

SACRED HEART COLLEGE (AUTONOMOUS)

DEPARTMENT OF ZOOLOGY

BACHELOR OF SCIENCE IN ZOOLOGY

Course plan

Academic Year 2016 - 17

Semester 2

COURSE STRUCTURE

Course Code	Title Of The Course	No. Hrs./ Week	Credits	Total Hrs./Sem
15U2CCENG3	CRITICAL THINKING, ACADEMIC WRITING AND PRESENTATION	5	4	90
15U2CCENG4	MUSINGS ON VITAL ISSUES	4	3	72
15U2CCHIN2A	TRANSLATION, COMMUNUCATION SKILLS AND APPLIED GRAMMAR	4	4	72
15U2CCFRN2A	FRENCH LANGUAGE AND COMMUNICATION SKILLS II	4	4	72
15U2CCSAN2A	COMMUNICATION SKILLS IN SANSKRIT LANGUAGE	4	4	72
15U2CCMAL2A	KAVITHA	4	4	72
115U2CRZOO02	ANIMAL DIVERSITY - NON CHORDATA-II	2	2	36
15U2CPBOT2	PLANT PHYSIOLOGY	2	2	36
15U2CPCHE2	BASIC ORGANIC CHEMISTRY	2	2	36

COURSE PLAN

PROGRAMME	B.Sc. Zoology	SEMESTER	2
COURSE CODE & TITLE	15U2CCENG3: CRITICAL THINKING, ACADEMIC WRITING AND PRESENTATION	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	72
FACULTY NAME	TOM C. THOMAS		

COURSE OBJECTIVES
Comprehends fundamental concepts of critical reasoning and develops the capacity to read and respond critically, drawing conclusions, generalizing, differentiating fact from opinion and creating their own arguments.
Develops appropriate and impressive writing styles for various contexts
Write and correct structural imperfections and edit what they have written.
Develops capacity for making academic presentations effectively and impressively
Synthesize information from various written sources and present them in the form of summaries.
Write original literary creations in different genres as directed, with/without using prompts.

SESSION	TOPIC	LEARNING RESOURCES	REMARKS
	MODULE I		
1	Introduction to Critical Thinking	Lecture/PPT	
2	Introduction to Critical Thinking	Lecture/PPT	
3	Introduction to Critical Thinking	Lecture/PPT	
4	Introduction to Critical Thinking	Lecture/PPT	
5	Reasoning and Arguments	Activities/ Discussion	
6	Reasoning and Arguments	Activities/ Discussion	
7	Reasoning and Arguments	Activities/ Discussion	
8	Reasoning and Arguments	Activities/ Discussion	
9	Reasoning and Arguments	Activities/ Discussion	

10	Reasoning and Arguments	Activities/ Discussion	
11	Deductive and Inductive Arguments	Course book	
12	Deductive and Inductive Arguments	Course book	
13	Deductive and Inductive Arguments	Course book	
14	Deductive and Inductive Arguments	Course book	
15	Deductive and Inductive Arguments	Course book	
16	Fallacies		
17	Fallacies	Course book	
18	Inferential Comprehension	Group Activities	
19	Inferential Comprehension	Group Activities	
20	Inferential Comprehension	Group Activities	
21	Inferential Comprehension	Course book	
22	Inferential Comprehension	Group Activities	
23	Inferential Comprehension	Group Activities	
24	Critical Thinking and Academic Writing	Group Activities	
25	Critical Thinking and Academic Writing	Group Activities	
26	Critical Thinking and Academic Writing	Group Activities	
	INTERNAL ASSESSMENT TEST 1		
27	Writing Models	Presentation	
28	Writing Models	Course book	
29	Writing Models		
30	Writing Models	Course book	
31	Writing Models	Course book	
32	Writing Letters		
33	Writing Letters	Course book	
34	Writing Letters	Course book	
35	Writing Letters		
36	Writing a Letter to the Editor	Course book	
37	Writing a Letter to the Editor	Course book	
38	Writing a Letter to the Editor		
39	Writing a Letter to the Editor	Course book	
40	Letter to the Editor	Course book	
41	Letter to the Editor	Course book	
42	Resume Writing		
	MODULE III		
43	Covering Letter	Lecture	
44	Covering Letter	Lecture	
45	Emails	Course book	

