical places and monuments

Speaking - Group Discussion – Totally controlled, partially controlled, Free

Reading - Parallel Reading, reading for pleasure

Writing - Letter writing – formal letters

Grammar - Adjectives, Degrees of Comparisons

Vocabulary - Idioms and Phrases

Composition - Debates and Discussions

General essay – My potentials

TEXTS

1. *The flower* by Tennyson (poem)
2. *How to avoid argument* by Sam Horn (prose)
3. *The child is father of man* by Wordsworth (poem)
4. An extract from *Pygmalion* by G.B. Shaw

UNIT V ACHIEVEMENTS

Listening - Listening to comparisons and arguments

Speaking - Performance

Reading - In-depth reading

Writing - Script writing of story to play

Grammar - Question Tags

Vocabulary - Homophones

Composition - Essay Writing

General essay - The reward of hard work.

TEXTS

1. *The Garden* by Dom Moraes (poem)
2. *On saying please* by A.G. Gardiner (prose)
3. *One good turn* by A.E.M. Bayliss (play)

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HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2014 onwards
SEMESTER II
MAJOR CORE - 2 BRYOLOGY, PTERIDOLOGY AND GYMNOSPERMOLOGY

Hours 6
Credits 6

Code: U11BO2MCT02
Marks:100

Course Objectives:

The nature of Bryophytes, Pteridophytes and Gymnosperms are illustrated with suitable examples in this paper. The phenomenon heterospory, stelar evolution are highlighted. Life history of Gymnosperms members Pinus and Gnetum are dealt in detail. It gives added information about types of fossils and fossilization and carbon dating.

UNIT – I Bryology:

Outline classification of Bryophytes (Rothmaler, 1951). Salient features of the main classes of Bryophytes. Structure and reproduction of Hepaticopsida - Marchantia, Anthocerotopsida - Anthoceros, and Pteropsida - Funaria (development excluded). Ecology of Bryophytes.

UNIT - II Pteridology:

Classification of pteridophytes (Reimers, 1975). Salient features of main classes of Pteridophytes. Morphology, structure, reproduction and life cycle of Selaginella, Equisetum and Adiantum.

UNIT – III

Morphology, structure, reproduction and life cycle of Marsilea. Evolution of heterospory and seed habit. Stelar evolution. Economic importance of Pteridophytes. Fossils and Fossilization. Types of fossils. Geological time scale. Significance of fossils, oil deposits. Geological distribution and reconstructed structure - form genera Rhynia and Calamites.

UNIT – IV Gymnospermology:

Classification of gymnosperms (K.R. Sporne, 1965). Salient features of main classes of gymnosperms. Morphology, structure and reproduction of Pinus.

UNIT – V

Morphology, structure and reproduction of Gnetum. Angiospermic characters of Gnetum, Economic importance of Gymnosperms. Geological distribution and reconstructed structure - form genera Williamsonia.

References

Text Books:

1. Henry N. Andrews, Jr. 1961. Paleobotany. John Wiley and Sons, Inc., New York, London.
2. Pandey, B. P. 1997. A text Book of Botany Vol. II . S. Chand and Company Ltd, New Delhi.
3. Vashista, B. R. Pteridophyta. 1988. S. Chand and Company Ltd, New Delhi.
4. Vashista, B. R. Gymnosperms. 1988. S. Chand and Company Ltd, New Delhi.

Reference Books:

1. Rashid, A. 1976. An introduction to Pteridophytes. Vikas Publishing House Pvt. Ltd, New Delhi.
2. Sporne, K. R. 1965. Morphology of Gymnosperms. Hutchinson and Company Ltd. London.
3. Sporne, K. R. 1970. Morphology of Pteridophytes. Hutchinson and Company Ltd. London.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2014 onwards
MAJOR CORE – 3 PRACTICAL- 1

Hours 4
Credits 3

Code: U11BO2MCP03
Marks:100

Course Objectives:

This paper deals with the thallus organization, internal and the reproductive structures of bryophytes, pteridophytes and gymnosperms

UNIT – I Bryology:

Identification and drawing of morphological structure of Marchantia, Anthoceros, Funaria. Identification of permanent slides (Marchantia- thallus V.S, sporophyte L.S, Anthoceros – Capsule-L.S and Funaria- antheridial head, archegonial head, capsule L.S)

UNIT – II Pteridology:

Study of the morphology, anatomy and reproductive structures of the following: Selaginella, Equisetum and Adiantum.

UNIT – III

Study of the morphology, anatomy and reproductive structures of the following: Marsilea. Spore germination studies in Nephrolepis. Observation and study of permanent slides of fossil plants – Rhynia and Calamites.

UNIT – IV Gymnospermology

Morphological and anatomical study of the vegetative and reproductive parts of Pinus

UNIT – V

Morphological and anatomical study of the vegetative and reproductive parts of Gnetum.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2014 onwards

A3 - ALLIED OPTIONAL PAPER III – STRESS PHYSIOLOGY

Hours 4
Credits 3

Code: U11BO2AOT03
Marks:100

Course Objectives:

To study the physiological changes in relation to stress on plants.

UNIT – I Stress:

Definition, components of stress abiotic and biotic stresses. Causes of stresses: environment and manmade stresses. Consequences of stress.

UNIT – II Water stress:

Water deficit, water use efficiency, role of stomata, adaptation to water stress. Role of growth regulators in water stress. Antitranspirants: metabolism of plants during water stress.

UNIT – III Flooding:

Effect of flooding on growth and development. Adaptation of plants to flooding. Salt stress: saline and alkaline soils. Salt stress injury: mechanism of salt tolerance.

UNIT – IV Temperature stress:

High temperature. Heat shock protein: Chilling and frost injury, anti-freeze agents. Mechanism of temperature stress tolerance.

UNIT – V Light and oxidative stress:

Metabolism during stress. Production of osmoregulators - proline, glycine betaine. Production of antioxidants. General aspects on genes regulating various stresses.

References

Text Books:

1. Kumar, 2005, Plant Physiology Fundamental and Applications, M/S. IBD Publishers, New Delhi.
2. Purohit, 2006, Plant Physiology, International Book Distributors, Dehradun.

Reference Books:

1. Lincoln Taiz and Eduardo Zeiger, 1998, Plant Physiology, Sinauer Associates, Inc. Sunderland Massachusetts.
2. Hopkins W.G., 1995, Introduction to plant physiology, John Wiley and Sons Inc.
3. Salisbury F.B and Cleon Ross, 1994, Plant Physiology.
4. Levitt J., 1984, Response of plants to environmental stresses.

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-E-mails 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, 1st Ed., GracePublishers,

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

**HOLY CROSS COLLEGE (AUTONOMOUS), TIRUCHIRAPPALLI–
2B.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 COURSE LIFE
ORIENTED EDUCATION
ETHICS – I: RELIGION AND VALUE SYSTEMS

HRS /Wk:1
CREDITS : 1

CODE: U12VE2LVE01
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:U12VE2LVBO1
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,Micah5:2)
- The Birth and Ministry of John the Baptist (Luke 1:1-80,Mat3:1-17,14:1-12)
- 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,John2:1-12)
- Parables (Luke6:46-49,8:4-15,10:25-37,15:1-32)
- 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,Mark14:32-42)
- Rich and Poor (Luke 16:19-31,21:1-4)
- Women Liberation (John4:1-30,8:1-4)
- Women in the New Testament
- Mary(Mother of Jesus)-(Luke 1:27-35, John 2:1-12, 19:35, Acts1:13-14)
- 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 (Acts2:42-47,4:1-37,5:1-11)
- 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 HolyBible
- 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 savinglove.

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:

2. Catechism of the Catholic Church published by Theological Publications in India for the Catholic Hierarchy of India,1994
3. The Holy Bible Revised Standard Version with Old and New Testaments Catholic Edition forIndia.
4. 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 : U14TL3TAM03
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

CODE : U14FR3FRE03

CREDIT : 3

MARKS : 100

Unit 1 Vivement demain !

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

Unit 2 Tu as du boulot ?

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

Unit 3 Qu'en pensez-vous?

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

Unit 4 C'est tout un programme !

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

Unit 5 On se retrouve

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

TEXT BOOKS :

ECHO A2 – METHODE DE FRANÇAIS & CAHIER PERSONNEL D'APPRENTISSAGE

Authors: J. Girardet and J. Pécheur

Publication: CLÉ INTERNATIONAL, 2010.

(for candidates admitted from 2014 onwards)
HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2.
2015 - 2016
I B.A., B.Sc., B.Com., B.R.Sc., B.C.A., B.B.A.,
SEMESTER III
PART II – ENGLISH III - GENERAL ENGLISH PAPER III

HOURS – 6 PER WEEK
CODE :U10EL3GEN03

CREDIT : 3

OBJECTIVES

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

UNIT I

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

UNIT II

The Avenger :*Anton Chekov*

UNIT III

Know When to Say ‘It’s None of Your Business’: *Mark McCormack*

UNIT IV

The Second Crucifixion: *Larry Collins and Dominique Lapierre*

UNIT V

General Essay – 5 topics given

Idioms and Phrases - 20 Idioms and phrases given

BOOKS FOR REFERENCE

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

List of Idioms and Phrases:

1. To tuck in
2. In tune with
3. To frown upon
4. In favour of
5. In vogue
6. To gloat at
7. On the contrary
8. Prompted by
9. To pale to nothing
10. To wax enthusiastic
11. To figure one out
12. Crystal clear

13. Grey area
14. To have second thoughts
15. On red alert
16. On a fool's errand
17. To be taken aback
18. To storm
19. Trouble spots
20. Flood of humanity

GENERAL ESSAY TOPICS

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

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI
DEPARTMENT OF BOTANY
B.Sc. SYLLABUS 2014 onwards
SEMESTER III

MAJOR CORE - 4 HISTOLOGY, PALYNOLOGY, EMBRYOLOGY AND SEED TECHNOLOGY

Hours 5
Credits 5

Code: U14BO3MCT04
Marks: 100

Course Objectives:

This paper highlights the important aspects of plant anatomy and embryology. The anatomical features of the root, stem and the leaves are explained. Embryology deals with the developmental stages of the plant. The development of the anther, ovule, male and female gametophytes and embryo are dealt with.

