

SACRED HEART COLLEGE (AUTONOMOUS)

Department of Botany

BACHELOR OF BOTANY

Course plan

Academic Year 2018 - 19

Semester 3

COURSE PLAN

PROGRAMME	UG COMMON COURSE 3	SEMESTER	3
COURSE CODE AND TITLE	15U3CCENG05: SCRIPTING THE NATION: READINGS ON INDIAN POLITY, SECULARISM AND SUSTAINABILITY	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	90
FACULTY NAME	BIJO N MATHEW, TOM C. THOMAS		

COURSE OUTCOMES

- To communicate effectively in English.
- To understand the vital aspects of Indian polity viz. democracy, federalism and secularism.
- To respond critically to the questions of sustainable development
- To assimilate and creatively respond to Gandhian thoughts
- To compare and contrast scholarly texts (both content and style)
- To critique the challenges and opportunities that citizens are bound to encounter.

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I - INDIAN POLITY				
1	On the Constitution of India	PPT/Lecture	video	
2	On the Constitution of India	PPT/Lecture	video	
3	On the Constitution of India	Lecture		
4	On the Constitution of India	lecture		
5	A Dialogue on Democracy	PPT/Lecture	video	
6	A Dialogue on Democracy	PPT/Lecture		
7	A Dialogue on Democracy	Lecture		
8	A Dialogue on Democracy	Lecture		

9	The Choice Before Us	PPT/Lecture	video	
10	The Choice Before Us	PPT/Lecture		
11	The Choice Before Us	Lecture		
12	The Choice Before Us	Lecture		
13	Signs of Change	PPT/Lecture	video	
14	Signs of Change	PPT/Lecture		
15	Signs of Change	Lecture		
16	Signs of Change	Lecture		
17	Heaven of Freedom	PPT/Lecture	video	
18	Heaven of Freedom	PPT/Lecture		
19	Heaven of Freedom	Lecture		
20	Brother Abdul Rahman	PPT/Lecture	video	
21	Brother Abdul Rahman	Lecture		
22	Brother Abdul Rahman	Lecture		
23	Brother Abdul Rahman	Lecture		
24	Revision	Discussion		
25	CIA - I			
MODULE II- SECULARISM				
26	Secularism in India	PPT/Lecture		
27	Secularism in India	Lecture	video	
28	Secularism in India	Lecture		
29	Secularism in India	Lecture		
30	Deep Roots	PPT/Lecture		
31	Deep Roots	Lecture	video	
32	Deep Roots	Lecture		
33	Deep Roots	Lecture		
34	The Idea of India	PPT/Lecture		

35	The Idea of India	Lecture	video	
36	The Idea of India	Lecture		
37	The Idea of India	Lecture		
38	Can You Make Out	PPT/Lecture		
39	Can You Make Out	Lecture	video	
40	Can You Make Out	Lecture		
41	Roots	PPT/Lecture		
42	Roots	Lecture	video	
43	Roots	Lecture		
44	Roots	Lecture		
45	Roots	Lecture	Quiz	
46	Revision	Discussion		
47	Seminar	Presentation		
48	Seminar	Presentation		
49	Seminar	Presentation		
MODULE III- PRAXIS OF GANDHIAN THOUGHT				
50	The Condition of India	Lecture	Video	
51	The Condition of India	Discussion		
52	The Condition of India			
53	The Condition of India			
54	The Gandhian Way by C.E. M. Joad- Introduction	Lecture	Video	
55	The Gandhian Way	Lecture, discussion		
56	The Gandhian Way	Lecture, discussion		
57	The Gandhian Way	Lecture, discussion		
58	The Gandhian way	Lecture		

59	The Smaller Gandhis	Discussion	Video	
60	The Smaller Gandhis	Lecture		
61	The Smaller Gandhis	Lecture		
62	The Smaller Gandhis	Lecture		
63	Toba Tek Singh	Lecture	video	
64	Toba Tek Singh	Lecture		
65	Toba Tek Singh	Lecture		
66	Toba Tek Singh	Lecture		
67	Seminar	Presentation		
68	Seminar	Presentation		
69	Seminar	Presentation		
MODULE IV- SUSTAINABILITY				
70	Deep Ecology	PPT/Lecture		
71	Deep Ecology	Lecture	video	
72	Deep Ecology	Lecture		
73	A Different Kind of Perspective	PPT/Lecture		
74	A Different Kind of Perspective	Lecture	video	
75	A Different Kind of Perspective	Lecture		
76	A Different Kind of Perspective	Lecture		
77	Earth's Carrying Capacity	PPT/Lecture		
78	Earth's Carrying Capacity	Lecture		
79	Earth's Carrying Capacity	Lecture		
80	Earth's Carrying Capacity	Lecture		
81	What the Elements have taught me?	PPT/Lecture		
82	What the Elements have taught me?	Lecture	video	
83	What the Elements have taught me?	Lecture		
84	What the Elements have taught me?	Lecture		

85	In the Flood	PPT/Lecture		
86	In the Flood	Lecture	video	
87	In the Flood	Lecture		
88	In the Flood	Lecture		
89	Seminar	Presentation		
90	Revision	Discussion		
	CIA 2			

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	2/8/2018	Presentations
2	28/8/2018	Role Plays

GROUP ASSIGNMENTS/ACTIVITIES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	12/9/2018	Group Discussions
2	20/9/2020	Performances

References

India Retold: Readings on Indian Polity, Secularism and Sustainability

MALAYALAM COURSE PLAN

PROGRAMME	B.Sc BOTANY	SEMESTER	3
COURSE CODE & TITLE	15U1CCMAL3A അരങ്ങും പൊരുളും	CREDITS	4
HOURS/WEEK	4	HOURS/SEM	90
FACULTY NAME	VISHNU RAJ P, Dr. JUSTINA K AUGUSTINE		

COURSE OBJECTIVES

- കഥകളി, നാടകം, സിനിമ തുടങ്ങിയ ദൃശ്യകലകളെക്കുറിച്ച് മനസ്സിലാക്കുക.
- ഭാഷാപഠനം സാഹിത്യാനുഭവത്തിലൂടെ ആവിഷ്കരിക്കുക
- കേരളത്തിലെ കലാരൂപങ്ങളെക്കുറിച്ച് മനസ്സിലാക്കുക .
- സാഹിത്യ പരിചയം ഉണ്ടാക്കുക
- വ്യാവഹാരിക തലത്തിൽ മാതൃഭാഷാപ്രയോഗിക്കുവാനുള്ള കഴിവ് നേടുക
- ഭാഷാപഠനത്തിലൂടെ ആശയവിനിമയശേഷി വർദ്ധിപ്പിക്കുക