46	Emails	Course book	
47	Interview Skills		
48	Interview Skills	Course book	
49	Interview Skills	Course book	
50	Group Discussion		
52	Group Discussion	Course book	
53	Accuracy in Academic writing	Course book	
54	Accuracy in Academic writing	Course book	
55	Accuracy in Academic writing		
56	Articles and Determiners	Course book	
57	Articles and Determiners	Course book	
58	Nouns and Pronouns		
59	Subject-verb agreement	Lecture	
60	Phrasal verbs	Lecture	
61	Modals		
62	Tenses	Course book	
63	Tenses	Course book	
64	Tenses		
65	Conditional clauses	Course book	
66	Relative Pronouns	Course book	
67	Passive Voices		
	INTERNAL ASSESSMENT TEST 2		
68	Conjunctions	Lecture	
69	Embedded questions	Course book	
70	Embedded questions	Course book	
71	Punctuations and Abbreviations		
72	Soft skills for academic presentations	Course book	
73	Effective communication skills	Course book	
74	Flip Charts, OHP, Power point presentation	Group Presentations	
75	Clarity and brevity in presentation	Group Presentations	
76	Interaction and persuasion	Group Presentations	
77	Interview skills	Group Presentations	
78	Interview skills	Group Presentations	
79	Interview skills	Group Presentations	
80	Group Discussion	Group Presentations	
81	Group Discussion	Group Presentations	
82	Group Discussion	Group Presentations	

83	Group Discussion	Group Presentations	
84	Group Discussion	Group Presentations	
85	Group Discussion	Group Presentations	
86	Review Session 1		
87	Review Session 1		
88	Review Session 2		
89	Review Session 3		
90	Review Session 4		

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	4/1/2017	Writing Tasks- Different Types of Letters
2	28/02/2017	

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	2/02/2017	Brochure design
2	15/1/17	Model Slide Presentation

COURSE PLAN

PROGRAMME	UG COMMON COURSE	SEMESTER	2
COURSE CODE AND TITLE	15U2CCENG4: MUSINGS ON VITAL ISSUES	CREDIT	2
HOURS/WEEK	4	HOURS/SEM	72
FACULTY NAME	Sunil KV, Sabu Thomas		

COURSE OBJECTIVES
Appreciate inspirational literatures of various literary genres across cultures
Critically engage with literary texts written in different languages and later translated into English
Critically engage with biographical sketch of the authors and familiarize their personality, oeuvre and style.
Develop a creative and insightful perspective towards life
Apply the unfathomable power of literatures in their writings and creative endeavors.

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I –GLOBALIZATION AND ITS CONSEQUENCES				
1	Fritjof Capra : “The Dark Side of Growth”	PPT/Lecture	video	
2	Fritjof Capra : “The Dark Side of Growth”	PPT/Lecture	video	
3	Fritjof Capra : “The Dark Side of Growth”	Lecture		
4	Joseph Stiglitz : “Globalization”	lecture		
5	Joseph Stiglitz : “Globalization”	PPT/Lecture	video	
6	Joseph Stiglitz : “Globalization”	PPT/Lecture		
7	D H Lawrence : “Money Madness”	Lecture		
8	S Joseph : “For the Dispossessed”	Lecture		
9	S Joseph : “For the Dispossessed”	PPT/Lecture	video	
10	S Joseph : “For the Dispossessed”	PPT/Lecture		
11	Vandana Shiva : “The Social Costs of Economic Globalization”	Lecture		
12	Vandana Shiva : “The Social Costs of Economic Globalization”	Lecture		
13	Vandana Shiva : “The Social Costs of Economic Globalization”	PPT/Lecture	video	

14	Jagannath Prasad Das : "Kalahandi"	PPT/Lecture		
15	Jagannath Prasad Das : "Kalahandi"	Lecture		
16	Jagannath Prasad Das : "Kalahandi"	Lecture		
17	Leah Levin : "Universal Declaration of Human Rights"	PPT/Lecture	video	
18	Leah Levin : "Universal Declaration of Human Rights"	PPT/Lecture		
19	Leah Levin : "Universal Declaration of Human Rights"	Lecture		
20	Nani A Palkivala : "Human Rights and Legal Responsibilities"	PPT/Lecture	video	
21	Nani A Palkivala : "Human Rights and Legal Responsibilities"	Lecture		
22	Nani A Palkivala : "Human Rights and Legal Responsibilities"	Lecture		
23	Martin Luther King : "I Have a Dream"	Lecture		
24	Martin Luther King : "I Have a Dream"	Discussion		
25	Martin Luther King : "I Have a Dream" CIA – I			
MODULE II- HUMAN RIGHTS				
26	Kalpana Jain : "Stigma, Shame and Silence"	PPT/Lecture		
27	Kalpana Jain : "Stigma, Shame and Silence"	Lecture	video	
28	Kalpana Jain : "Stigma, Shame and Silence"	Lecture		
29	Wole Soyinka : "Telephone Conversation"	Lecture		
30	Wole Soyinka : "Telephone Conversation"	PPT/Lecture		
31	Richard Wright : "Twelve Million Black Voices"	Lecture	video	
32	Richard Wright : "Twelve Million Black Voices"	Lecture		
33	Richard Wright : "Twelve Million Black Voices"	Lecture		
34	Aruna Roy : "Tune in to the Voice of the Deprived"	PPT/Lecture		
35	Aruna Roy : "Tune in to the Voice of the Deprived"	Lecture	video	
36	Aruna Roy : "Tune in to the Voice of the Deprived"	Lecture		
37	Johannes V. Jensen : "Lost Forests"	Lecture		
38	Johannes V. Jensen : "Lost Forests"	PPT/Lecture		
39	Johannes V. Jensen : "Lost Forests"	Lecture	video	
40	Omprakash Valmiki : "Joothan"	Lecture		
41	Omprakash Valmiki : "Joothan"	Discussion		
42	Omprakash Valmiki : "Joothan"	Presentation		
	MODULE –III Gender Question			
43	Jamaica Kincaid : "Girl"	Presentation		
44	Jamaica Kincaid : "Girl"	Presentation		
MODULE III- GENDER QUESTION				
45	Jamaica Kincaid : "Girl"	Lecture	Video	
46	Taslima Nasrin : "At the Back of Progress"	Discussion		
47	Taslima Nasrin : "At the Back of Progress"			
48	Taslima Nasrin : "At the Back of Progress"			