UNIT – I Plant Histology:

Tissue systems in plants: Introduction of various tissue systems in plants. Meristems – classification based on origin, position and function. Developmental anatomy: Organisation and importance of Shoot apex (Tunica Corpus theory) and Root apex (Korper – Kappe theory). Microscopic studies on the distribution, structure, types and functions of stomatal types (Dicots and Monocots), sclereids, raphides (Colocasia), cystolith (Ficus leaf) and starch grains (rice). Laticifers: Distribution, structure and types.

UNIT – II

Study of the primary structure of Dicot stem (Vernonia), root (Cicer) and leaf (Sunflower) and Monocot stem (Bamboo) and root (Canna). Nodal types of Dicot (Uni, tri, multilacunar). Study of normal secondary growth in Dicot stem and root (Vernonia). Study of Anomalous secondary structures in the stem of Bignonia, Boerhaavia and roots of Tinospora. Ecological anatomy: Study of adaptive anatomical features of Hydrophyte (Nymphaea petiole) and Xerophyte (Nerium leaf).

UNIT – III Palynology:

Introduction and scope of palynology. Pollen grains – morphology, aperture types, Number Position and Characters (NPC) classification (Erdtman, 1969). Structure of pollen wall: wall features, sporopollenin, stratification and ornamentation/sculpturing. Pollenkitt. Applied palynology: Basic concepts of palaeopalynology, aeropalynology and forensic palynology.

UNIT – IV Embryology:

Anther structure and development. Microsporogenesis. Male gametophyte and its development. Types and structure of ovule. Megasporogenesis, Structure and development of female gametophyte. Types of embryo sac with special reference to Polygonum type. Fertilization: Pollen germination, pollen tube- growth, entry into ovule and discharge and Double fertilization. Types, structure and function of endosperm (Nuclear, Helobial, Cellular and Ruminant). Structure and development of dicot embryo (Capsella) and monocot embryo (Zea mays).

UNIT – V

Seed technology: Structure of seed. Types of seed – monocot, dicot, endospermic and perispermic. Seed storage: Storage behaviour of seeds based on maturation drying – orthodox and recalcitrant seed. Storage reserves in seeds – carbohydrates, proteins and lipids. Seed longevity – Factors affecting seed longevity in seed storage. Seed drying (sun drying & force air drying). Seed viability – tetrazolium test and its advantages & disadvantages. Concept of seed certification and specific crop standard for seed certification. Seed inspection, seed legislation and seed law enforcement (quarantine).

References

Text Books:

1. Esau, K. 1953. Plant Anatomy. John Wiley and Sons, INC, New York, London.
2. Pandey, B. P. 1984. Plant Anatomy. S. Chand and Company Ltd, New Delhi.
3. Maheswari, P. 1950. An introduction to the Embryology of Angiosperms. Vikas Publishing House Pvt. Ltd,

Reference Books:

1. Cutter, E. G. 1978. Anatomy part I – The English Language Book Society and Edward Arnolds Ltd. London.
2. Eames, A. J. and Mac Daniels, I. H. 1947. An introduction to plant Anatomy. MC Graw and Hill Book Company, INC., New York, London.
3. Agarwal, S. B. 1972. Embryology of angiosperms. Sahitya Bhavan, Agra.
4. Bhojwani, S. S. and Bhatnagar, S. P. 1978. The Embryology of Angiosperms. Vikas Publishing House Pvt. Ltd,
5. Agrawal, R.L. 1982. Seed technology. Oxford and IBH Publishing CO.
6. Remington John Stewart. 1993. Seed testing. Printwell, Jaipur.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2014 onwards
SEMESTER III
MAIN CORE-5 PRACTICAL- 2

Hours 5
Credits 5

Code: U11BO3MCP05
Marks: 100

Course Objectives:

This paper deals with the internal organization of root, stem and types of stomata, study of anther, embryo sac, endosperm, embryo and seed.

UNIT – I Histology:

Identification of stomatal types (Dicot -anomocytic, anisocytic, paracytic and Monot – Gramineous type) primary and normal secondary structure of Dicot stem (Vernonia) and root (Cicer), Monocot stem (Bamboo and root (Canna),

UNIT – II

Study of adaptive anatomical features of Hydrophyte (Nymphaea petiole) and Xerophyte (Nerium leaf). Anomalous secondary structure in the stem of Bignonia, Boerhaavia and Nyctanthus. Microscopical study of Epidermal hairs, Sclereids, Raphides, Cystolith and Starch grains.

UNIT – III Palynology:

Analysis and identification of pollen morphology using locally available plant. Evaluation of pollen germination percentage in Vinca rosea and Datura. Preparation and observation of temporary slides of pollen grains.

UNIT- IV Embryology:

Observation of T.S of anther (Lilium, Datura and Shoe flower), Embryosac – Lilium. Endosperm (Nuclear – Sagittaria, Cellular – Cananga, ruminant – Psychotria). Dicot & monocot embryos – slides. Dissection of Dicot embryo (Tridax).

UNIT- V Seed technology:

Seed germination test (paper towel method). Seed viability test (Tetrazolium test). Seed leachate test.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2014 onwards
SEMESTER III
A4 - ALLIED COMPULSORY PAPER I- PLANT DIVERSITY AND PLANT PHYSIOLOGY

Hours 4
Credits 3

Code: U11BO3ACT04
Marks:100

Course Objectives:

This paper gives the basic structure and life cycle pattern of primitive forms such as algae, fungi, bryophytes, pteridophytes and gymnosperms. It also provides knowledge on anatomy, embryology, floral taxonomy of angiosperms and different physiological and biochemical reactions in the higher plants.

UNIT – I Phycology and Mycology:

Structure, reproduction, uses and life cycle of algae – Nostoc and Ulva. Structure, reproduction and life cycle of fungi – Penicillium and Agaricus. Economic importance of algae and fungi.

UNIT –II Bryology, Pteridology and Gymnospermology

Structure, reproduction and life cycle of Bryophyte - Funaria. Pteridophyte - Nephrolepis. Gymnosperm - Cycas.

UNIT – III Histology and Embryology:

Anatomy-Primary and secondary structure of dicot stem and root. Embryology – structure of anther, microsporogenesis and male gametophyte. Structure of ovule, megasporogenesis and female gametophyte. Double fertilization.

UNIT – IV Taxonomy of Angiosperms:

General outline classification of Bentham and Hooker. Detailed study of the following families and their economic importance: Annonaceae, Rutaceae, Asteraceae, Amaranthaceae and Palmae.

UNIT - V Physiology:

Absorption of water – mechanism. Transpiration – mechanism of stomatal transpiration. Photosynthesis – light reaction (cyclic and non - cyclic). Dark reaction (Calvin cycle).

Respiration – Aerobic (Glycolysis, Krebs' cycle and Electron transport chain). Morphological and anatomical adaptations of hydrophytes, halophytes and xerophytes.

REFERENCES

Text Books:

1. Shukla and Chandel, 1994. Plant ecology and soil Science . S. Chand and Company Ltd., New Delhi.
2. Verma, V. 1985. A text book of Plant Physiology. Emkay Publications, New Delhi.
3. Pandey, B. P. 1984. Plant Anatomy. S. Chand and Company Ltd, New Delhi.
4. Bhojwani, S. S. and Bhatnagar, S. P. 1978. The Embryology of Angiosperms. Vikas Publishing House Pvt. Ltd,

Reference Books:

1. Sharma, P.D. 1992. Ecology and environment. Rastogi Publication, Meerut.
2. Agarwal, S.K. 1992. Fundamentals of ecology. Ashish Publishing House, New Delhi.
3. Ganguli, H. G. and Kar, A. K. College Botany. Vol –I and II. New Central Book Agency, Calcutta.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI
DEPARTMENT OF BOTANY SEMESTER III
SYLLABUS – 2013 onwards
SBE – 3 BIOLOGICAL SKILLS FOR PHYSICAL SCIENCES
(THEORY CUM LAB) FOR PHYSICS STUDENTS

Hours 2
Credits 2

Code: U13BZ3SBT03
Marks:100

Course Objectives:

To give a basic knowledge on the fundamental organization of plants and animals, biomolecules, plant tissue culture and animal cell culture.

Unit - I Biological system:

Organization of Biological system – Cells – tissues – organ – cell organelles – plant stem and blood as tissues.

Lab exercise: Observation of internal features of stem. Observation of chromosomes in onion root tip.

Unit – II Molecular biology:

Organization of gene: exon – intron – functional genes – organization of operon: promoter, operator, regulator, enhancer and repressor.

Lab exercise : Hypothetical model to show gene expression.

Unit – III Recombinant DNA technology

DNA as universal molecule – construction of rDNA – vector – cloning methods– examples for transgenic plants and animals.**Lab exercise:** Isolation of DNA

Unit – IV Plant tissue culture

Methods- callus culture, protoplast and somatic hybridization, ovule and pollen culture.

Lab Exercise: Culture medium for multiple shooting.

Unit – V Animal cell culture:

Requirement for animal cell culture, primary cell culture, stem cell - type, application **Lab Exercise:** Cell viability

References

1. De Robertis, E.D.P. and De Robertis, E.M.F. (1995) Cell and Molecular Biology, Saunders College, PA.
2. Powar, C.B. 2002. Cell Biology, Himalaya Publishing House, Mumbai, India.
3. Attwood, T.K. and D.J. Parry-Smith, 2001. Introduction to Bioinformatics. Pearson Education (Singapore) Pte. Ltd., Delhi, India.
4. Murray, R.K., Granner, D.K., Mayes, P.A., Rodwell, V.W. (2000) Harper's Biochemistry, Prentice Hall International Inc.
5. Arthur. M. Lesk (2003) Introduction to Bioinformatics, Oxford University Press.
6. Palanichamy, S. and Manoharan, M. (1991) Statistical methods for Biologists. Palani Paramount Publications, Palani, Tamilnadu
7. Mani, K. and N. Vijayaraj, 2002. Bioinformatics for Beginners. Kalaikathir achchagam, Coimbatore, India.