Session	Topic	Learning Resources	Teaching Method	Remarks
Module I				
1	ദൃശ്യകലാ സാഹിത്യം സാമാന്യാവലോകനം,	സാഹിത്യചരിത്രങ്ങൾ	Lecturing	
2	ദൃശ്യകലാ സാഹിത്യം സാമാന്യാവലോകനം-നാടകം	സാഹിത്യചരിത്രങ്ങൾ	Lecturing	
3	ദൃശ്യകലാ സാഹിത്യം സാമാന്യാവലോകനം-നാടകം	സാഹിത്യചരിത്രങ്ങൾ	Discussion	
4	മലയാളശാകുന്തളം(നാടകം)	Text	Lecturing	
5	മലയാളശാകുന്തളം(നാടകം) ആമുഖം	Text	Reading	
6	മലയാളശാകുന്തളം(നാടകം)	Text	Group Discussion	
7	അങ്കം ഒന്ന്- ആമുഖം	Text	Lecturing	
8	അങ്കം ഒന്ന്- ആമുഖം	Text	Reading	
9	അങ്കം ഒന്ന്	Text	Group Discussion	
10	അങ്കം രണ്ട് ആമുഖം	Text	Lecturing	

11	അങ്കം രണ്ട് ആമുഖം	Text	Reading	
12	അങ്കം രണ്ട്	Text	Group Discussion	
13	അങ്കം -	Text	Lecturing	
14	അങ്കം രണ്ട്	Text	Reading	
15	അങ്കം മൂന്ന്	Text	Group Discussion	
16	അങ്കം മൂന്ന്	Text	Group Discussion	
17	അങ്കം മൂന്ന്	Text	Group Discussion	
18	അങ്കം നാല്	Text	Lecturing	
19	അങ്കം നാല്	Text	Reading	
20	അങ്കം നാല്	Text	Group Discussion	
21	അങ്കം നാല്	Text	Lecturing	
22	അങ്കം നാല്	Text	Reading	
23	അങ്കം നാല്	Text	Group Discussion	
Module II				
24	നളചരിതം രണ്ടാംദിവസം (ആട്ടക്കഥ)	Text	Lecturing	
25	നളചരിതം രണ്ടാംദിവസം (ആട്ടക്കഥ)	Text	Group Discussion	
26	രംഗം അഞ്ച്	Text	Lecturing	
27	രംഗം അഞ്ച്	Text	Reading	
28	രംഗം ആറ്	Text	Group Discussion	
29	രംഗം ആറ്	Text	Group Discussion	
30	Internal Assessment 1	Text		
31	Question paper discussion	Text	Group Discussion	
32	രംഗം ആറ്	Text	Lecturing	
33	രംഗം ഏഴ്	Text	Reading	
34	രംഗം ഏഴ്	Text	Group Discussion	
35	രംഗം എട്ട്	Text	Lecturing	
36	രംഗം എട്ട്	Text	Reading	
37	രംഗം ഒൻപത്	Text	Group Discussion	
38	രംഗം ഒൻപത്		Lecturing	
39	രംഗം പത്ത്	Text	Reading	
40	രംഗം പത്ത്	Text	Group Discussion	
41	നളചരിതം - ഒരു അവലോകനം	Text	Lecturing	
42	നളചരിതം - ഒരു അവലോകനം	Text	Reading	
Module III				
43	മലയാളനാടകചരിത്രം - അവലോകനം	സാഹിത്യചരിത്രങ്ങൾ	Lecturing	
44	മലയാളനാടകചരിത്രം - അവലോകനം	സാഹിത്യചരിത്രങ്ങൾ	Group Discussion	
45	മലയാള നാടകത്തിലെ - നൂതന പ്രവണതകൾ	സാഹിത്യചരിത്രങ്ങൾ	Lecturing	
46	ഒരു മാധ്യമേനൽ പ്രണയരാവ്-ആമുഖം	Text	Group Discussion	
47	ഒരു മാധ്യമേനൽ പ്രണയരാവ്-ആമുഖം	Text	Lecturing	
48	നാടകവിശകലനം	Text	Lecturing	

49	നാടകവിശകലനം	Text	Group Discussion	
50	നാടകവിശകലനം	Text	Group Discussion	
51	നാടകാവതരണം	Text	Performance	
52	നാടകാവതരണം	Text	Performance	
53	നാടകവിശകലനം	Text	Group Discussion	
54	നാടകവിശകലനം	Text	Group Discussion	
55	നാടകാവതരണം	Text	Performance	
56	നാടകാവതരണം	Text	Performance	
57	നാടകാവതരണം	Text	Performance	
58	നാടകവിശകലനം	Text	Group Discussion	
59	നാടകാവതരണം	Text	Performance	
60	നാടകാവതരണം	Text	Performance	
61	നാടകാവതരണം	Text	Performance	
62	നാടകവിശകലനം	Text	Group Discussion	
63	സംവാദം	Text	Group Discussion	
Module IV				
64	സിനിമയുടെ ചരിത്രം	Text	Group Discussion	
65	വാക്കും ദൃശ്യവും	Text	Presentation	
66	അധ്യായം 1	Text	Presentation	
67	അധ്യായം 2	Text	Presentation	
68	ചെമ്മീൻ	Text	Presentation	
69	സിനിമ പ്രദർശനം	Film	Screening	
70	സിനിമ പ്രദർശനം	Film	Screening	
71	സിനിമ വിശകലനം	Text	Group Discussion	
72	സിനിമ വിശകലനം	Text	Group Discussion	
73	വിധേയൻ	Text	Group Discussion	
74	സിനിമ പ്രദർശനം	Film	Screening	
75	സിനിമ പ്രദർശനം	Film	Screening	
76	സിനിമ വിശകലനം	Text	Group Discussion	
77	പഥേർ പാഞ്ചലി	Text	Group Discussion	
78	പഥേർ പാഞ്ചലി	Text	Group Discussion	
79	സിനിമ പ്രദർശനം	Film	Screening	
80	സിനിമ പ്രദർശനം	Film	Screening	
81	സിനിമ പ്രദർശനം	Text	Presentation	
82	സിനിമ വിശകലനം	Text	Group Discussion	
83	സിനിമ വിശകലനം	Text	Group Discussion	
84	സിനിമസംവാദം	Text	Group Discussion	
87	സിനിമസംവാദം	Text	Group Discussion	
85	സെമിനാർ	Text	Presentation	
86	സെമിനാർ	Text	Presentation	
87	സെമിനാർ	Text	Presentation	
88	സെമിനാർ	Text	Presentation	
89	Revision	Text	Presentation	
90	Evaluation of the course	Interaction	Group Discussion	

ASSIGNMENTS

Sl no	Date of submission/completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	By October	അനുരൂപണസിനിമയുടെ സവിശേഷതകൾ
2		കേരളത്തിലെ ദൃശ്യകലാപാരമ്പര്യം

SEMINAR

	Date of submission/completion	Topic of semiar & Nature of seminar (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	By October	പാഠഭാഗങ്ങളുടെ അവതരണം
2		പാഠഭാഗങ്ങളുടെ അവതരണം

Referance :

1.നാടകദർശനം -ജി .ശങ്കരപ്പിള്ള

2.സിനിമയുടെ ലോകം - അടൂർ ഗോപാലകൃഷ്ണൻ

HINDI COURSE PLAN

PROGRAMME	BACHELOR OF SCIENCE - BOTANY	SEMESTER	3
COURSE CODE AND TITLE	15U3CCHIN3A – POETRY AND FICTION	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	90
FACULTY NAME	Dr. MINIPRIYA R, SYAMLAL M. S		

COURSE OBJECTIVES

- To describe the various aspects of Hindi poetry in context of socio-cultural and political condition of that period.
- To recognise the social significance of a literary work in any language.
- To develop creative thinking capacity through literature.
- To acquire ability to read, appreciate and analyze Novel independently
- To develop knowledge of literary forms in Hindi Short story and effective reading skills.