49	Judy Brady : “Why I Want a Wife”	Lecture	Video	
50	Judy Brady : “Why I Want a Wife”	Lecture, discussion		
51	Judy Brady : “Why I Want a Wife”	Lecture, discussion		
52	J B Priestley : “Mother’s Day”	Lecture, discussion		
53	J B Priestley : “Mother’s Day”	Lecture		
54	J B Priestley : “Mother’s Day”	Discussion	Video	
55	J B Priestley : “Mother’s Day”	Lecture		
56	Amartya Sen : “More Than 100 Million Women are Missing	Lecture		
57	Amartya Sen : “More Than 100 Million Women are Missing	Presentation		
58	Amartya Sen : “More Than 100 Million Women are Missing	Presentation		
59	Amartya Sen : “More Than 100 Million Women are Missing	Presentation		
60	Revision			
61	Revision			
62	Revision			
63	Revision			
64	Revision			
65	Revision			
66	Revision			
67	Revision			
68	Revision			
69	Revision			
70	Revision			
	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	2/1/2017	Presentations
2	28/1/2017	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	12/1/2017	Group Discussions
2	20/1/2017	Performances

References

Dr P J George Ed. Musings on Vital Issues. Orient Blackswan and Mahatma Gandhi University.

COURSE PLAN

PROGRAMME	BACHELOR OF SCIENCE – ZOOLOGY	SEMESTER	2
COURSE CODE AND TITLE	15U2CCHIN2A - TRANSLATION, CORRESPONDENCE, ESSAYS AND APPLIED GRAMMAR (SEM II)	CREDIT	4
HOURS/WEEK	4	HOURS/SEM	72
FACULTY NAME	Dr. MINIPRIYA R, SYAMLAL M. S		

COURSE OBJECTIVES

Recognize and get introduced to the minor genres such as essay to develop their social and moral sense in life.
Define grammatical structure of Hindi language and analyse the problems, challenges of communication in Hindi.
Use Hindi language for effective communication in different fields like administration, office proceedings, insurance etc.
Understand translation as a linguistic, communicative and cultural activity.
Acquire skills of correspondence, drafting official and scientific documents in the fields of administration, media and business.

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	Importance of Grammar in Language learning.	Lecture/Discussion		
2	Part I Vyakaran	Lecture/Discussion		
3	Part I Vyakaran	Lecture/PPT		
4	Part I Vyakaran	Lecture	Exercise	
5	Importance of Translation	Lecture/PPT		
6	Translation	Lecture/PPT		
7	Translation	Lecture	Exercise	
8	Exercise -Translation	Interaction	Exercise	
9	Importance of Letter writing	Lecture/PPT		
10	Part II Patra Lekhan	Lecture/Discussion		
11	Ache Patra Ki Visheshtayen	Lecture/PPT		
12	Importance of Hindi Essays	Interaction	Discussion	
13	Patron Ke Prakar	Lecture		
14	Nibandh Ke Prakar	Lecture		
15	Nibandh Ke Prakar	Lecture/PPT	Exercise	
16	Part I Vyakaran	Lecture		
17	Part I Vyakaran	Interaction	Exercise	
18	Exercise -Translation	Lecture		
19	Revision	Discussion		
20	Patron Ke Prakar	Lecture		
21	Nibandh Ke Ang	Lecture		
22	Nibandh Lekhan Sambandhi Avashyak Batein	Lecture/Discussion		
23	Nibandh1,2	Lecture/PPT		
24	CIA – I (1Hour Exam)			
MODULE II				
25	Exercise Oriented Grammar	Lecture		
26	Exercise Oriented Grammar	Lecture/Discussion	Exercise	
27	Exercise Oriented Grammar	Lecture/ Discussion	Exercise	
28	Part II Patra Lekhan, Parivarik Patra	Lecture/PPT		
29	Part II Patra Lekhan, Parivarik Patra	Interaction		
30	Exercise –Translation	Lecture		
31	Exercise –Translation	Lecture/Discussion		
32	Revision	Interaction		
33	Exercise Oriented Grammar	Lecture		
34	Exercise Oriented Grammar	Lecture/ Discussion	Exercise	
35	Part II Patra Lekhan , Nimantran Patra	Lecture/PPT		
36	Nibandh 3	Lecture		
37	Nibandh 3,Exercise	Lecture/ Discussion		
38	Exercise –Translation	Lecture		
39	Exercise –Translation	Lecture/ Discussion		