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 – 73rd Amendment forPRIs.

BOOK FOR STUDY

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

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

HRS / Wk: 1

CODE:U12VE4LVE02
CREDIT : 1
MARKS : 100

OBJECTIVES:

- To make the learners aware of various Social, Gender issues and CyberCrimes.
- To make them aware of the propertyrights.
- To make them understand and appreciate the role of media, in facing the challenges on various lifeissues.

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 Milleniumahead”.
2. Thomas Anjugandam, 1999, “Grow Free Live Free” SalesianPublicaiton.
3. H.C Pretti Nandhini Upretti, jaipur 2000 “Women and problems of GenderDiscrimination”.
4. Thomas B.Jayaseelan, 2002, “Women: Rights and law” Indian Social Institute, NewDelhi.
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:U12VE4LVBO2
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 (Exo4-5);
- Joshua (Joshua1-8)

UNIT – II: JUDGES AND KINGS

- **JUDGES:** Deborah (Judges 4); Samson (Judges 6-8); Gideon (Judges13-16)
- **KINGS:** David (I Sam 17-31, II Sam 1-12); Solomon (I Kings 1-11, Proverbs1-5,31)

UNIT – III: WOMEN IN THE BIBLE

- Women in the Old Testament
- Eve (Gen3)
- Ruth (Ruth1-4)
- Hannah (I Sam1:1-28)
- Esther (Esther1-6)

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.

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 sanctity.

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 RioS.J. Gujarat Sahitya Prakash, P.O.Box. 70, Gujarat, 388001, India.
2. “The Sacraments The Word of God at the Mercy of theBody” Claretian Publications, Malleswaram, Bangalore560055.

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 : U14TL4TAM04
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 வெற்றிப்படிக்களைக் 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

CODE: U14HN4HIN04

CREDITS : 3

MARKS:10

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 :

- | | |
|---|---|
| <input type="checkbox"/> General Essays | - D.B.H.P. Sabha Publishers, Chennai-17 |
| <input type="checkbox"/> Abinava Patra Lekhan | - D.B.H.P. Sabha Publishers, Chennai-17 |
| <input type="checkbox"/> 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

CODE : U14FR4FRE04

CREDIT : 3

MARKS : 100

Unit 1 C'est la fête !

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

Unit 2 Vous plaisantez !

Le conditionnel présent, la distinction du futur et du conditionnel – le mouvement en général – raconter une anecdote – journée de détente – la naissance d'un chef d'œuvre - l'art au début du 20^e 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 2014 onwards)
HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2.
2015 - 2016
I B.A., B.Sc., B.Com., B.R.Sc., B.C.A., B.B.A.,
SEMESTER IV
PART II – ENGLISH IV - GENERAL ENGLISH PAPER IV

HOURS – 6 PER WEEK
CODE :U13EL4GEN04

CREDIT : 3

OBJECTIVES

To strengthen the LSRW skills of students through inter-active approaches, participatory methods and activity oriented exercises.

To develop skills required for referential and independent learning.

To focus on writing skills like creative and comparative writing and book reviews.

To reinforce sub skills including vocabulary, grammar, dialogue, report writing and note making.

UNIT I: READ AND COMMUNICATE: HISTORICAL SKETCHES

The Renaissance

India under the British Raj

UNIT II: READ AND COMMUNICATE : MODERN FABLES

Nonchi Nona and Kotiya the Cat

The Competition

UNIT III: READ AND COMMUNICATE : MODERN FABLES

The Nightingale and the Rose

The Butterfly that Stamped

UNIT IV -READ AND COMMUNICATE : BIOGRAPHIES AND MODERN FABLES

Napoleon Bonaparte

The Hiding Place

UNIT V

GRAMMAR - Tenses

COMPREHENSION - General

COMPOSITION - 1. Note making
2. Dialogue
3. Creative Writing
4. Narrative Writing
5. Imaginative Writing

GENERAL ESSAY – 5 TOPICS

1. Should capital punishment be abolished?
2. Is a corruption- free India a dream?
3. The nuclear family and its consequent changes in society.
4. The threat of terrorism.
5. If man becomes immortal...

THINK BETTER - READ AND COMMUNICATE : MODERN FABLES

1 – 10 for Internal Testing

BOOKS FOR REFERENCE

Oranee Jansz : *EXPLORATIONS A Course in reading, thinking and communication skills.*
Cambridge university press. 2004. Print.

New delhi:

List of words \ compound words\phrases for making sentences:

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

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI -2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS
SEMESTER IV
MAIN CORE-6 CELL AND MOLECULAR BIOLOGY, BIOMETRICS AND
BIOINFORMATICS (THEORY CUM LAB)

Hours 5
Credits 5

Code: U11BO4MCT06
Marks:100

Course Objectives:

To know the ultra structure of plant cell, its organelles and the method of cell division. Biostatistics gives the fundamental ideas about the collection of data, significance of central tendency and interpretation of data. Bioinformatics make the students understand the biological databases and its applications.

UNIT – I Cell Biology:

Cell theory. Structure and functions of cell wall, plasma membrane- lipid bilayer and fluid mosaic model. Ultra structure and functions of cell organelles –chloroplast, mitochondria, endoplasmic reticulum, golgi complex, ribosomes (70s and 80s), vacuole. Ultra structure of nucleus – nuclear envelope, nucleolus, chromatin reticulum.

UNIT – II Molecular Biology:

Cell division – mitosis, meiosis I and II and its significance. Changes in the chromosome – structure, number & their genetic effects. Ultra structure and functions of chromosomes. Giant chromosomes - salivary and lampbrush. Chromosomal proteins – histones and protamines. Structure and organization of DNA double helix – A, B and Z forms. DNA replication: central dogma, semi-conservative replication mechanism, DNA polymerases.

UNIT – III

Mutation: Point mutation – Transition, Transversion and Frameshift mutation. Type, structure and functions of RNA - tRNA, mRNA and rRNA. Transcription, RNA promoters (TATA box, CAAT box), RNA polymerases, Translation, Proof for DNA (A.D.Hershey and M.H.Chase) and RNA as genetic material (Fraenkel Conrat and Stanley in TMV). DNA finger printing and its importance.

UNIT – IV Biometrics:

Collection, classification and presentation of data. Frequency table, frequency curve, frequency polygon and histogram bar diagram. Measures of central tendencies – mean, median and mode. Measures of dispersion – Range, standard deviation and standard error.

UNIT – V Bioinformatics:

Introduction, biological databases- General and specialized. Premier Institutes maintaining data bases - NCBI, EMBL and DDBJ. Tools for analysis of biological sequences - sequence alignment, similarity searching (BLAST), gene finding.

Practical:

Cell biology: Observing the photo micrographs of cell organelles – chloroplast, mitochondria, nucleus, and endoplasmic reticulum. Study of mitotic chromosome: Squash preparation of mitotic cells of *Allium cepa* - root tip. Study of meiotic chromosome: Smear preparation of meiotic cells in *Rheo* flower bud.

Biometrics: Frequency curve, frequency polygon and histogram bar diagram. Calculation of arithmetic mean, median, mode, standard deviation and standard error.

Reference

Text Books:

1. Sundarajan, S. 2000. Cytogenetics. Anm,ol publications, New Delhi.
2. Gupta, P. K. 1985. Genetics. Rastogi publication, Meerut.
3. Power, C. B. 1997. Cell Biology. Himalaya publishing House, Bombay.

4. Ramakrishnan, P. 2003. Biostatistics. Saras publication, Nagercoil.
5. Mani. K. and Vijayraj. D., 2002. Bioinformatics to beginners, Kalaikathir pathippagam, Coimbatore.

Reference Books:

1. Gardner, F. J. 1972. Principles of Genetics. Wiley Eastern Pvt. Company Ltd., New Delhi.
2. Gupta, P. K. 1974. Cytology, Genetics and Evolution. Rastogi publications, Meerut.
3. Satguru Prasad. 1992. Fundamentals of Biostatistics. Emkay publications, New Delhi.
4. Lohar, P.S. 2009. Bioinformatics.MJP Publishers, Chennai.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI -2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 onwards
SEMESTER IV
MAIN ELECTIVE - 1- BASICS AND APPLIED MICROBIOLOGY

Hours 5
Credits 5

Code: U11BO4MET01
Marks: 100

Course Objectives:

This paper deals with history of microbiology, structure, nutrition and reproduction of bacteria, types of virus and their structure and reproduction. It imparts the knowledge on methods of studying bacteria and applied aspects of microbiology on milk, food, beverages, antibiotics, soil and organic matter.

UNIT – I Milestones in the history of Microbiology:

Discovery of microbes (Anton Von Leeuwenhoek). Theory of spontaneous generation. Theory of Biogenesis vs Abiogenesis (Louis Pasteur) Fermentation, pasteurization. Development of vaccines for Anthrax and Rabies. Discovery of diseases (Robert Koch). Germ theory. Discovery of Bacillus and Koch's Postulates. Discovery of vaccination (Edward Jenner). Discovery of Antibiotics (Alexander Flemming). Microbial diversity – general classification of microbes.

Whittaker's Five kingdom concept.

UNIT – II Microorganisms: Bacteria:

Morphology – size, shape, motility. Ultra structure of a bacterial cell – cell inclusions. Bacterial nutrition – phototrophs, chemotrophs. Reproduction: Asexual – fragmentation and binary fission. **Viruses:** Types, structure, reproduction and life cycle of bacteriophages (T-even phages) and plant viruses (TMV). Knowledge about phycoviruses and mycoviruses **Mycoplasma** (PPLO) Structure and life cycle.

UNIT – III Food Microbiology:

Microbiology of milk – sources and types. Pasteurization of milk (reductase and phosphatase test) Milk products – processing and production of curd and cheese. Fermented foods – idly and bread. Microbial protein: algal SCP – commercial production and use of Spirulina. Food spoilage: Food poisoning and food intoxication. Food preservation methods: Physical and Chemical.