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	General Introduction about the history of Hindi Poetry and Stories	Lecture/PPT		
2	Kabirdas	Lecture/PPT		
3	Kabirdas	Lecture/PPT		
4	General Introduction about the history of Hindi Novel and introducing the prescribed textbook.	Lecture/PPT		
5	Introduction of the author Rajendra Awasthi	Lecture/ PPT		
6	Kabirdas	Lecture/Discussion	Seminar	
7	Akeli Awaz (Novel)	Lecture		
8	Sarojmruthi, Introduction of the author	Lecture/ PPT		
9	Sarojmruthi	Lecture/Discussion		
10	Akeli Awaz (Novel)	Lecture		
11	Akeli Awaz (Novel)	Lecture		

12	Sarojsmruthi	Lecture/Discussion		
13	Sarojsmruthi	Lecture/Discussion	Seminar	
14	Akeli Awaz (Novel)	Lecture		
15	Akeli Awaz (Novel)	Lecture/Discussion		
16	Aansuom Ki Holi, Introduction of the author	Lecture/ PPT		
17	Aansuom Ki Holi	Lecture/ PPT		
18	Akeli Awaz (Novel)	Lecture		
19	Akeli Awaz (Novel)	Lecture		
20	Aansuom Ki Holi	Interaction	Seminar	
21	Akeli Awaz (Novel)	Lecture		
22	Aansuom Ki Holi	Lecture/PPT		
23	Aansuom Ki Holi	Lecture/PPT		
24	Akeli Awaz (Novel)	Lecture		
25	Akeli Awaz (Novel)	Lecture		
26	Nach,Introduction of the author	Lecture/PPT		
27	Nach	Lecture/PPT		
28	Akeli Awaz (Novel)	Lecture/Discussion		
29	Nach	Lecture/Discussion		
30	Nach	Interaction	Seminar	
31	Revision	Lecture		
32	CIA I (I Hr Exam)			
	MODULE II			
33	Tulsidas	Lecture/PPT		
34	Tulsidas	Lecture		
35	Akeli Awaz (Novel)	Lecture		
36	Akeli Awaz (Novel)	Lecture		
37	Tulsidas	Lecture/ Discussion	Seminar	
38	Khamosh Dhadkaneim, Introduction of the author	Lecture/PPT		
39	Akeli Awaz (Novel)	Lecture		
40	Akeli Awaz (Novel)	Interaction		
41	Khamosh Dhadkaneim	Interaction	Seminar	
42	Akeli Awaz (Novel)	Lecture/Discussion		
43	Khamosh Dhadkaneim	Lecture/PPT		
44	Khamosh Dhadkaneim	Lecture		
45	Akeli Awaz (Novel)	Lecture		
46	Akeli Awaz (Novel)	Interaction		
47	Rani Maa Ka Chabootara, Introduction of the author	Lecture		
48	Rani Maa Ka Chabootara	Lecture		
49	Akeli Awaz (Novel)	Lecture		
50	Akeli Awaz (Novel)	Lecture		
51	Rani Maa Ka Chabootara	Discussion	Seminar	
52	Akeli Awaz (Novel)	Lecture		
53	Akeli Awaz (Novel)	Lecture		
54	Rani Maa Ka Chabootara	Lecture/ Discussion		

55	Sthriyam, Introduction of the author	Lecture/PPT		
56	Akeli Awaz (Novel)	Lecture		
57	Sthriyam	Lecture		
58	Sthriyam	Lecture/ Discussion		
59	Sthriyam	Discussion	Seminar	
60	Revision	Interaction		
61	Revision	Interaction		
62	CIA II (2 Hrs Exam)			
MODULE II				
63	Meerabai	Lecture/PPT		
64	Meerabai	Lecture		
65	Akeli Awaz (Novel)	Lecture		
66	Akeli Awaz (Novel)	Lecture		
67	Meerabai	Lecture/Discussion	Seminar	
68	Akeli Awaz (Novel)	Lecture/Discussion		
69	Meerabai	Interaction	Seminar	
70	Akeli Awaz (Novel)	Lecture		
71	Akeli Awaz (Novel)	Lecture/Discussion		
72	Prem Patra, Introduction of the Author	Lecture/PPT		
73	Prem Patra	Lecture/Discussion	Seminar	
74	Akeli Awaz (Novel)	Lecture		
75	Prem Patra	Lecture		
76	Prem Patra	Lecture/ Discussion	Seminar	
77	Aparadh, Introduction of the Author	Lecture/PPT		
78	Revision	Interaction		
79	Revision	Interaction		
80	Aparadh	Lecture		
81	Aparadh	Lecture	Seminar	
82	Aparadh	Lecture/Discussion		
83	Akeli Awaz (Novel)	Lecture/Discussion	Seminar	
84	Aparadh	Lecture		
85	Aparadh	Lecture		
86	Seminar	Discussion	Seminar	
87	Seminar	Discussion		
88	Revision	Interaction		
89	Revision	Interaction		
90	Evaluation of the course			

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines (B.Sc. Botany)

GROUP ASSIGNMENTS/ACTIVITIES – Details & Guidelines

SL NO	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	November	Exercise activity based on Novel (Group Discussion).
2	November	Review a Poem from the textbook 1 and reference, Writing (Group Activity).

References

- Nayi Said Ki Kavita , Ganesh Pandey ,Vani Prakashan, New Delhi .
- Hindi Upanyas Naya Path ,Hemant Kukreti , Vani Prakashan, New Delhi .

Web resource references:

- epustakalay.com
- www.hindikunj.com

SL NO	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	Assignment (October)	Review of a lesson based on the textbook 2 and reference, Writing (Individual)
2	Seminar (October)	Presentation on a given topic based on the text book I and reference – oral (Individual)

SANSKRIT COURSE PLAN

PROGRAMME	BACHELOR OF SCIENCE, BOTANY	SEMESTER	3
COURSE CODE AND TITLE	15U3CCSAN3A: TRANSLATION AND COMMUNICATION	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	90
FACULTY NAME	Dr.VIJAYARAJAN K.U		

COURSE OBJECTIVES

- To learn the art of translation
- To understanding translation as a Linguistic activity
- To understand translation as a cultural ,economic and profssional activity
- To familiarise the technology of Translation
- To understand moral values through Drama
- To inculcating students with reading and communication skills in Sanskrit
- To understand the tools to beautify the literature through Drama and Translation
- To identify the richness of Indian Literature

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	Introducing Translation	Lecture		
2	History of translation	Discussion		
3	History of Bible translation	Lecture		
4	History of Arabic translation	Lecture		
5	History of Indian translation	Lecture		
6	Qualities of translator	Chalk n talk		
7	Tools of Translation	Lecture		
8	Glossaries, Dictionaries	Chalk n talk		
9	News paper style	Lecture		
10	Theories of translation	Lecture		
11	Applied linguistics	Discussion		
12	Morphology	Discussion		