40	Part II Patra Lekhan, Vyavasayik Patra	Lecture/PPT		
41	Nibandh 4	Lecture		
42	Nibandh 4, Exercise	Lecture/Discussion	Exercise	
43	Nibandh 5	Lecture/Discussion		
44	Nibandh 6	Lecture		
45	Nibandh 6, Exercise	Lecture/ Discussion	Exercise	
46	Revision	Interaction		
47	CIA – II (2 Hours Exam)			
MODULE III				
48	Exercise Oriented Grammar	Lecture/PPT		
49	Exercise Oriented Grammar	Lecture	Exercise	
50	Nibandh 7	Lecture		
51	Nibandh 7, Exercise	Lecture/Discussion	Exercise	
52	Part II Patra Lekhan, Adhikarik Patra	Lecture/PPT		
53	Part II Patra Lekhan, Adhikarik Patra	Lecture/ Discussion		
54	Exercise – Translation	Lecture		
55	Exercise – Translation	Lecture/Discussion		
56	Nibandh 8	Lecture		
57	Nibandh 8, Exercise	Lecture/ Discussion		
58	Exercise – Translation	Lecture		
59	Exercise Oriented Grammar	Lecture/PPT		
60	Exercise Oriented Grammar	Lecture	Exercise	
61	Part II Patra Lekhan, Shikayati Patra	Lecture/Discussion		
62	Nibandh 9	Lecture		
63	Nibandh 9, Exercise	Lecture/ Discussion		
64	Exercise – Translation	Lecture		
65	Part II Patra Lekhan , Karyalayi Patra	Lecture/PPT		
66	Nibandh 10	Lecture		
67	Nibandh 10, Exercise	Lecture/Discussion		
68	Seminar	Presentation by students		
69	Seminar	Presentation by students		
70	Revision	Interaction		
71	Revision	Interaction		
72	Evaluation of the course			

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

SL NO	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	January	Exercise activity based on Patra lekhan (Group Discussion)
2	January	Translation of a passage from English to Hindi.(Group Activity)

References

- Hindi vyakaran by Kamta Prasad Guru , Prabhat Prakashan

Web resource references:

- epustakalay.com
- www.hindikunj.com

COURSE PLAN

PROGRAMME	BSC ZOOLOGY	SEMESTER	2
COURSE CODE AND TITLE	15U2CCFRN1A - FRENCH LANGUAGE AND COMMUNICATION SKILLS II	CREDIT	4
HOURS/WEEK	4	HOURS/SEM	72

COURSE OBJECTIVES

Understand the basic concepts of French language including grammar, vocabulary and sentence structure

Understand the basic communication skills necessary for living in France and French speaking countries.

Describe oneself and ones surroundings using a repertory of words and expressions in a simple and structured grammatical manner.

Develop business communication skills

Express an issue of concern including topics like environmental, social or health issues, enumerate its causes and consequences and suggest solutions

Understand the mannerisms, culture and tradition of France and Francophone countries and compare it to one's own country and develop co-cultural feeling

Understand and appreciate the history of France and Francophone countries and compare it to one's own country

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	Introducing French Basics	Role play, games		
2	French Basics	Lecture		
3	Pronominal verbs	Games, music		
4	Pronominal verbs practice	Games		
5	Sentence contruction using pronominal verbs	Games		
6	Sentence construction	Games		
7	Sentence construction	Games		
8	Grammar- present tense	Role play		
9	Communicative skills	Lecture		
10	Communicative skills	Role Play		
11	Communicative skills	Role Play		
12	Narrate a day	Discussions ICT		
13	Narrate a day	Discussions		
MODULE II				
14	Interrogative adjectifs	Game		
15	Interrogative adjectifs	Lecture		