UNIT – IV Industrial Microbiology:

Structure and use of fermentor. Large scale production and importance: ethanol (cane bagasse), Beverages – wine and beer, Antibiotics – narrow spectrum (penicillin) and broad spectrum (streptomycin). Vaccine – polio. Enzyme: amylase – brewing (*Bacillus subtilis*) Proteases – tanning (*Aspergillus oryzae*)

UNIT – V Medical Microbiology:

Microbes in the development of human diseases: Causative organisms, symptoms and preventive measures of the following: **Bacterial diseases:** airborne – diphtheria, water borne – typhoid, soil borne – tetanus, contact disease – syphilis. **Viral diseases:** air borne – Rubella, water borne – polio, contact disease – AIDS.

References

Text Books:

1. Tauro, P., Kapoor, K. K. and Yadav, K. S. 1997. An introduction to Microbiology. Wiley eastern Company Ltd., New Delhi.
2. Sharma, P. D. Microbiology.

Reference Books:

1. Powar and Dagainawala, 1993. General Microbiology Vol I and II . Himalaya Publishing house, New Delhi.

2. Tortora, G.J., Funke, B.R. and Case, C.L. 2004. Microbiology – An Introduction. 8th Edition. Pearson education Pvt. Ltd. New Delhi.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI -2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS
SEMESTER IV
MAIN ELECTIVE (ME -1) – FOREST RESOURCES & THEIR UTILIZATION

Hours 5
Credits 5

Code : U11BO4MET04
Marks: 100

Course Objectives:

This paper explains in detail about various forest resources like fiber, fodder, oil, waxes, rubber, tannins, dyes, resins and gums, their processing and utilization by human beings for various purposes in a sustainable and eco-friendly manner.

UNIT-I

Wood and Cork.: Properties of wood. Factors affecting the properties of wood. Importance of wood – Fuel (*Acacia* spp). Matches and match boxes (*Ailanthus malabarica*). Agriculture implements (*Syzygium cumini*). Boat and ships (*Dalbergia sissoo*). Electric poles (*Eucalyptus citriodora*).

UNIT –II

Wood in furniture making (*Tectona grandis*). Mathematical and musical instruments (*Artocarpus integrifolia*). Packing boxes (*Mangifera indica*). Railway carriage and sleepers (*Shorea robusta*). Sports goods (*Morus alba*). Toys (*Juglans regia*) Cork (*Quercus suber*).

UNIT- III

Fiber and fodder: Sources of fibre plants. Processing and uses in rope making (*Agave*, *Cocos nucifera*). Weaving fibres - hats (hat palm -*Sabal causium*). Mats (*Cyperus tegetiformis*). Baskets (raffia palm- *Raffia pedunculata*). Wickerwork (*Bambusa*). Fodder – grasses (*Panicum*). Leaves of young branches and shrubs (*Acalypha hispida*). Trees (*Acacia catechu*).

UNIT IV

Oils, Waxes & rubber: Sources, properties, parts used and the process of obtaining essential oils (*Eucalyptus* oil). Waxes (wax palm – *Copernicia cerifera*). Rubber (*Hevea brasiliensis*).

UNIT V

Tannins, dyes, resins & gums: Sources, properties, parts used and the process of obtaining tannins Oak (*Quercus incana*). Dye - Henna – (*Lawsonia inermis*) Resin (*asafetida*- *Ferula assafoetida*) Gum arabic (*Acacia senegal*).

References:

Text Books:

1. Hill, A.F. and Sharma, O.P. 1996. Economic Botany – Tata McGraw –Hill Publishing Company Ltd. New Delhi.
2. Krishnamurthy, T. 1993. Minor Forest products of India. Oxford & IBH Publishing Co. Pvt. Ltd. New Delhi.

Reference Books:

1. Negi, S.S. 1992. Text Book of Forest utilization (Wood and non- wood forest products) Bishen Singh Mahendra Pal Singh, Dehra Dun, India.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI -2

DEPARTMENT OF BOTANY

B.Sc. BOTANY SYLLABUS 2011 onwards

SEMESTER IV

**A5 – ALLIED COMPULSORY PAPER II – ECONOMIC BOTANY AND
APPLIED PLANT BIOTECHNOLOGY**

Hours 4

Credits 4

Code: U11BO4ACT05

Marks: 100

Course Objectives:

This paper highlights the utilization of plants as food, medicine and cosmetics. It also emphasizes the various biotechnological tools involved in plant biotechnology

UNIT – I Economic Botany:

Botanical description of the following plants. Main economic products and their uses: cereals (Oryza), Pulses (Cajanus), Sunflower oil (Helianthus), Sugarcane (Saccharum), Beverage (Coffea).

UNIT – II

Sources and uses of the following: Vegetable (Moringa – leaf & unripe fruit), Fruit – Banana (Musa), Fibre (Gossypium). Wood – structure, seasoning and use of Teak (Tectona grandis) and Sandal wood (Santalum album). Rubber – Morphology of the plant, tapping, processing, grading, packing and use of Hevea brasiliensis.

UNIT – III

Source and extraction and use of the following: Medicine – Alkaloid (Cinchona) and antioxidants (Green tea). Essential oil – morphology of the plant, extraction and use of Eucalyptus. Paper and pulp – Source, manufacture and use of papers (Bamboo and bagasse). Coir – Source, process and use of coconut.

UNIT – IV

Source and extraction and use of the following: Sago – Manihot utilissima, Tannins – Source and use of the fruit of Terminalia chebula. Dyes – Source and use of Henna (Lawsonia inermis). Source and use of rhizome of turmeric (Curcuma domestica). Gums – morphology of the plant, source and use of gums of neem (Azadirachta indica).

UNIT – V Applied Plant Biotechnology:

Production of transgenic plant for insect pest resistance (BT cotton). GM foods – (Golden rice) and benefits and risks of GM food. Large scale production of biofertilizer – (Rhizobium). Commercial production of SCP (Spirulina) and its nutritive value, advantages and uses. Patent – IPR and its importance

References

Text Books:

1. Pandey, B.P. 2007. Economic Botany. S.Chand & Company LTD. New Delhi.
2. Kumaresan, V. 2004. Biotechnology. SARAS Publication
3. Dubey, R. C. 2006. Text book of biotechnology. S. Chand and Company Ltd. New Delhi.

Reference Books:

1. Hill, A.F., 1996. Economic Botany – Tata Mc Grew –Hill publishing company Limited, New Delhi.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI -2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 onwards
SEMESTER IV

A6 ALLIED COMPULSORY PAPER III- PRACTICAL PAPER - I
Plant Diversity, Histology, Embryology, Taxonomy, Physiology, Ecology and Economic Botany

Hours 4
Credits 3

Code: U11BO4ACP06
Marks:100

Course Objectives:

This paper gives the practical exposure on the basic structure and life cycle pattern of primitive forms such as algae, fungi, bryophytes, pteridophytes and gymnosperms. It also provides knowledge on anatomy, embryology, floral taxonomy of angiosperms and different physiological reactions in the higher plants. Morphological and anatomical structures of hydrophytes, xerophytes and halophytes.

UNIT - I Phycology and Mycology:

Structure of Nostoc, Ulva, vegetative and reproductive structure of Penicillium and Agaricus. **Bryology, Pteridology and Gymnospermology:** Structure of gametophytes, and sporophytes of Funaria, Nephrolepis and Cycas.

UNIT- II Histology and Embryology:

Primary and secondary structure of dicot stem and root. Structure of mature anther and anatropous ovule.

UNIT – III Taxonomy of Angiosperms :

Dissecting and drawing the floral parts and flower M.L.S and floral diagram of the following families: Annonaceae, Rutaceae, Asteraceae, Amaranthaceae and Palmae.

UNIT - IV Physiology :

Experiments on absorption (osmosis) photosynthesis (test tube funnel), transpiration (Ganong's potometer) respiration (Ganong's respiroscope). Morphological and Anatomical structures of hydrophytes (Hydrilla), xerophytes (Nerium). Morphology of pneumatophore of halophytes (Avicennia).

UNIT – V Economic Botany :

Study of economic products and their uses: Oryza, Cajanus, Helianthus, Saccharum, Musa, Coffea and Gossypium. Tissue culture techniques -Sterilization, medium preparation, inoculation and multiple shoot induction. SCP – Spirulina.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI-2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 ONWARDS
SEMESTER V
MAIN CORE -7 GENETICS AND PLANT BREEDING

Hours 5
Credits 4

Code: U11BO5MCT07
Marks:100

Course Objectives:

This paper imparts knowledge about Mendel's ratios, deviation from Mendel's ratios, blood groups, linkage and crossing over. A knowledge about objectives and conventional methods of plant breeding, role of hybridization, mutation and polyploidy in plant breeding.

UNIT-I Classical genetics:

Mendel's experiments. Law of segregation, law of independent assortment (mono, di and trihybrid crosses). Back and test crosses. Biological significance of Mendel's laws. Deviations from Mendelian ratios: Incomplete dominance - flower colour in *Mirabilis jalapa*. Codominance - coat colour in cattle. Lethality - dominant lethal - yellow lethal in mice, recessive lethal - leaf colour in maize.

UNIT - II Gene interaction:

Complementary factor - flower colour in sweet pea, epistasis - dominant epistasis - fruit colour in *Cucurbita*, recessive epistasis - petiole length in tobacco, duplicate factor - seed pod shape in shepherd's purse. Multiple alleles - coat colour in rabbit and blood grouping. Polygenic or quantitative inheritance - kernel colour in wheat.

UNIT - III Linkage, crossing over and sex determination:

Linkage groups (complete and incomplete linkage). Linkage in maize, crossing over and recombination - cytological basis of crossing over, types, theories, significance and factors affecting crossing over. Chromosome mapping. Sex determination in plants (*Melandrium* and *Zea mays*), sex linkage: inheritance of X - linked genes in *Drosophila* (eye colour) & human being (colour blindness and haemophilia).