13	Syntax	PPT/Lecture		
14	Revision			
MODULE II				
15	Source language	PPT/Lecture		
16	Target language	Chalk n talk		
17	Transliteration	Lecture		
18	Word to word translation	Lecture		
19	Faithful translation	Lecture		
20	Recreation	Game		
21	Unit of translation	Game		
22	Sentence as the unit	PPT/Lecture		
23	Paragraph as the unit	PPT/Lecture		
24	Science related translation	Lecture		
25	Cultural importance in translation	Lecture		
CIA-1				
26	Poem translation	Lecture		
27	Prose translation	Chalk n talk		
28	Idioms and proverbs	Chalk n talk		
29	Translation in Modern age	Discussion		
30	Limitations of translation	Discussion		
31	Translation of person's name	Lecture		
32	Revision			
MODULE III				
33	Introduction Abhijnanashakunthalam	Lecture		
34	Prathamanga	Lecture		
35	Dushyantha's hunting	Lecture		
36	Dushyanthas meeting with Shakunthala	Lecture		
37	Shakunthala's history	PPT/Lecture		
38	Dvitheeyanga- Samagamam	PPT/Lecture		
39	Dushyantha's talk with Mandavya	PPT/Lecture		
40	Sages meeting with Dushyantha	Lecture		
41	Mandavya going to palace	Lecture		
42	Thritheeyangam	Chalk n talk		
43	Dushyantha 's talk with shakunthala	Discussion		
44	Durvasa's visiting and curse	Roleplay		
45	Chathurthanga	Discussion		
46	Shakunthala's departure from Ashrama	PPT/Lecture		
47	Kannva's advice to Shakunthala	PPT/ Lecture		
48	Revision			
MODULE IV				
50	Introduction Mrichakatika drama	PPT/Lecture		
51	Charudatha	PPT/Lecture	Video	
52	Vasanthasena	PPT/Lecture		
53	Vasanthasena's visiting	PPT/Lecture		

54	Rajasyala Samsthanaka	Lecture		
55	Vasanthasena 's meeting with Charudatha	Lecture		
56	Matithreya's conversation with Radanika	PPT/Lecture		
57	Rohasena	PPT/Lecture		
58	Dvitheeyanka	PPT/Lecture		
59	Gambling incident	PPT/Lecture		
60	Catching Gambler	PPT/Lecture		
61	Escaping	PPT/Lecture		
CIA - II				
62	Vasanthasena's talk with her servant	Chalk n talk		
63	thritheeyanka	Lecture		
64	Rebhila's music discussion	Lecture	Group discussion	
65	Sharvilaka –the thief	Lecture		
66	Taking gold from Maithreya	PPT/Lecture		
67	Charudatha talk with Maithreya	PPT/Lecture		
68	Dootha's talking	PPT/Lecture		
69	Revision			
70	Revision			
71	Revision			
72	Revision			

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	13/08/2018	Kalidasa's Dramas
2	21/08/2018	Shakunthal in Mahabharatha

GROUP ASSIGNMENTS/ACTIVITIES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	09/09/2018	The modern possibilities for Translation
2	24/09/2018	Shakunthalam and Medias

References

Vivarttanattinte Bhasasatrabhoomika, Prabodhacandran V.R., Kerala Bhasha Institute, Trivandrum, 1986, pp. 38-39

Vivarttanam, A group of authors, Kerala Bhasha Institute, 1990, Chapter, 3&Preface of N.V. Krishna Warriar, pp. 3-7.

Sakunthalaprabashika, Prof. M.V. Gopalakrishnan

Mricchakatikakathasamgrham, Prof. P.C. Vasudevan Elayat

FRENCH COURSE PLAN

PROGRAMME	BOTANY	SEMESTER	3
COURSE CODE AND TITLE	15U3CCFRN3A – AN ADVANCED COURSE IN FRENCH I	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	90

COURSE OBJECTIVES

- To understand the basic concepts of French language including grammar, vocabulary and sentence structure
- To understand the basic communication skills necessary for living in France and French speaking countries.
- To describe oneself and ones surroundings using a repertory of words and expressions in a simple and structured grammatical manner.
- To develop business communication skills
- To express an issue of concern including topics like environmental, social or health issues, enumerate its causes and consequences and suggest solutions
- To understand the mannerisms, culture and tradition of France and Francophone countries and compare it to one's own country and develop co-cultural feeling
- To understand and appreciate the history of France and Francophone countries and compare it to one's own country
- To understand the special features of France including gastronomy, social institutions, policis, the present French scenario and compare it to one's own country

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	Revision of French Basics	Role play, games		
2	French Basics	Chalk n talk		
3	French Basics	Chalk and Talk		
4	French Basics	Chalk and Talk		
5	French Basics	Chalk and Talk		
6	French Basics	Chalk and Talk		
7	French Basics	Chalk and Talk		
8	French Basics	Chalk and Talk		
9	Unit 1 – Le passé compose	Chalk and talk		
10	Past tense	lecture		
11	Past tense –narrate an event	Communication skills		
12	Past tense –narrate an event	Oral		
13	Past tense –narrate an event	Oral		
14	Narrate the life of a person	Communication Skills		
15	Narrate a positive/Negative event	Communication Skills		
16.	To learn the entire life	Role play		
17.	One’s opinion on learning the entire life	Role Play		
18.	Interview on learning the entire life	Role Play		
19.	Sharing experiences on learning during old age	Debate/Discussion		
20	Reading Comprehension	Understanding Skills		
21.	Reading Comprehension	Understanding Skills		
22.	Reading Comprehension	Understanding Skills		
23.	Vocabulary building	Games		
24	Communicative skills- emotions	Chalk and talk, oral		
25	Emotions of a teacher	Expression oral		
26.	Emotion of a student in a language class	Discussion		
27	Expressions related to emotions	Vocabulary building games		
28	Language network	Discussions ICT		
29	French culture – EU Rights	Discussions, comparison		
30	Class test of Unit 1			
MODULE II				
31	Describe one’s house	Game		
32	Describe one’s Furniture	Lecture		
33	Grammar-prepositions	Lecture		
34	Making Sentences	Games, Role plays		
35	Describe your friend’s house	discussion		
36	Vocabulary Building	Games		
37	Pronoun Y, Locate things	Chalk and talk		
38	Sentence Construction	Games		
39	Type of lodging	Roleplay, listening		

		exercice		
40	Preferences on type of lodging	Roleplay		
41	Comparison, describe one's favourite place	Chalk and Talk, role play		
42	Compare 2 cities/countries	Debate		
43	Vocabulary Building	Games		
44	Country or country side - debate	Lecture/Discussion		
45	Revision			
46	Revision			
47	Revision			
48	Revision			
49	Revision			
50	Revision			
51	Revision			
CIA-1				
52	Discussion of CIA			
53	Vocabulary Building	Games		
MODULE III				
54	Describe a natural product	PPT/Lecture		
55	Describe an Indian Product	PPT/Lecture		
56	Positives and negatives of a product	PPT/Lecture		
57	Advertise a product	PPT		
58	Vocabulary-parts of the body, expressing pain	Music, GAMES		
59	Explain problem which you face	Lecture/Role play		
60	Mail on seeking advice, describing a problem	Role play		
61	Telephonic conversation	Role play		
62	Vocabulary Building	Games		
63	Posting on a problem which you face	Roleplay		
64	Giving advice/grammar-imperative	Chalk and talk, roleplay		
65	webdoctor	Communication skills		
66	Writing a mail and receiving response	Communication Skills		
67	French Culture -Vacation sports	PPT/Discussion		
68	Sports in India	Debate		
69	Advantages of doing sports	Debate/Discussion		
70	Adventure sports in India	Discussion		
71	Sport which you like	Discussion		
CIA II				
MODULE IV				
72	Past tense- imparfait	Chalk and talk		
73	Sentence construction using imparfait	Role play		