16	Demonstrative adjectives	Game		
17.	Demonstrative Adjectives	Lecture		
18.	Sentence construction	Games		
19	Sentence construction	Games		
20	civilisation	discussion		
21	Vocabulary building	games		
22	Vocabulary Building	Games		
23	Buying a product, French products	Lecture/Discussion		
24	Buying a product	Role play		
25	Buying a product	Role play		
26	Revision			
27	Revision			
28	revision			
29	CIA I			
MODULE III				
30	Food vocabulary	PPT/Lecture		
31	Food vocabulary	Games		
32	Intercultural studies	Discussions		
33	Sentence construction	Role play		
34	Sentence Construction	Games		
35	Articles partitifs	music		
36	Sentence construction(negative form)	games		
37	Future proche	Lecture		
38	Future proche	Lecture		
39	Giving and taking order	Role play		
40	Ordering at a restaurant	Role play		
41	Vocabulary building	Games, music		
42	Vocabulary building	Games, Music		
43	civilisation	PPT/Discussion		
44	Civilisation	Discussion		
CIA II				
MODULE IV				
45	Past tense (avoir)	Lecture		
46	Past tense(etre)	Lecture		
47	Past tense (pronominal)	Lecture		
48	Sentence formation	Games		
49	Sentence formation	Games		
50	Describe a past event	Lecture		
51	Narrate your day in the past	communication		
52	Diary writing	assignment		
53	Vocabulary building	games		
54	Part time jobs, vocabulary	Lecture		
55	Part time jobs-ads	Role plays		
56	Exploring part time jobs	Role play		
57	Putting up an ad and responding to an	Lecture/Seminar/Discussion		

	ad on part-time job			
58	Putting up an ad and responding to an ad on part-time job	Role play		
59	French culture	Discussion		
60	French Culture	Discussion		
61	French culture	Discussion		
62	French culture	Discussion		
63	DELFPREPARATION			
64	DELFPREPARATION			
65	DELFPREPARATION			
66	DELFPREPARATION			
67	DELFPREPARATION			
68	DELFPREPARATION			
69	DELFPREPARATION			
70	DELFPREPARATION			
71	DELFPREPARATION			
72	DELFPREPARATION			

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	By February	Presentation on gastronomy of each region
2		roleplays

References

Version Originale, site web

COURSE PLAN

PROGRAMME	BACHELOR OF SCIENCE,ZOOLOGY	SEMESTER	2
COURSE CODE AND TITLE	15U2CCSAN2A: COMMUNICATION SKILLS IN SANSKRIT	CREDIT	4
HOURS/WEEK	4	HOURS/SEM	72
FACULTY NAME	Mr.Mathew Jose		

COURSE OBJECTIVES
Developing the basic knowledge in Sanskrit
Students develop the communication skills in sanskrit
Students familiarize the figures of speech and their usage
Students get an awareness about aesthetic values
Students get an awareness about Indian classical poetic tradition
Understand moral values through Drama
Students develop writing skills in Sanskrit
Students get awareness about Verbal forms

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	Introducing Vibhakthi	Lecture		
2	Prathama vibhakthi	Discussion		
3	Dvitheeya vibhakthi	Lecture		
4	Thritheeya vibhakthi	Lecture	e-resource	
5	Chathurthi vibhakthi	Lecture		
6	Panchami vibhakthi	Chalk n talk		
7	Shashti vibhakthi	Lecture		
8	Sapthami vibhakthi	Chalk n talk		
9	Sambhodhanaprathama	Lecture		
10	Akarantha pulinga bala shabha	Lecture		
11	Aakarantha sthreealinga Latha shabdha	Discussion		
12	Ekarantha pulinga Kavi shabdha	Discussion		
13	Ukarantha pulinga Guru shabdha	PPT/Lecture		
14	Revision			
MODULE II				
15	Structure of sentence- Present tense	PPT/Lecture		

16	Prathama purusha ekavachaam	Chalk n talk		
17	Prathama purusha dvivachaam	Lecture		
18	Prathama purusha bahuvachaam	Lecture		
19	Madhyama purusha ekavachaam	Lecture		
20	Madhyam purusha dvivachaam	Game		
21	Madhyam purusha bahuvachaam	Game		
22	Uthamapurusha ekavachaam	PPT/Lecture		
23	Uthamapurusha dvivachaam	PPT/Lecture		
24	Uthamapurusha bahuvachaam	Lecture		
25	Past tense- Prathamapurusha	Lecture		
26	CIA-1			
27	Past tense -Madhyamapurusha	Lecture		
28	Past tense - Uthamapurusha	Chalk n talk		
29	Future tense - Prathamapurusha	Chalk n talk		
30	Future tense - Madhyamapurusha	Discussion		
31	Future tense - Uthamapurusha	Discussion		
32	Sentence making in Sanskrit-Active voice	Lecture		
33	Sentence making in Sanskrit –Passive voice	Lecture		
34	Revision			
35	Revision			
MODULE III				
36	Introduction Meghadootha	Lecture		
37	Explaining Khandakavyam	Lecture		
38	Yaksha -curse	PPT/Lecture		
39	Yaksha's meeting with cloud	PPT/Lecture		
40	Requesting to cloud	PPT/Lecture		
41	Praising cloud	Lecture		
42	Yaksha directing cloud	Lecture		
43	Meeting with Balaka bird	Chalk n talk		
44	Departure	Discussion		
45	Rajahamsa	Roleplay		
46	Explaining Mountain	Discussion		
47	Directing to Megha	PPT/Lecture		
48	Revision			
49	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	Debate	
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			
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	By February	Kalidasa's Mahakavyas
2		Sanskrit Drama