UNIT - IV Extra chromosomal inheritance and mutation:

Characteristics, cytoplasmic inheritance in diploid organisms (plastid transmission in plants, kappa particles transmission in *Paramecium*). Cytoplasmic inheritance in haploid organisms (yeast), male sterility in plants (wheat). Significance of cytoplasmic inheritance.

Mutation: Types (spontaneous and induced mutations - physical and chemical mutagens) and detection of mutation (*Neurospora*). Polyploidy - Types. Hardy Weinberg law & its significance.

UNIT - V Plant breeding:

Objectives (Breeding for crop improvement to increase yield, quality, adaptation to different environment and disease resistance). A brief study of conventional methods of plant breeding (mass selection and pure line selection). Principles and techniques in plant breeding. Hybridization types. Heterosis. Role of mutation and polyploidy in plant breeding. Role of ICAR, IARI and CRRI in crop improvement.

References

Text Books:

1. Verma, P.S. and Agarwal, V.K. 2007. Cell Biology, Genetics, Molecular Biology, Evolution and Ecology. S. Chand & Company Ltd. New Delhi.
2. Gupta, P.K. 2002. Cytology, Genetics and Evolution. Rastogi Publications, Meerut, India.
3. Gupta, P. K. 1996. Genetics. Rastogi publications, Meerut, India.
4. Chaudhary, H. K. 1982. Introduction to plant breeding. Oxford and IBH Publishing Co., New Delhi.

Reference Books:

1. Gardner, F. J. 1972. Principles of Genetics. Wiley Eastern Pvt. Company Ltd., New Delhi.
2. Gupta, P. K. 1974. Cytology, Genetics and Evolution. Rastogi publications, Meerut.

3. Allard, R. W. 1960. Principles of plant breeding. John Wiley and Sons, Inc., New York, London.
4. Sarin, C. 2001. Genetics. Tata McGraw – Hill Publishing Company Limited, New Delhi.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 ONWARDS
SEMESTER V
MAIN CORE – 8 ETHNOBOTANY, MORPHOLOGY AND TAXONOMY OF
ANGIOSPERMS

Hours 5
Credits 4

Code: U11BO5MCT08
Marks:100

Course Objectives:

This syllabus highlights the importance of ethnobotany. It describes the role of medicinal plants in Indian system of medicine. In addition this paper deals about the morphological variation of the plant parts, the significance of angiosperm taxonomy, botanical nomenclature, a detailed study of range of vegetative and floral characters of different dicot and monocot families and their economic value.

UNIT –I Ethnobotany:

Definition and Scope of Ethnobotany. Interdisciplinary approaches in Ethnobotany. Ethnic groups of India. Study of plants used by tribals (Foods, Medicine and Fodder). Role of medicinal plants in Indian system of medicine - Siddha, Ayurvedic and Unani. Basic principles in relation to ethnobotany. Role of ethnobotany in the conservation - Sacred groves. (religious belief, social custom and Taboos) and domestication of native plant genetic resources. Role of Herbaria in ethnobotany.

UNIT – II Morphology:

Root types and modifications: Adventitious – Ruellia, Tap root – Daucus. Stem modifications: Aerial- phylloclade - Opuntia, cladode- Asparagus, underground – ginger. Leaf: Types : Simple – Hibiscus, Compound : Pinnate – Cassia, Palmate – Manihot. Venation & Phyllotaxy, Modifications : Phyllode - Acacia. Leaf tendril – Gloriosa. Leaf pitcher - Nepenthes. Inflorescence types with examples. Flower – Technical description of flower. Fruit - types with examples.

UNIT - III Taxonomy of Angiosperms:

Systems of classification: Broad outline of Bentham and Hooker and Takhtajan. Binomial Nomenclature. Elementary knowledge of ICBN and its significance. Citation of authors. Floras: definition, identification, collection and uses. Herbarium techniques : Methodology of preparation, management and role of herbarium. Important herbaria and Botanical gardens of India.

UNIT - IV

Systematic position (Bentham and Hooker), diagnostic features (vegetative and floral) and economic importance of the following dicot families: Annonaceae, Brassicaceae, Rutaceae, Anacardiaceae, Leguminosae - (Fabaceae, Caesalpiniaceae and Mimosaceae), Cucurbitaceae and Apiaceae.

UNIT-V

Rubiaceae, Asteraceae, Asclepiadaceae, Acanthaceae, Lamiaceae, Amaranthaceae, Euphorbiaceae, Orchidaceae, Liliaceae, Musaceae and Poaceae.

References

Text Books:

1. Pandey, S.N. and Misra, S.P. 2008. Taxonomy of Angiosperms. Ane Books , India, New Delhi.
2. Pandey, B. P. 2005. Taxonomy of Angiosperms for University students. S. Chand & Company Ltd. New Delhi.
3. Singh and Jain. 1987. Taxonomy of Angiosperms. Rastogi Publications, Meerut, India.
4. Jain, S.K. 1987. A Manual of Ethnobotany- Scientific publishers ,Jodhpur.
5. Jain, S.K. 1981. Glimpses of Indian Ethnobotany- Oxford and IBH Publishing Co., New Delhi

Reference Books:

1. Ganguli, H. G. and Kar, A. K. 1968. College Botany. Vol –I. New Central Book Agency, Calcutta.
2. Lawrence. 1955. An introduction to Plant Taxonomy. Central Book Depot. Allahabad.
3. Paul and Jain 1998. Tribal Medicine – Oxford and IBH Publishing Co., New Delhi

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI-2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 ONWARDS
SEMESTER V
MAIN CORE – 9 PHARMACOGNOSY

Hours 5
Credits 4

Code: U11BO5MCT09
Marks: 100

Course Objectives:

This paper deals with the classification, constituents and uses of drugs obtained from various plant parts. It gives description about the indigenous traditional drugs of India namely amla, chebula, brahmi, neem etc. It emphasizes on plant resources as technical products & pharmaceutical aids.

UNIT – I

Definition and importance of pharmacognosy. Sources of natural drugs. Classification of crude drugs – morphological, therapeutical and chemical. Collection and processing of crude drugs.

UNIT – II

Drug constituents: Carbohydrates, glycosides, lipids – fixed oils, volatile oils, resins, gums, alkaloids, tannins and polyphenols.

UNIT – III

Drug adulteration: Definition and types. Methods of drug evaluation – morphological, microscopical and physical. Preliminary detection of carbohydrates, glycosides and tannins.

UNIT – IV

Indigenous traditional drugs of India: A study on the distribution, biological, source, characters, chemical constituents and medicinal use of the following: amla (*Embllica officinalis*), brahmi (*Hydrocotyl asiatica*), tulasi (*Ocimum sanctum*), garlic (*Allium sativum*), vasaka (*Adhatoda vasica*), ginger (*Zingiber officinale*), clove (*Syzygium aromaticum*), pepper (*Piper nigrum*), sandal wood (*Santalum album*), cinchona (*Cinchona officinalis*) and lemon grass oil (*Cymbopogon citratus*).

UNIT – V

Plant resources as technical products and Pharmaceutical aids. Natural plant pesticides (pyrethrum and neem). Allergenic extracts and their effects (pollen and fungal extracts). Fibers, surgical dressings & sutures.

References:

Text Books:

1. Handa, S. S., & Kapoor, V. K. Pharmacognosy. Vallabh Prakashan, New Delhi.
2. Mohammed Ali. Text book of Pharmacognosy. CBS Publishers & Distributors, New Delhi.
3. Roseline, A. 2011. Pharmacognosy. MJP Publishers, Chennai.

Reference Books:

1. Kokate, C. K., Purohit, A. P. & Gokhale, S. B. 1998. Pharmacognosy. Nirali Prakashan, Pune.
2. Wallis, T. E. Text book of Pharmacognosy. CBS Publishers & Distributors. Jain Bhawan, New Delhi.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI -2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 ONWARDS
SEMESTER V
MAIN CORE- 10 PRACTICAL III

Hours 5

Code: U11BO5MCP10

Credits 4

Marks: 100

Course Objectives:

This paper includes problems in genetics with examples are included. Practical knowledge on morphology and modifications of root, stem and leaves. Technical description of vegetative and floral parts of the families included and basic aspects of pharmacognosy are included.

UNIT – I Genetics:

Simple problems in monohybrid and dihybrid ratios, back cross and test cross, incomplete dominance, lethal gene, gene interaction, multiple allele, codominant allele. Plant breeding – hybridization technique.

UNIT – II Plant Morphology:

Root modification – Tap root – carrot, adventitious root – Ruellia. Stem – cladode (Asparagus), phylloclade (Muehlenbeckia, Opuntia). Leaf modification – phyllode – Acacia, leaf pitcher – Nepenthes. Leaf tendril – Gloriosa.

UNIT – III Taxonomy:

Study of the following families (locally available) Description of plants in technical terms. Identification of economic products from the families. Field study of flora.

Polypetalae: Annonaceae, Rutaceae, Anacardiaceae, Leguminosae, Cucurbitaceae,

UNIT – IV

Gamopetalae: Rubiaceae, Asteraceae, Asclepiadaceae, Acanthaceae, Lamiaceae.
Monochalmydeae and Monocots: Amaranthaceae, Euphorbiaceae, Liliaceae, Poaceae.

UNIT – V

Pharmacognosy: Preliminary histochemical detection of alkaloids, glycosides and tannins. Detection of adulterants of market samples of mustard seeds, coriander powder, pepper, tea dust, coffee powder, chilli powder, turmeric powder and sooji.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI-2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 ONWARDS
SEMESTER V

MAIN ELECTIVE 2 – PLANTS IN HUMAN HEALTH CARE

Hours 5

Code: U11BO5MET02

Credits 5

Marks:100

Course Objectives:

This paper deals with the sources, energy and nutritive values, balanced and recommended dietary allowances of carbohydrates, proteins, lipids, vegetables and fruits in health care. Their role in regulating body functions and combating nutritional deficiencies in human health. In addition, it also deals with the medicinal values of plants, plant products, pigments, vitamins, minerals and antioxidants.