74	Narrate an event using imparfait	Role play		
75	Describing something	Discussion		
76	Vocabulary Building	Games, Music		
77	French movie	Audio visual		
78	French Movie	Audio Visual		
79	Describe a past event-may 68	Chalk n talk/Reading Comprehension		
80	Describe an event in your country	Discussion		
81	Describe an historical event/incident	Discussion		
82	Describe an historical event/incident	Discussion		
83	Talk about an event in the past	Discussion		
84	Describing a place, childhood event	Roleplay		
85	Narrate a positive childhood event	Roleplay		
86	Conversation on a past happening	Role play		
87	Narrate a negative happening	Role play		
88	A historical event which you like	Speaking practice		
89	French Culture- peaceful demonstrations	discussion		
90	Peaceful demo in India(your country)	discussion		

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	5-7-2018	Preparing a guide for French tourists on basic communication skills in French and Malayalam
2	12-9-2018	roleplays

References

Version Originale, site web

Botany COURSE PLAN

PROGRAMME	BACHELOR OF SCIENCE (BOTANY)	SEMESTER	3
COURSE CODE AND TITLE	15U3CRBOT3 - BRYOLOGY, PTERIDOLOGY, GYMNOSPERMS & PALAEOBOTANY	CREDIT	Theory Credit 3, Practical Credit 1
HOURS/WEEK	5	HOURS/SEM	Theory: 54 hrs.; Practical: 45 hrs.
FACULTY NAME	Dr. I'ma Neerakkal, Princy Mol A. P., Dr. Lesly Augustine		

COURSE OBJECTIVES

- To appreciate the morphological diversity of bryophytes, pteridophyte, and gymnosperms
- To classify and co-relate the reproductive behaviour in bryophytes, pteridophyte, and gymnosperms
- To evaluate the evolutionary trends in bryophytes, pteridophyte, and gymnosperms
- To distinguish the ecological significance of bryophytes, pteridophyte, and gymnosperms
- To utilize the economic significance of bryophytes, pteridophyte, and gymnosperms
- To compare the habitat variation in bryophytes, pteridophyte, and gymnosperms
- To compile the diversity and distributions of prehistoric flora

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
BRYOLOGY (Theory: 16 hours; Practical: 9 hours)				
Module 1, 2 hrs.				
1	Introduction, general characters	PPT	video	
2	Classification, Evolution of Bryophytes.	PPT/Lecture	video	
Module 2 - 12 hrs.				
3	Morphology	PPT/Lecture	video	
4	Anatomy and reproduction in <i>Riccia</i>	PPT/Lecture	e-resource	
5	Anatomy and reproduction in <i>Riccia</i>	PPT/Lecture	video	
6	Anatomy and reproduction in <i>Marchantia</i>	PPT/Lecture	video	
7	Anatomy and reproduction in <i>Marchantia</i>	Lecture		
8	Anatomy and reproduction in <i>Anthoceros</i>	Lecture	video	
9	Anatomy and reproduction in <i>Anthoceros</i>	Lecture	video	
10	Anatomy and reproduction in <i>Funaria</i>	Lecture	video	
11	Anatomy and reproduction in <i>Funaria</i>	PPT/Lecture	video	

12	Evolution of sporophyte and gametophyte	PPT/Lecture	video	
13	Evolution of sporophyte and gametophyte	PPT/Lecture	video	
14	Evolution of sporophyte and gametophyte	PPT/Lecture	video	
MODULE II - 2 hrs				
15	Importance of Bryophytes, Prevention of soil erosion, pollution monitoring and control, Antibiotics, Horticultural importance.	PPT/Lecture	video	
16	Importance of Bryophytes, Prevention of soil erosion, pollution monitoring and control, Antibiotics, Horticultural importance.	Lecture	video	
Practical - 15 hrs.				
17	Make micro preparations of the types mentioned. Study vegetative and reproductive structures	Hands-on Session		
18	<i>Riccia</i>	Hands-on Session		
19	<i>Riccia</i>	Hands-on Session		
20	<i>Riccia</i>	Hands-on Session		
21	<i>Marchantia</i>	Hands-on Session		
22	<i>Marchantia</i>	Hands-on Session		
23	<i>Marchantia</i>	Hands-on Session		
24	<i>Anthoceros</i>	Hands-on Session		
25	<i>Anthoceros</i>	Hands-on Session		
26	<i>Anthoceros</i>	Hands-on Session		
27	<i>Funaria</i>	Hands-on Session		
28	<i>Funaria</i>	Hands-on Session		
29	<i>Funaria</i>	Hands-on Session		
30	sporophyte and gametophyte	Hands-on Session		
31	sporophyte and gametophyte	Hands-on Session		
PTERIDOLOGY (Theory:16 hours; Practical :24 hours)				
Module 1 (2 hrs.)				
1	Introduction, general characters, classification and evolution of Pteridophytes	PPT/Lecture	Video	
2	Introduction, general characters, classification and evolution of Pteridophytes	PPT/Lecture	Video	
Module 2 (14 hrs.)				
Structural organization of sporophyte and gametophyte (development of sex organs not necessary) of the following types with special reference to stelar structure, heterospory and seed habit.				
3	<i>Psilotum</i>	PPT/Lecture	Video	
4	<i>Psilotum</i>	PPT/Lecture	Video	
5	<i>Lycopodium</i>	PPT/Lecture	Video	
6	<i>Lycopodium</i>	PPT/Lecture	Video	
7	<i>Selaginella</i>	PPT/Lecture	Video	
8	<i>Selaginella</i>	PPT/Lecture	Video	
9	<i>Selaginella</i>	PPT/Lecture	Video	
10	<i>Equisetum</i>	PPT/Lecture	Video	
11	<i>Equisetum</i>	PPT/Lecture	Video	
12	<i>Pteris</i>	PPT/Lecture	Video	
13	<i>Pteris</i>	PPT/Lecture	Video	