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	By February	Bhasa's dramas
2		Khandakavyas in Sanskrit

References

- 1.Meghadhoota of Kalidasa (Poorva-Megha; 1-20 Slokas)
- 2.Mrichakatika-kathasamgraha, (Chapters 1, 2&3), by Prof. P.C. Vasudevan Elayat
- 3.Siddharupam, Vidyarambham Press, Alappuzha
- 4.Sabdamanjari, Chowkhamba Sanskrit Series office, Varanasi
- 5.Dhaturupamanjari, Chowkhamba Sanskrit Series office, Varanasi
- 6.Sanskritavyakaranapravesika, Pandit L Anantharama Sastri
- 7.Balabodhini, Rajarshi Sree Rama Varma, Publication Divison, Govt.Sanskrit College, Trippunittura

COURSE PLAN

PROGRAMME	B.Sc ZOOLOGY	SEMESTER	2
COURSE CODE & TITLE	15U2CCMAL2A കവിത	CREDITS	4
HOURS/WEEK	4	HOURS/SEM	72
FACULTY NAME	FR XAVIER C S, VISHNU RAJ P		

COURSE OBJECTIVES
കവിത എന്ന സാഹിത്യരൂപത്തെക്കുറിച്ച് മെച്ചപ്പെട്ട ധാരണ ഉണ്ടാക്കുക
ഭാഷാപഠനം സാഹിത്യാനുഭവത്തിലൂടെ ആവിഷ്കരിക്കുക
വായനാഭിരുചി വർദ്ധിപ്പിക്കുക
സാഹിത്യ പരിചയം ഉണ്ടാക്കുക
വ്യാവഹാരിക തലത്തിൽ മാതൃഭാഷാപ്രയോഗിക്കുവാനുള്ള കഴിവ് നേടുക
ഭാഷാപഠനത്തിലൂടെ ആശയവിനിമയശേഷി വർദ്ധിപ്പിക്കുക

Session	Topic	Learning Resources	Teaching Method	REMARKS
Module I				
1	മലയാളസാഹിത്യം സാമാന്യാവലോകനം	സാഹിത്യചരിത്രങ്ങൾ	Lecturing	
2	മലയാളകവിതയുടെ ചരിത്രം-1	സാഹിത്യചരിത്രങ്ങൾ	Lecturing	
3	മലയാളകവിതയുടെ ചരിത്രം-2	സാഹിത്യചരിത്രങ്ങൾ	Discussion	
4	ചങ്ങമ്പുഴയുടെ രചനാലോകം	കവിതാപഠനങ്ങൾ പഠനങ്ങൾ	Lecturing	
5	മനസ്സിനി	Text	Reading	
6	മനസ്സിനി	Text	Group Discussion	
7	സൂര്യകാന്തി	കവിതാപഠനങ്ങൾ പഠനങ്ങൾ	Lecturing	
8	സൂര്യകാന്തി	Text	Reading	
9	ഗോപികാദണ്ഡകം	Text	Group Discussion	
10	ഗോപികാദണ്ഡകം	കവിതാപഠനങ്ങൾ പഠനങ്ങൾ	Lecturing	
11	ഗോപികാദണ്ഡകം	Text	Reading	
12	വിരാമം	Text	Group Discussion	
13	വിരാമം	കവിതാപഠനങ്ങൾ	Lecturing	
14	വിരാമം	Text	Reading	
15	പുതിയമാഷ്വരാർ	Text	Group Discussion	