UNIT – I Energy value of carbohydrates:

Sources (botanical name, family, common name and morphology of the useful parts of the following and nutritive values). Cereals and millets – rice, wheat, oats, ragi and pearl millet. Root – tapioca, stem tuber – potato). Source and uses of lipids: Sesame, ground nut and sunflower oil. Balanced and recommended dietary allowances for different age groups and its role in regulating body functions (malnutrition, diabetics and hypertension). Impact of lipids in obesity, diabetics and cardiovascular diseases.

UNIT – II Pulses in Human nutrition:

Sources (botanical name, family, common name and morphology of the useful parts of the following and nutritive values). Nutritive value of germinated and sprouted pulses (green gram and Bengal gram). Balanced and recommended dietary allowances for different age groups and its role in regulating body functions. Malnutrition - Kwashiorkor. Loss of nutrients (soaking, cooking processes, blanching).

Utilization of pulses – mature seeds (red gram and black gram), fresh seeds (peas) and immature pods (beans).

UNIT – III Nutritive and fibre value of greens and vegetables:

Sources (botanical name, family, common name and morphology of the useful parts of the following and nutritive values) Greens (leafy vegetables): agathi, drumstick, fenugreek, spinach and cabbage. Other vegetables: brinjal, lady's finger, bitter gourd, bottle gourd, tomato, onion, garlic, cucumber, carrot, beet root. Role of pigments, minerals, vitamins and vegetable fibres in human health. Use of vegetable as salads and soups.

UNIT – IV Nutritive and antioxidant value of fruits:

Sources (botanical name, family, common name and morphology of the following and nutritive values) - banana, grapes, guava, pine apple, mango, citrus fruits (orange, sweet lime), papaya, water melon, pomegranate and sapota. Role of antioxidants, minerals and vitamins of fruits in human health. Fruit salad and its importance.

UNIT – V Medicinal values of plants and its products:

Sources (botanical name, family, common name and morphology of the useful parts for the following ailments) indigestion (coriander and mentha leaves, cumin, pepper, ginger), laxatives (castor oil, senna leaves), cough and cold (tulsi, Coleus) mouth ulcers - black night shade (Solanum nigrum), tooth ache (clove and Mexican cress (Spilanthes calva), dandruff shampoo (shoe flower and soap nut), massage oil - Indian sarasaparilla (Hemidesmus indicus) and Indian madder (Rubia cordifolia), diabetes (fenugreek and jambolan seed powder), antioxidants (green tea and beet root), herb drinks (juice of amla and lime).

References

Text Books:

1. Sumathi, R., Madambi and Rajagopal, M. v. 1997. Fundamentals of foods and nutrition. New Age International Pvt. Ltd., New Delhi.
2. Sree Lakshmi, B. 1997. Food Science. New Age International Pvt. Ltd., New Delhi.

Reference Books:

1. Sree Lakshmi, B. 2009. Nutrition Science. New Age International Pvt. Ltd., New Delhi.

2. Shakuntala Manay, N. and Shadaksharaswamy, M. 1987. Foods Facts and principles, New Age International (P) Limited, Publishers, New Delhi.
3. Hill.A.F,1996. Economic Botany –Tata Mc Graw –Hill publishing company Limited,New Delhi.
4. Swaminathan, M. 1985. Advanced text book in food and nutrition Vol. I and II. The Bangalore Printing and Publishing Co. Ltd., Bangalore.
5. The art and Science of Cooking – A student manual. 1993. Department of food and nutrition. Blackwell publisher, New Delhi.
6. Anuradha Subramanian. 1998. Concise food science. Soundariya Publication, Erode.
7. Parvinder, S. Bali. 2009. Food production operations. Oxford University Press, New Delhi.
8. Norman N.Potter and Joseph H. Hotchkiss. 1996. Food Science Fifth edition. CBS Publishers and distributors, New Delhi.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI-2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 ONWARDS
SEMESTER V
MAIN ELECTIVE –2 HORTICULTURE, PLANT PATHOLOGY AND PLANT PROTECTION

Hours 5
Credits 5

Code:U11BO5MET05
Marks:100

Course Objectives:

This paper gives knowledge about concept of horticulture, plant diseases, development of diseases, pathogenesis, defense mechanisms and control of plant diseases. Study of certain fungal, bacterial, mycoplasmal and viral diseases is also highlighted.

UNIT – I Horticulture:

Importance of horticulture, Soil types and soil organic matter. Preparation of soil. Home manures, compost and fertilizers. Propagation of plants by seeds, cuttings, layering and grafting. Role of growth hormones in horticulture. Kitchen garden: Lay outs and establishment. Bonsai culture. Floriculture: production of cut flowers, cultivation of roses. Cultivation of fruits: Banana and Citrus. Horticulture Organizations: IIHR, NBH.

UNIT – II

Plant diseases – concept, importance and classification. Effect of environment & nutrition on disease development. Dissemination of plant pathogens. Koch's postulates. Pathogenesis – penetration & entry of plant pathogens – development inside the host tissue. Enzymes & toxins in plant disease development.

UNIT – III

Defense mechanisms in plants – morphological, structural & biochemical defense mechanisms. Control of plant diseases – chemical (fungicides) & biological methods.

UNIT – IV

Causative organism, symptoms, etiology & control measures of fungal diseases. Wilt of cotton, tikka disease of groundnut, ergot of cholam, red rot of sugarcane & damping off seedlings.

UNIT – V

Study of the causative organism, symptoms, etiology & control measures of the bacterial diseases – blight of paddy & angular leaf spot of cotton; Mycoplasmal disease – little leaf of brinjal; Viral diseases – cucumber mosaic & bhendi yellow leaf banding.

References:

Text Books:

1. Edmond, J. B., Senn, T. L. & Andrews, F. S. 1964. Fundamentals of Horticulture. Tata McGraw – Hill Publishing Company Ltd., New Delhi.
2. Manibushan Rao, K. 1991. Text Book of Horticulture. Mac Millan India Ltd., Madras.
3. Rengaswami, G. 1972. Diseases of crop plants in India. Prentice – Hall of India, Pvt. Ltd., India.
4. Horsfall, J. G. and Dimond, A. E. 1959. Plant Pathology – An advanced treatise, Academic press, New York, London.

Reference Books:

1. Edward Reiley, H. & Carroll Shry, J. C. 1979. Introductory Horticulture. Van Nostrand Reinhold Company, London.
2. Bilgrami, K. S. and Dube, H. C. 1976. A text book of modern plant pathology. Vikas Publishing House, Pvt. Ltd., New Delhi.
3. Mehrotra, R.S. 1980. Plant Pathology. Tata McGraw – Hill Publishing company Ltd., New Delhi.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI -2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 ONWARDS
SEMESTER V
NON MAJOR ELECTIVE -1 – FOOD SCIENCE AND TECHNOLOGY

Hours 2
Credits 2

Code: U11BO5NMT01
Marks:100

Course Objectives:

This paper highlights the major classes of nutrients and nutritive values. Preservation of food and food additives, safety measures and food laws.

UNIT – I

Major classes of food, and their nutrients: Cereals and products (Rice- carbohydrates), Pulses (red gram - protein), fats and oils (vanaspathi and sunflower oil), fruits and vegetables (vitamins A, C and minerals).

UNIT – II

Types of cooking: Wet methods of cooking - boiling, simmering, poaching, stewing, blanching, steaming and pressure cooking. Dry methods – roasting, grilling, toasting, baking salting and frying. Loss of nutrients.

UNIT - III

Food additives: Definition, types of additives (any seven). Food adulteration: definition, types of adulterants – intentional, incidental and metallic contaminants. Food laws and standards: Role of international agencies like FAO and WHO – major objectives in eradicating poverty.

UNIT – IV

Food preservation technology: Definition, importance, principles of preservation, methods of preservation – low and high temperature, and drying. Oil, spices, salt and sugars as preservatives **UNIT – V**

Food processing technology: Introduction, importance and advantages of food processing. Preparation of jam - mixed fruit jam and pineapple jam. Preparation of squashes - orange squash and grape crush.

References:

Text books:

1. Sumathi, R., Madambi and Rajagopal, M. V. 1997. Fundamentals of foods and nutrition. New Age International Pvt. Ltd., New Delhi.
2. Sree Lakshmi, B. 1997. Food Science. New Age International Pvt. Ltd., New Delhi.

Reference Books:

1. Swaminathan, M. 1985. Advanced text book in food and nutrition Vol.I and II. The Bangalore Printing and Publishing Co. Ltd., Bangalore.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI -2
DEPARTMENT OF BOTANY
SEMESTER V
SYLLABUS – 2013 onwards
SBE – 4 BIOLOGICAL SKILLS FOR CHEMICAL SCIENCES
(THEORY CUM LAB) FOR CHEMISTRY STUDENTS

Hours 2
Credits 2

Code: U13BZ5SBT04
Marks:100

Course Objectives:

To give a basic knowledge on the fundamental organization of plants and animals, biomolecules, plant tissue culture and animal cell culture.

Unit - I

Biological system: Organization of Biological system – Cells – tissue – organ – cell organelles – plant stem and blood as tissues.

Lab exercise : Observation of internal organization of stem. Observation of chromosomes in onion root tip.

Unit – II

Molecular biology: Organization of gene: exon – intron – functional genes – organization of operon: promoter, operator, regulator, enhancer and repressor.

Lab exercise : Hypothetical model to show gene expression.

Unit – III

Recombinant DNA technology – DNA as universal molecule – construction of rDNA – vector – cloning methods– examples for transgenic plants and animals. **Lab exercise:** Isolation of DNA

Unit – IV

Plant tissue culture – Methods- callus culture, protoplast and somatic hybridization, ovule and pollen culture.

Lab Exercise: Culture medium for multiple shooting.

Unit – V

Animal cell culture: Requirement for animal cell culture, primary cell culture, stem cell - type, application.