14	<i>Marsilea</i>	PPT/Lecture	Video	
15	<i>Marsilea</i>	PPT/Lecture	Video	
16	<i>Marsilea</i>	PPT/Lecture	Video	
Practical (18 hrs.)				
Make micro preparations to study stelar structure and sporangia of the mentioned types. Identify at sight, noting the morphology.				
17	<i>Psilotum</i>	Hands-on Session		
18	<i>Psilotum</i>	Hands-on Session		
19	<i>Psilotum</i>	Hands-on Session		
20	<i>Lycopodium</i>	Hands-on Session		
21	<i>Lycopodium</i>	Hands-on Session		
22	<i>Lycopodium</i>	Hands-on Session		
23	<i>Selaginella</i>	Hands-on Session		
24	<i>Selaginella</i>	Hands-on Session		
25	<i>Selaginella</i>	Hands-on Session		
26	<i>Equisetum</i>	Hands-on Session	Video	
27	<i>Equisetum</i>	Hands-on Session		
28	<i>Equisetum</i>	Hands-on Session		
29	<i>Pteris</i>	Hands-on Session		
30	<i>Pteris</i>	Hands-on Session		
31	<i>Pteris</i>	Hands-on Session		
32	<i>Marsilea</i>	Hands-on Session		
33	<i>Marsilea</i>	Hands-on Session		
34	<i>Marsilea</i>	Hands-on Session		
GYMNOSPERMS (Theory: 14 hours; Practical :12 hours)				
Module 1 (2 hrs.)				
1	Introduction, general characters, classification, origin and evolutionary significance	PPT/Lecture	Video	
2	Introduction, general characters, classification, origin and evolutionary significance	PPT/Lecture	Video	
Module 2 (12 hrs.)				
Study of morphology, anatomy and reproductive features				
3	<i>Cycas</i>	PPT/Lecture	Video	
4	<i>Cycas</i>	PPT/Lecture	Video	
5	<i>Cycas</i>	PPT/Lecture	Video	
6	<i>Cycas</i>	PPT/Lecture	Video	
7	<i>Pinus</i>	PPT/Lecture	Video	
8	<i>Pinus</i>	PPT/Lecture	Video	
9	<i>Pinus</i>	PPT/Lecture	Video	
10	<i>Pinus</i>	PPT/Lecture	Video	
11	<i>Gnetum</i>	PPT/Lecture	Video	

12	<i>Gnetum</i>	PPT/Lecture	Video	
13	<i>Gnetum</i>	PPT/Lecture	Video	
14	<i>Gnetum</i>	PPT/Lecture	Video	
Practical (12 hrs.)				
Study of the morphology, anatomy and reproductive structures of the types mentioned				
15	<i>Cycas</i>	Hands-on Session		
16	<i>Cycas</i>	Hands-on Session		
17	<i>Cycas</i>	Hands-on Session		
18	<i>Cycas</i>	Hands-on Session		
19	<i>Pinus</i>	Hands-on Session		
20	<i>Pinus</i>	Hands-on Session		
21	<i>Pinus</i>	Hands-on Session		
22	<i>Pinus</i>	Hands-on Session		
23	<i>Gnetum</i>	Hands-on Session		
24	<i>Gnetum</i>	Hands-on Session		
25	<i>Gnetum</i>	Hands-on Session		
26	<i>Gnetum</i>	Hands-on Session		
PALAEOBOTANY (Theory: 8 hours)				
Module 1 (3 hrs.)				
1	Introduction, study of geological time scale, formation of fossil, fossil types & technique of study, fossil as a fuel.	PPT/Lecture	Video	
2	Introduction, study of geological time scale, formation of fossil, fossil types & technique of study, fossil as a fuel.	PPT/Lecture	Video	
3	Introduction, study of geological time scale, formation of fossil, fossil types & technique of study, fossil as a fuel.	PPT/Lecture	Video	
Module 2 (4 hrs.)				
Detailed study of				
4	Fossil Pteridophyte: <i>Rhynia</i>	PPT/Lecture	Video	
5	Fossil Pteridophyte: <i>Rhynia</i>	PPT/Lecture	Video	
6	Fossil Gymnosperm: <i>Williamsonia</i>	PPT/Lecture	Video	
7	Fossil Angiosperm: <i>Palmoxylon</i>	PPT/Lecture	Video	
8	Indian contribution to Palaeobotany	PPT/Lecture		

Reference

- Arnold H.N, 1967. Introduction to Paleobotany, Tata Mc Graw- Hill, New Delhi
- Biswas & John B .M, 2004.Gymnosperms, Naresa Publishing house.
- Bower F.O, 1935. Primitive Land Plants. Cambridge, London.

- Chopra R.N and Kumar P. K, 1988. Biology of Bryophytes, Wiley Eastern Ltd, New Delhi.
- Coutler J.M & Chamberlain C. J, 1958. Morphology of Gymnosperms. Central Book Depot Allahabad.
- Dutta S.C, 1991, An Introduction To Gymnosperms, Kalyan Publishing Co. New Delhi.
- Mamatha Rao, 2009, Microbes and Non flowering plants- impact and application Ane Boopks Pvt Ltd.
- Rasheed A. 1999, An Introduction to Pteridophyta, Vikas Publishing House, New Delhi.
- Rasheed A. 2000, An Introduction To Bryophyta, Vikas Publishing House, New Delhi.
- Singh, Pande Jain 2007, Diversity of Microbes and Cryptogam, Rastogi Publications
- Vashista B. R, 1993. Bryophyta,: S Chand & Co., New Delhi.
- Vashista B. R, 1993. Gymnosperms, S Chand & Co., New Delhi.
- Vashista B. R, 1993. Pteridophyta, S Chand & Co., New Delhi

Websites

<http://www.artdata.slu.se/guest/SSCBryo/SSCBryo.html>

<http://www.northernontarioflora.ca/links.cfm?val=bryophytes>

<http://bryophytes.plant.siu.edu/>

<http://worldofmosses.com/>

<http://www.unomaha.edu/~abls/>

<http://www.anbg.gov.au/bryophyte/index.html>

<http://www.bryoecol.mtu.edu/>

<http://www.mobot.org/MOBOT/tropicos/most/Glossary/glosefr.html>

http://www.fairhavenbryology.com/Master_Page.html

<http://www.mygarden.ws/fernlinks.htm>

<http://www.anbg.gov.au/fern/index.html>

<http://www.bioimages.org.uk/HTML/T77.HTM>

http://botany.csd.tamu.edu/FLORA/gallery/gallery_query.htm

<http://homepages.caverock.net.nz/~bj/fern/>

<http://www.home.aone.net.au/~byzantium/ferns/>

<http://www.northernontarioflora.ca/links.cfm?val=pteridophytes>

http://www.fiu.edu/~chusb001/giant_equisetum.html

<http://www.mygarden.ws/fernlinks.htm>

http://www.nrm.se/en/menu/researchandcollections/departments/cryptogamicbotany/collections/pteridophytes.652_en.html

<http://www.amerfernsoc.org/>

<http://www.gymnosperms.org/>

<http://www.plantapalm.com/vce/toc.htm>

<http://www.cycad.org/conservation.htm>

http://allwebhunt.com/cgi.cfm/Top/Science/Biology/Flora_and_Fauna/Plantae/Cycadophyta/Cycadopsida/Cycadaceae/Cycas

<http://www.forestgiants.com/>

<http://www.azpalmandcycad.org/>

COURSE PLAN

PROGRAMME	BACHELOR OF BOTANY	SEMESTER	3
COURSE CODE AND TITLE	15U3CPZOO3: ZOOLOGY COMPLEMENTARY FOR BOTANY HUMAN PHYSIOLOGY AND IMMUNOLOGY	CREDIT	3
HOURS/WEEK	3	HOURS/SEM	54
FACULTY NAME	JOBIMJ, GISHA SIVAN, VIDHU V V		

COURSE OBJECTIVES

- To understand nutrition and deficiency disorders
- To understand the functional aspects of respiration and respiratory disorders
- To understand functional aspects of cardiovascular circulation, disorders and clinical aspects.
- To understand structure and function of human nitrogenous excretory organ and renal disorders.
- To understand structural and functional features of neuromuscular system and its disorders.
- To understand functional characteristics of hormonal glands and its disorders.
- To understand the basics of immunology, antigens and antibodies, antigen antibody reactions and its clinical applications.
- To understand the applications, new developments and recent trends in immune research.