16	പുതിയമാഷന്മാർ	Text	Group Discussion	
17	പഠിച്ച കവിതകൾ ഒരു അവലോകനം	Text	Group Discussion	
Module II				
18	ആധുനിക മലയാളകവിതയുടെ സ്വഭാവങ്ങൾ	കവിതാ പഠനങ്ങൾ	Lecturing	
19	യുഗലപ്രസാദൻ	Text	Reading	
20	യുഗലപ്രസാദൻ	Text	Group Discussion	
21	ആത്മഹത്യ ചെയ്ത കർഷകൻ വെള്ളത്തെക്കുറിച്ച് സംസാരിക്കുന്നു	Text	Lecturing	
22	ആത്മഹത്യ ചെയ്ത കർഷകൻ വെള്ളത്തെക്കുറിച്ച് സംസാരിക്കുന്നു	Text	Reading	
23	ആത്മഹത്യ ചെയ്ത കർഷകൻ വെള്ളത്തെക്കുറിച്ച് സംസാരിക്കുന്നു	Text	Group Discussion	
24	കളകൾ	കവിതാ പഠനങ്ങൾ	Lecturing	
25	കളകൾ	Text	Reading	
26	പറക്കം	Text	Group Discussion	
27	പറക്കം	കവിതാ പഠനങ്ങൾ	Lecturing	
28	കീരി	Text	Reading	
29	കീരി	Text	Group Discussion	
30	പഠിച്ച കവിതകൾ ഒരു അവലോകനം	Text	Group Discussion	
31	Internal Assessment 1	Text		
32	Question paper discussion	Text	Group Discussion	
Module III				
33	മലയാള - നൂതന പ്രവണതകൾ	കവിതാ പഠനങ്ങൾ	Lecturing	
34	കാക്ക	Text	Reading	
35	കാക്ക	Text	Group Discussion	
36	മോഹൻദാസും ഗാന്ധിയും നാമുറാം ഗോഡ്സെയും	കവിതാ പഠനങ്ങൾ	Lecturing	
37	മോഹൻദാസും ഗാന്ധിയും നാമുറാം ഗോഡ്സെയും	Text	Reading	
38	നാനാണത്ത് പാറ	Text	Group Discussion	
39	നാനാണത്ത് പാറ	കവിതാ പഠനങ്ങൾ	Lecturing	
40	യശോധാരയെന്നവൾ	Text	Reading	
41	യശോധാരയെന്നവൾ	Text	Group Discussion	
42	മാമ്പഴപ്പാത	കവിതാ പഠനങ്ങൾ	Lecturing	
43	മാമ്പഴപ്പാത	Text	Reading	
44	മാമ്പഴപ്പാത	Text	Group Discussion	

45	പഠിച്ച കവിതകൾ ഒരു അവലോകനം	Text	Group Discussion	
Module- IV				
46	മലയാള - നൂതന പ്രവണതകൾ	കവിതാ പഠനങ്ങൾ	Lecturing	
47	ചിന്താഗ്നി	Text	Group Discussion	
48	ചിന്താഗ്നി	Text	Lecturing	
49	ആ പശുകുട്ടിയുടെ മരണം	Text	Group Discussion	
50	ആ പശുകുട്ടിയുടെ മരണം	കവിതാ പഠനങ്ങൾ	Lecturing	
51	തേൾക്കൂടം	Text	Lecturing	
52	തേൾക്കൂടം	Text	Group Discussion	
53	കൗസല്യ	Text	Group Discussion	
54	കൗസല്യ	Text	Group Discussion	
55	കൗസല്യ	Text	Group Discussion	
56	എന്തു ശുത്തി ഏതു ശുത്തി	Text	Group Discussion	
57	എന്തു ശുത്തി ഏതു ശുത്തി	Text	Group Discussion	
58	സമകാലീക മലയാള കവിത	കവിതാ പഠനങ്ങൾ	Group Discussion	
59	സമകാലീക മലയാള കവിത	Text	Group Discussion	
60	സമകാലീക മലയാള കവിത	Text	Group Discussion	
61	പഠിച്ച കവിതകൾ ഒരു അവലോകനം	കവിതാ പഠനങ്ങൾ	Group Discussion	
62	പഠിച്ച കവിതകൾ ഒരു അവലോകനം	Text	Group Discussion	
	Internal Assessment 2			
63	Question paper discussion	Text	Group Discussion	
64	പഠിച്ച കവിതകൾ ഒരു അവലോകനം	കവിതാ പഠനങ്ങൾ	Group Discussion	
65	പഠിച്ച കവിതകൾ ഒരു അവലോകനം	കവിതാ പഠനങ്ങൾ	Group Discussion	
66	സംവാദം-	Text	Group Discussion	
67	സെമിനാർ	Text	Presentation	
68	സെമിനാർ	Text	Presentation	
69	സെമിനാർ	Text	Presentation	
70	സെമിനാർ	Text	Presentation	
71	സെമിനാർ	Text	Presentation	
72	Evaluation of the course	Text	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 February	മലയാളത്തിലെ തെരഞ്ഞെടുത്ത കവികളുടെ വിവരണങ്ങൾ
2		സിലബസിൽ പഠിക്കാൻ ഇല്ലാത്ത കവിതകളുടെ ആസ്വാദനം

SEMINAR

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

Reference :

1. സമ്പൂർണ്ണ മലയാള സാഹിത്യചരിത്രം - എഡിറ്റർ :പന്മന രാമചന്ദ്രൻ നായർ
2. മലയാള കവിതാസാഹിത്യ ചരിത്രം - ഡോ .എം .ലീലാവതി

COURSE PLAN

PROGRAMME	BACHELOR OF ZOOLOGY	SEMESTER	2
COURSE CODE AND TITLE	15U2CRZOO02 ANIMAL DIVERSITY - NON CHORDATA-II	CREDIT	2
HOURS/WEEK	2	HOURS/SEM	36
FACULTY NAME	RAAGAM P M & DR. PHILIP MATHEW		