Pharmacognosy: Pharmaceutical aids derived from plants and animals. **Lab Exercise:** Cell viability

References

1. De Robertis, E.D.P. and De Robertis, E.M.F. (1995) Cell and Molecular Biology, Saunders College, PA.
2. Powar, C.B. 2002. Cell Biology, Himalaya Publishing House, Mumbai, India.
3. Attwood, T.K. and D.J. Parry-Smith, 2001. Introduction to Bioinformatics. Pearson Education (Singapore) Pte. Ltd., Delhi, India.
4. Murray, R.K., Granner, D.K., Mayes, P.A., Rodwell, V.W. (2000) Harper's Biochemistry, Prentice Hall International Inc.
5. Arthur. M. Lesk (2003) Introduction to Bioinformatics, Oxford University Press.
6. Palanichamy, S. and Manoharan, M. (1991) Statistical methods for Biologists. Palani Paramount Publications, Palani, Tamilnadu
7. Mani, K. and N. Vijayaraj, 2002. Bioinformatics for Beginners. Kalaikathir achchagam, Coimbatore, India.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI -2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 ONWARDS
SEMESTER VI

MAIN CORE- 11 PLANT PHYSIOLOGY AND BIOCHEMISTRY

Hours 6
Credits 5

Code: U11BO6MCT11
Marks: 100

Course Objectives:

This paper throws light on the fundamentals of plant physiology and biochemistry. Physiological activities like absorption, transpiration, respiration, photosynthesis, nitrogen metabolism and plant growth regulators have been dealt in detail. In Biochemistry, structure, types, chemistry and significance of various biomolecules are highlighted.

UNIT – I Physiology:

Structure and functions of biological membranes, Water and solute absorption – passive and active absorption. Apoplast and Symplast concept. Ascent of sap: root pressure and transpiration pull. Absorption of mineral solutes – active and passive. Transpiration: types, mechanism of stomatal movement. Guttation, antitranspirants. Mineral nutrition: Sources, functions and deficiency symptoms of essential elements. Water and sand culture experiments.

UNIT – II

Respiration: Glycolysis, Krebs's cycle, Electron transport and oxidative Phosphorylation and Pentose phosphate pathway. Photosynthesis: Photosynthetic pigments. Emerson enhancement effects, photochemical reactions, photophosphorylation, dark reactions, C3, C4 fixations and CAM plants. Factors affecting photosynthesis.

UNIT – III

Nitrogen metabolism: Sources of nitrogen, biological nitrogen fixation, nitrogen cycle. Amino acids – reductive amination, transamination. Protein synthesis Growth: stages of growth and growth curve. Photoperiodism. Vernalization. Plant growth regulators – Indoles, gibberellins, cytokinins, ethylene, abscisic acid. Plant rhythms and Biological clock. Seed dormancy and senescence.

UNIT – IV Biochemistry:

Structure of atoms, molecules and chemical bonds. Carbohydrates: Structure of monosaccharides, isomerism. Nomenclature, chemical properties, cyclic structure of monosaccharides (aldoses and ketoses). Compounds derived from monosaccharides. Disaccharides: Structure and properties of reducing and non – reducing disaccharides. Polysaccharides: Structure of starch, cellulose and pectin. Lipids: Composition of lipids – saturated and unsaturated fatty acids, compound lipids and derived lipids. Biological significance of lipids.

UNIT – V

Types and properties of amino acids. Proteins: Classification and structure of proteins. Properties and biological significance of proteins. Enzymes: Classification and properties. Mode of action of enzymes. Factors affecting enzyme activity. Secondary metabolites: Types – alkaloids and vitamins : Properties and biological significance.

References

Text Books:

1. Verma, V. 1985. A text book of Plant Physiology. Emkay Publications, New Delhi.
2. Pandey, S. N. and Sinha, B. K. 1972. Plant Physiology. Vikas Publishing House Pvt. Ltd., New Delhi.
3. Jain, V. K. 1990. Fundamentals of Plant Physiology. S. Chand and Company Ltd., New Delhi.
4. Jain, V.K. 1995. Fundamentals of Biochemistry. S. Chand and Company Ltd., New Delhi.
5. Srivastava. 1987. Introduction to biochemistry. Rastogi publications, Meerut, India.

Reference Books:

1. Noggle, G. R. and Fritz, G. J. 1992. . Introductory Plant Physiology. Prentice – Hall of India Pvt. Ltd., New Delhi.

2. Conn, E. E. and Stumpf, P. K. 1976. Outlines of Biochemistry. Wiley Eastern Ltd., New Delhi.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI -2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 onwards
SEMESTER VI
MAIN CORE – 12 PLANT TISSUE CULTURE, GENETIC ENGINEERING AND
NANOTECHNOLOGY

Hours 6
Credits 5

Code: U11BO6MCT12
Marks:100

Course Objectives:

It highlights the recent aspects such as plant tissue culture, recombinant DNA technology, use of plasmid DNA in cloning, mass cultivation and use of SCP, production and use of biodiesel, restoration of degraded forest, production of transgenic plants and advantages of using biofertilizer and ethical issues of biotechnology. It also inculcates the basic ideas of nanotechnology.

UNIT – I: Plant tissue culture:

Introduction, Cellular totipotency, basic principles, infrastructure of tissue culture laboratory. Sterilization of glassware, culture medium and plant tissues. Culture medium: Definition, types of medium (solid and liquid), composition and preparation of MS culture medium. Aseptic manipulation and maintenance of culture. Micropropagation: Callus initiation, organogenesis – direct and indirect methods and its significance.

UNIT–II:

Somatic embryogenesis: Principles, types, protocol and importance. Synthetic seeds: Protocol for preparation and its application. Haploid culture: Culture of anther and pollen, significance of haploid production. Cell suspension culture: Principles, methods and applications. Plant protoplast culture: principles, isolation and culture of protoplasts and importance of protoplast culture.

UNIT–III:

Genetic engineering: Introduction, principles and applications of genetic engineering. Vectors: Plasmids - pBR 322 - definition, nomenclature, structure and uses. Enzymes – restriction endonucleases and DNA ligase and its applications. Gene cloning: Isolation of desired gene and vector, construction of recombinant DNA, transformation and multiplication of recombinant DNA, selection of clones by colony hybridization. PCR: Principles and applications of PCR. Gene libraries: Construction and uses of genomic and cDNA library.

UNIT – IV

Definition, nutritive value and largescale production and advantages of SCP Spirulina and yeast. Genetically Modified Organisms (GMO's): Production of recombinant enzyme (insulin), hormone (somatotropin), vaccine (Hepatitis B virus). Construction and role of superbug (Pseudomonas putida) in bioremediation. Transgenic plants: Agrobacterium mediated gene transfer, production of herbicide resistant plants (Glyphosate), pest resistant plant (BT toxin) and improvement of nutritional quality of crop plants (sweet protein - thaumatin). Biohazards of GMO's.

UNIT – V: Nanotechnology

Introduction, history, bio-nano tools, types of nano materials, applications of nanotechnology – environment, agriculture and medicine. Safety and limitations of nanotechnology.

References

Text Books:

1. Dubey. R. C. 2006. Text book of biotechnology. S. Chand and Company Ltd. New Delhi.
2. Kumaresan, V. Text book of biotechnology. Saras Publications.
3. Joy Deep Dutta and Anil K.Rao, 2008. Introduction to Nanoscience. CRC Press, London.

Reference Books:

1. Gupta, P. K. 1999. Elements of biotechnology. Rastogi Publications, Meerut.
2. John E. Smith. 1988. Biotechnology – II Edition. Cambridge University Press, London.
3. Jogdand, S.N. 2006. Gene Biotechnology. Himalaya Publishing House.
4. M. Balakrishna Rao and M. Krishna Reddy, 2007. Nanotechnology and Society. Campus Books International, New Delhi.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI-2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 ONWARDS
SEMESTER VI
MC -13 PRACTICAL PAPER 4

Hours 6
Credits 5

Code: U11BO6MCP13
Marks:100

Course Objectives:

To train the students on the preparation of solutions, to carry out the experiments on plant physiology, biochemistry and plant tissue culture.

UNIT – I Physiology:

Potato osmoscope, DPD of Rhoeo leaf peel by plasmolytic method, Thistle funnel experiment for osmosis, Determination of water absorption and transpiration ratio, rate of transpiration, determination of transpiration index.

UNIT – II

Determination of respiration rate by Ganong's respiroscope. Effect of quality of light on photosynthesis, Rate of photosynthesis under varying concentrations of CO₂, Effect of intensity of light on O₂ evolution during photosynthesis using Wilmott's bubbler.

UNIT – III

Separation of plant pigments by paper chromatography. Experiments for demonstration – Ascent of sap, Root pressure, Kuhn's Fermentation apparatus, thin layer chromatography, water culture experiments (hydroponics), growth curve.

UNIT – IV Biochemistry:

Estimation of starch by colorimetric method, Reducing sugar by Benedict's method, Total lipids by gravimetric method. Total soluble protein by Biuret's method, Ascorbic acid by titrimetric method, Enzyme activity measurement - Amylase activity. Estimation of secondary plant product – phenol by colorimetric method. Experiments for demonstration – dialysis. Working principles of centrifuge and colorimeter.

UNIT – V Plant tissue culture:

Preparation of medium, sterilization and inoculation of explants and incubation. Callus induction with the help of different explants, plantlet production through micropropagation and synthetic seed production. Isolation of protoplast – leaves of spinach or tobacco.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI-2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 ONWARDS
SEMESTER VI
MAIN ELECTIVE 3 –INSTRUMENTATION AND BOTANICAL TECHNIQUES

Hours 5
Credits 5

Code: U11BO6MET03
Marks:100

Course Objectives:

This paper deals with the botanical techniques, working principles and applications of biological instruments.

UNIT – I Instrumentation:

Microscopy– working principle of light microscope – magnification, resolution , numerical aperture and refractive index. Micrometry – ocular and stage. Standardization and measurement of fibre, stomatal pore etc.

UNIT – II

Colorimeter, spectrophotometer – working principle (Beers and Lamberts law) and their applications. pH meter – principles and application. Preparation of buffers.