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
	Module 1 : Nutrition			
1	Malnutrition disorders,	ICT Enabled (ppt, animations, images & video clippings)		
2	Vitamin deficiencies	ICT Enabled (ppt, images)		
3	Mineral deficiencies (Iron, Calcium and Iodine)	ICT Enabled (ppt, images)	Video	
	Module 2: Respiration			
4	Transport of O ₂ and CO ₂ in blood.	ICT Enabled (ppt & images, video clippings)	Video	
5	Respiratory disorders – Dyspnoea, Hypoxia, Asphyxia.	ICT Enabled (ppt & images, charts, video clippings)		
6	Hypo and Hypercapnia,	ICT Enabled (ppt & images, video clippings)		
7	CO poisoning,	ICT Enabled (ppt & animations, images, video clippings)		
8	Smoking and its physiological effects.	ICT Enabled (ppt & images, video clippings)		
	Module 3: Circulation			
11	Blood – Composition and function.	ICT Enabled (ppt & images, video clippings)		
12	Brief account of mechanism of blood clotting.	ICT Enabled (ppt & images, video clippings)		
13	Disorders of blood clotting – Haemophilia, cerebral and pulmonary thrombosis, Cerebral haemorrhage.	ICT Enabled (ppt & images, video clippings)		

14	Blood pressure and factors controlling it; electrocardiogram. Cardiovascular disorders – Arteriosclerosis, Myocardial infraction.	ICT Enabled (ppt & images, charts, video clippings)		
15	Angiogram and Angioplasty.	ICT Enabled (ppt & images, video clippings)		
Module 4 Excretion				
16	Excretion: Structure of human nephron	ICT Enabled (ppt, animations, images & video clippings)		
17	composition of urine – normal and abnormal constituents	ICT Enabled (ppt, images)		
18	urine formation (ultra-filtration, selective reabsorption, tubular secretion and counter current mechanism)	ICT Enabled (ppt, animations, images & video clippings)		
19	CIA 1	1 Hrs		
Module 5 Neurophysiology				
20	Structure of typical neuron, myelinated and non myelinated nerve fibres.	ICT Enabled (ppt & images, charts, video clippings)		
21	Nerve impulse – initiation and propagation of nerve impulse, All or none law, Saltatory conduction, Synaptic transmission.	ICT Enabled (ppt & images, charts, video clippings)		
22	Neurotransmitters.	ICT Enabled (ppt & images, video clippings)		
23	Brianwaves, Electroencephalogram.	ICT Enabled (ppt & images, video clippings)		
24	Neural disorders – Parkinson’s disease, Epilepsy, Alzheimer’s syndrome, Dyslexia.	ICT Enabled (ppt & images, video clippings)		
Module 6. Muscle Physiology				
25	Striated, Non striated and Cardiac muscle	ICT Enabled (ppt, animations, images & video clippings)		

26	Ultra-structure of striated muscle fiber,	ICT Enabled (ppt, animations, images & video clippings)		
31	Mechanism of muscle contraction	ICT Enabled (ppt, animations, images & video clippings)		
32	Threshold and spike potential, Fatigue, O ₂ debt, Rigor mortis.	ICT Enabled (ppt, images)		
33	CIA 2	2 Hrs		
	Module 7 Endocrinology			
34	Endocrine glands and their hormones, mode of action (in brief) ,	ICT Enabled (ppt, animations, images & video clippings)		
35	Hypothalamus, Pituitary, Thyroid, Parathyroid, Thymus,	ICT Enabled (ppt, animations, images & video clippings)		
36	Islets of Langerhans, Adrenal, Testis and ovary,	ICT Enabled (ppt, animations, images & video clippings)		
37	Hormonal disorders.	ICT Enabled (ppt, & images)		
	Module 8			
38	Introduction to immunology	ICT Enabled (ppt, images)		
39	Types of immunity, innate immunity, acquired, passive , active	ICT Enabled (ppt, animations, images & video clippings)		
40	Mechanism of innate immunity (eg. Barriers, phagocytosis , inflammation)	ICT Enabled (ppt, animations, images &		

		video clippings)		
41	Complement System, biological effects of complements.	ICT Enabled (ppt, animations, images & video clippings)		
	Module 9 Antigens and antibodies			
42	Types of antigens, haptens, antigenic determinants.	ICT Enabled (ppt, animations, images & video clippings)		
43	Basic structure of immunoglobulins, Different classes of immunoglobulins and functions.	ICT Enabled (ppt, animations, images & video clippings)		
	Module 10 Antigen antibody reactions			
44	Antigen antibody reactions Precipitation test, agglutination test	ICT Enabled (ppt, animations, images & video clippings)		
45	Clinical applications of antigen antibody reaction, Widal, VDRL, HIV test (ELISA),	ICT Enabled (ppt, animations, images & video clippings)		
46	Complement Fixation Test, and Coombs test.	ICT Enabled (ppt, animations, images & video clippings)	Video	
47	CIA 2	2 Hrs		
	Module 11 (Brief accounts of the followings)			
48	Immune response system Primary and secondary lymphoid organs,	ICT Enabled (ppt, animations, images & video clippings)		
49	Cells of Immune system – Leucocytes, lymphocytes, T&B cells, Macrophages,	ICT Enabled (ppt, animations,		

	Plasma cells , Memory cells, MHC	images & video clippings)		
50	Antibody synthesis, Monoclonal antibodies, Hybridoma technology	ICT Enabled (ppt, animations, images & video clippings)		
51	Immune disorders – hypersensitivity, Auto immunity & Immunodeficiency, AIDS,	ICT Enabled (ppt, animations, images & video clippings)		
52	Vaccines - Major types of vaccines (BCG, DPT, Polio vaccine and TAB vaccines).	ICT Enabled (ppt, animations, images & video clippings)		
53	Recent trends in vaccine preparation.	ICT Enabled (ppt, animations, images & video clippings)		
54	Recent trends in vaccine preparation.	ICT Enabled (ppt, animations, images & video clippings)		

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual – Written/Presentation – Graded or Non-graded etc)
1	20/8/2018	Nutritional chart
2	23/9/2018	hormones

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	15/8/2018	Individual assignments

References

- Coleman: Fundamentals of Immunology
- Ivan Roitt: Essentials of Immunology ELBS.