UNIT – III

Chromatography -working principle, types – paper, thin layer and column chromatography and their applications. Dialysis - principles and application. Centrifuge - principle, types - table top and high speed centrifuge and their applications.

UNIT – IV Botanical techniques:

Collection, fixing (fixative FAA) and processing (dehydration, clearing and infiltration and embedding) of materials for rotary microtomy. Sectioning of plant material – hand section and microtome for staining. Double staining with safranin and fast green.

UNIT – V Histochemical analysis:

Localization and identification of carbohydrates, proteins and lipids. **Electrophoresis:** Principles and techniques. Isolation of DNA – Agarose gel, Protein separation – SDS PAGE.

References

Text Books:

1. Machve K. K. 2007. A text book of Bio – Instrumentation. Manglam Publishers & Distributors, Delhi.

Reference Books:

1. Keith Wilson & John Walker, 1994. Practical Biochemistry Principles & Techniques. Rekha Printers Pvt. Ltd. New Delhi.
2. Avinash U., Kakoli U. and Nirmalendu N. 1998. Biophysical Chemistry. Himalaya Publishing House, Mumbai.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI -2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 – 2014
SEMESTER V
MAIN ELECTIVE - 3 (ME) – FOOD SCIENCE

Hours 5
Credits 5

Code :U11BO6MET06
Marks:100

Course Objectives:

It emphasizes the various aspects of foods, their nutritive value, preservation, processing of food & the impact of cooking on food. Microbes in food poisoning & food borne diseases are also dealt. A knowledge about food laws, food standard, adulteration & role of National & International agencies for food quality control is also given.

UNIT – I

Food as a source of energy, energy value of food, major classes of food – carbohydrates, proteins, fats, oils, minerals (Ca, Fe & I) & vitamins – fat soluble (A,D,E, K) & water soluble (Vit – C, riboflavin, niacin & thiamine) – sources, requirements, recommended Dietary allowances for nutrients, functions & deficiency symptoms.

UNIT – II

Food & food products : Nutritive value. Plant as source of food: Cereals- rice & wheat & their products. Pulses – black & green gram. Fruits, vegetables & oils – sun flower oil, bran oil & vanaspathi. Cooked foods: types of cooking, loss of nutrients in cooking.

UNIT – III

Food preservation: Importance, principles of preservation. Methods of preservation- low, high temperature, drying, concentration, fermentation & radiation. Uses of oil & spices. Uses of salt & sugars, uses of preservatives. Preparation of Jam, Jellies, Pickles & squashes.

UNIT – IV

Food additives: Definition, need & types. Food toxicants: Naturally occurring toxicants in food, fluorosis. Food adulteration: Toxic substances in certain foods. Simple physical tests for detection of food adulterants.

UNIT – V

Food safety: Sanitation & hygiene, Food – borne diseases – microorganisms and moulds. Food poisoning. Food laws & Food standards. Knowledge about consumer council & consumer protection. Food allergy. Role of International & National Agencies like FAO, WHO, UNICEF & CFTRI.

References:

Text books:

1. Sumathi, R., Madambi & Rajagopal, M. v. 1997. Fundamentals of foods & nutrition. New Age International Pvt. Ltd., New Delhi.
2. Sree Lakshmi, B. 1997. Food Science. New Age International Pvt. Ltd., New Delhi. **Reference Books:**
1. Swaminathan, M. 1985. Advanced text book in food & nutrition Vol. I & II. The Bangalore Printing & Publishing Co. Ltd., Bangalore.
2. The art & Science of Cooking – A student manual. 1993. Department of food & nutrition. Blackwell publisher, New Delhi.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI -2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 onwards
SEMESTER VI

NON MAJOR ELECTIVE - 2 HERBAL REMEDIES

Hours 2
Credits 2

Code: U11BO6NMT02
Marks:100

Course Objectives:

It deals with the principles of Indian system of medicine. Home remedies for common ailments and body care by natural means are given.

UNIT I

Introduction and scope. Basic principles of Indian system of medicine. Ayurveda, Siddha and Unani.

UNIT – II

Herbal home remedies for the common ailments of intestine, mouth affections and respiratory problems.

UNIT – III

Skin and hair care by natural means. Herbal remedies for uterine problems.

UNIT – IV

Essentials of herbal gardening. Harvesting, drying and storage of herbs.

UNIT – V

Herbal preparations – decoctions, teas, infusions, oils and powders.

Text Books:

1. Girija Khanna. 1986. Herbal Remedies – Vikas Publishing house Ltd, New Delhi.
2. Karen Phillip, 1994, Everyday Aromatherapy – Brock Hampton press, Italy.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 2
DEPARTMENT OF BOTANY
B.Sc. BOTANY SYLLABUS 2011 onwards
SEMESTER VI
SBE – 5 TECHNIQUES IN BOTANY

Hours 2

Credits 2

Course Objectives:

Code: U13BO6SBP05

Marks: 100

This paper gives skills on the preparation of solutions, measurement of stomata and epidermal hairs using micrometer, fresh hand sections and localization of organic compounds, microtome sectioning, DNA and polypeptide separation through electrophoresis and application of statistics and bioinformatics in botany.

Unit - I

Preparations of chemical solutions: Stock solutions: molar, normal, percentage, ppm. Preparation of buffer solutions (Phosphate and acetate).

Unit – II

Micrometry and Histochemistry: Measurements and drawing of stomata, epidermal hairs and pollen of different species using Camera Lucida and digital camera. Histochemical localization of starch, amino acids, lipids, tannins/phenol.

Unit – III

Microtomy: Fixing specimens and preparation of paraffin blocks. Sectioning using rotary microtome and affixing ribbons.

Unit – IV

Biotechnology: Isolation of DNA, separation of DNA (saliva/cauliflower)-Agarose gel. Extraction and separation of protein- SDS-PAGE.

Unit – V

Biostatistics and Bioinformatics: Statistical calculation through SPSS. Alignment- Pair-wise, BLAST.

Book for Study

1. Gahan P.B.1984. Plant histochemistry & cytochemistry – An introduction. Academic Press, London.
2. Wilson K. & Walker J. 1994. Practical biochemistry.4th edition, Cambridge University, London.
3. Krishnamurthy, K.V. 1988. Methods in Plant Histochemistry. Viswanathan Publishers, Madras.
4. Ramakrishnan, P. 2003. Biostatistics. Saras Publications, Nagercoil.

Book for Reference

1. Van Norman R.W. 1971. Experimental biology. IInd Edition, Prentice Hall, Inc., New Jersey.
2. Berlyn & Mische, 1976. Botanical microtechnique & cytochemistry. Iowa State University Press.
3. Plummer, D. T. 1982. An introduction to Practical biochemistry. Tata Mc Graw – Hill publishing company, Ltd, New Delhi.
4. Mani. K. and Vijayraj.D., 2002. Bioinformatics to beginners, Kalaikathir pathippagam, Coimbatore.

HOLY CROSS COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI -2
UG – SEMESTER: VI
SKILL BASED ELECTIVE: 6
RESEARCH METHODOLOGY

CODE: U13DS6SBT06
CREDITS:2

HRS/WEEK:2

COURSE OBJECTIVE:

To help the students develop research skills

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

UNIT: 1- INTRODUCTION TO RESEARCH

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

UNIT: 2 –DATA COLLECTION

Types – Primary and secondary data – Data Processing – Hypothesis testing

UNIT: 3- PLAN AND EXECUTION

Methodology – plan and execution – Analysis - Documentation

UNIT: 4- FORMAT AND PRESENTATION OF PROJECT REPORT

Art of writing and Structure of a project report – Viva - voce

UNIT: 5- PROJECT

Project Work

BOOKS FOR REFERENCE

1. Kothari C.R. Research Methodology, New Delhi: New Age International (P) Ltd Publishers, 2009. Reprint
2. Rahim F.A. Thesis Writing: A Manual for researchers, New Delhi: New Age International Publishers, 1988.Print.
3. Gopalana. Thesis Writing. Chennai: Vijay Nicole,2005.Print.
4. Oliver, Paul, Writing Your Thesis. New Delhi: Sage Publication,2008.Print.

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

HRS / Wk: 1

CODE:U13VE6LVE03

CREDIT : 1

MARKS : 100

OBJECTIVES:

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

UNIT – I: PERSONAL COMPETENCE

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

UNIT - II: MARRIAGE AND FAMILY

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

UNIT – III: MOTHERHOOD

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

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", DominantPublishers.

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
CREDIT:1

CODE:U12VE6LVBO3
MARKS : 100

OBJECTIVE:

- Prepare to practice Christian principles in family, church and society as a youngwomen.
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UNIT - I: ESSENTIALS OF CHRISTIAN FAITH

- Salvation – Deliverance from sin (Is 53), Assurance of salvation and New life (II Cor5:17)
- 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 (Gen24)
- Man and woman as Partners – Abraham and Sarah (Gen16-18,22)
Aquila and Priscilla (Acts 18: 1-3,26)
- Evils to be avoided – Premarital Sex, ExtramaritalSex,
Homosexuality, Abortion(Heb 13: 4, Psalm 127 : 4)
- Ideal Wife – Sarah (I Peter 3: 1-6), Ruth, Eph5

UNIT – III: CHRISTIAN HOME

- Parental Responsibilities and bringing up children – Abraham (Gen22),
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, Ecc12
- Obedience to God - Abraham (Gen 12) ; St.Paul (Acts9)
- Freedom and Accountability
- Justice andLove
- Choices in Life – Making Decisions(Studies, job, lifePartner)
- Model to follow – Who is your model? (John 15:1-17)
- Social Evils – Dowry, Caste discrimination, Accumulation ofwealth
- 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 Gospelwork
- 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
CREDIT: 1

CODE:U12VE6LVC03
MARKS: 100

OBJECTIVES:

- To prepare the students to participate meaningfully in the liturgical celebration and experience GOD in their day todaylife.
- To become a living witness to Jesus Christ in their personal, family and sociallife.

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- Populardevotion

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:

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