- Madhavankutty, Medical Physiology
- Mahupathra, Human Physiology, Current Books
- Michael J. Pelczar ECS, Chan & Noel. R. Kreig, Microbiology, Tata McGraw Hill 5th ed. 1996.
- Michael J. Gibuay, Ian A. Macdonald and Helen M. Roche, Nutrition and Metabolism.
- Monica Cheesbrough: Laboratory Manual for Tropical Countries. Vol.II Microbiology, ELBS – Cambridge Ed. 1986.
- Paniker S., Francis G. and Abraham G.K 2008, Microbiology and Immunology, Study Material Series published by Zoological Society of Kerala.

Chemistry COURSE PLAN

PROGRAMME	B. Sc. BOTANY	SEMESTER	3
COURSE CODE AND TITLE	15U3CPCHE3.2: INORGANIC AND BIO-INORGANIC CHEMISTRY	CREDIT	3
HOURS/WEEK	3	HOURS/SEM	54
FACULTY NAME	Dr. Midhun Dominic C.D., Dr. Ramakrishnan S and Dr.Abi T G		

COURSE OBJECTIVES

- To analyse the basic chemistry involved in biological processes
- To demonstrate the role of chemistry in enzymes and nucleic acids
- To illustrate the role of chemistry in agriculture

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I: Chemistry and Agriculture				
1	Mineral nutrients-Macro nutrients- Primary and Secondary macro nutrients.	PPT/Lecture		
2	Micronutrients, their role in plant growth.	PPT/Lecture		
3	Pesticides-classifications, simple examples	PPT/Lecture		
4	NPK value superphosphates, triple super phosphate	PPT/Lecture		
5	Uses of mixed fertilizers and Bio-fertilizers	PPT/Lecture		
6	Plant growth hormones and Bio pesticides	PPT/Lecture		
7	Insecticides – stomach poisons, Contact insecticides, examples	PPT/Lecture		
8	Fumigants, examples, Method of preparation of	PPT/Lecture		

	DDT, BHC, pyrethrin			
9	Herbicides- structure and function of 2,4-D and 2,4,5 -T	PPT/Lecture		
10	Fungicides- inorganic and organic- Bordeaux mixture, dithiocarbamates,	PPT/Lecture		
11	Excessive use of pesticides – environmental hazards.	PPT/Lecture		
12	Revision	PPT/Lecture		
MODULE II: Oxygen carriers in biological system				
13	Structure and functions of hemoglobin			
14	Structure and functions of myoglobin	PPT/Lecture		
15	Oxygen transport mechanism and cooperativity of hemoglobin	PPT/Lecture		
16	Perutz mechanism	PPT/Lecture		
17	Bohr effect	PPT/Lecture		
18	Hemocyanin	PPT/Lecture		
19	Hemerythrin	PPT/Lecture		
CIA-I				
20	Structure and different types of chlorophyll	PPT/Lecture		
21	Photosystem-I	PPT/Lecture		
22	Photosystem-II	PPT/Lecture		
23	Z-scheme and Photophosphorylation	PPT/Lecture	Video	
24	Revision	PPT/Lecture	Video	
MODULE III: Enzymes & Nucleic Acids				
25	Exergonic and endergonic reactions, coupled reactions, biological oxidation reactions	PPT/Lecture		
26	Nomenclature and classification of enzymes	PPT/Lecture		
27	Metalloenzymes. Prosthetic group, coenzyme & cofactor	PPT/Lecture		
28	Characteristics and Mechanism of enzymes action	PPT/Lecture		
29	Lock and key model, induced fit model	PPT/Lecture		
30	Factors affecting enzyme action, enzyme inhibition	PPT/Lecture		
31	Structure and functions of peroxidase, catalase, cytochrome P-450, carbonic anhydrase	PPT/Lecture		
32	Structure and functions of carboxy peptidase, cytochrome oxidase. Vitamin B ₁₂ .	PPT/Lecture		
33	Na ⁺ /K ⁺ ATPase, sodium potassium pump	PPT/Lecture		
34	Elementary structure of ATP and ADP	PPT/Lecture		
35	Chemical composition of nucleic acid	PPT/Lecture		
36	Structure of nucleosides and nucleotides	PPT/Lecture		
37	Structure of DNA	PPT/Lecture		
38	Structure of RNA	PPT/Lecture		
39	Biological functions of DNA and RNA	PPT/Lecture		
CIA – I				
MODULE IV: Chemistry in Medicine				
40	Essential and trace elements in biological	PPT/Lecture		

	system.			
41	Metal deficiency and disease- Iron, Zinc Copper.	PPT/Lecture		
42	Metal toxicity- Toxicity due to Copper overload, Iron, Plutonium and mercury	PPT/Lecture		
43	Chelation therapy-Treatment for excess iron, copper	PPT/Lecture		
44	Chelation therapy-Treatment for excess mercury and plutonium.	PPT/Lecture		
45	Anti-cancer drugsCisplatin.	PPT/Lecture		
46	Anti-Arthritis drugs- Gold compounds,	PPT/Lecture		
47	Outline study and applications of antibiotics	PPT/Lecture		
48	Outline study and applications of sulpha drugs	PPT/Lecture		
49	Outline study and applications of antipyretics	PPT/Lecture		
50	Outline study and applications of analgesics	PPT/Lecture		
51	Outline study and applications of tranquilizers,	PPT/Lecture		
52	Outline study and applications of antidepressants	PPT/Lecture		
53	Drug addiction abuse and prevention.	PPT/Lecture		
54	Revision	PPT/Lecture		

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	18/08/2018	Catalytic sites present in enzymes
2	21/09/2018	Pesticides used in agriculture

References

- R. Puri, L. R. Sharma, K. C. Kalia, Principles of Inorganic Chemistry, 31st Milestone Publishers, New Delhi, 2010.
- L. Finar, Organic Chemistry, Vol. 1 & 2, 6th Edition, Pearson.
- G. T. Austin, Shreve's Chemical process Industries, 5th edition, McGraw Hill, 1984.
- Rastogi, Biochemistry, Tata McGraw. Hill Publication, 1996.
- K. S. Tewari, N. K. Vishnoi, A Text Book of Organic Chemistry, 3rd edition, Vikas publishing House Pvt. Ltd, 2006.
- J. D. Lee, Concise Inorganic Chemistry 5th edn., Wiley India Pvt. Ltd.2008.
- R. Puri, L. R. Sharma, K. C. Kalia, Principles of Inorganic Chemistry, 31st Milestone Publishers, New Delhi, 2010.
- G.L. Meissler, D.A Tarr, Inorganic Chemistry, 3rd Edn. Pearson Education, 2004.
- J. E. Huheey, E. A. Keiter, R. L. Keiter, O. K. Medhi, Inorganic Chemistry, Pearson 2006
- Rastogi, Biochemistry, Tata McGraw. Hill Publication, 1996.
- A.C. Deb, Fundamentals of Biochemistry, 9th Edn. New Central Book Agency, 2001.

Web resource references:

- http://en.wikipedia.org/wiki/Plant_nutrition