COURSE OBJECTIVES
Understand the taxonomic characteristics of non-chordate animals
Understand the diversity of Phylum Platyhelminthes and Aschelminthes
Understand the pathogenicity of worms of the phyla Platyhelminthes and Aschelminthes
Understand the taxonomic characteristics of Phylum Annelida
Understand the diversity of Annelids
Understand the taxonomic characteristics of Phylum Arthropoda, Phylum Mollusca and Phylum Echinodermata
Understand the diversity of Phylum Arthropoda, Phylum Mollusca and Phylum Echinodermata
Understand the evolutionary significance and taxonomic characteristics of Minor Phyla and Phylum Hemichordata

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
Module I- Phylum Platyhelminthes		3 Hr		
1	Introduction to Phylum Platyhelminthes- General Characteristics and taxonomy	PPT/Lecture		
2	Classification upto classes. Class I - Turbellaria. Eg. Planaria. Class II – Trematoda Eg. Fasciola Class III- Cestoda Eg. <i>Taenia saginata</i> .	PPT/Lecture		
3	1. Life history of <i>Fasciola hepatica</i> . 2. Platyhelminth parasites of Man and Dog (<i>Schistosoma</i> , <i>Taenia solium</i> , <i>Echinococcus</i>)	PPT/Lecture		

).			
	Module II. Phylum Aschelminthes. 2hrs			
4	Introduction to Phylum Aschelminthes. Eg. Enterobius.	PPT/Lecture		
5	General Topic- Pathogenic nematodes	PPT/Lecture		
	Module III- Phylum Annelida	7 hrs		
6	Introduction to Phylum Phylum Annelida	PPT/Lecture		
7	Classification upto classes. Class I- Archiannelida Eg. Polygordius Class II – Polychaeta Eg. Chaetopterus	PPT/Lecture		
8	ClassIII- Oligochaeta Eg. Megascolex. Class IV - Hirudinea Eg. Ozobanchus	PPT/Lecture		
9	Study of Type - Earthworm Habit habitat, Ecological significance	PPT/Lecture		
10	Earthworm: Nutrition and Digestion	PPT/Lecture		
11	Earthworm: Respiration, Excretion	PPT/Lecture		
12	Earthworm: Reproduction	PPT/Lecture		
	MODULE IV Phylum Arthropoda	12 hrs		
13	Salient features and classification scheme of Phylum Arthropoda	PPT/Lecture	Video	
14	Classification up to classes. Introduction to 4 subphyla. 1. Sub Phylum - Trilobitomorpha Class - Trilobita	PPT/Lecture		
15	2. Sub Phylum- Onychophora Class – Onychophora, <i>Eg. Peripatus</i> (Mention its affinities). 3. Sub Phylum- Mandibulata Class I – Crustacea, <i>Eg. Sacculina</i>	PPT/Lecture		
16	Class II- Chilopoda, <i>Eg. Centipede</i> Class III – Diplopoda, <i>Eg. Millipede</i> Class IV – Insecta, <i>Eg. Dragon fly</i>	PPT/Lecture		
17	4. Sub Phylum - Chelicerata Class - Merostomata Eg. <i>Limulus</i> Class II – Arachnida Eg. <i>Scorpion</i>	PPT/Lecture		
18	Type: <i>Panaeus</i> Habit and Habitat, Body Structure and Appendages	PPT/Lecture		

19	Penaeus: Digestive System	PPT/Lecture		
20	Penaeus: Respiratory system and Excretory system	PPT/Lecture		
21	Penaeus: Circulatory system	PPT/Lecture		
22	Penaeus: Reproduction	PPT/Lecture		
23	Larval forms of Penaeus	PPT/Lecture		
24	General Topic Vectorial Arthropods	PPT/Lecture		
Module V- Phylum Mollusca		5hrs		
25	Introduction to Phylum Mollusca General features Classification up to classes Class I- Monoplacophora, Eg. Neopilina Class II- Amphineura, Eg. Chiton	PPT/Lecture		
26	Class III- Gastropoda, Eg. Aplysia Class IV- Scaphopoda, Eg. Dentalium	PPT/Lecture		
27	Class V-Pelecypoda, Eg. Pinctada Class VI- Cephalopoda, Eg. Sepia	PPT/Lecture	Video	
28	Pearl formation	PPT/Lecture		
29	Pearl culture	PPT/Lecture		
Module VI Phylum Echinodermata		4 hrs		
30	Classification upto classes Class I- Asteroidea, Eg. Astropecten Class II- Ophiuroidea, Eg. Ophiothrix	PPT/Lecture		
31	Class III- Echinoidea, Eg. Echinus Class IV- Holothuroidea, Eg. Holothuria	PPT/Lecture		
32	Class V – Crinoidea, Eg. Antedon Brief account on larval forms.	PPT/Lecture	Video	
33	Water vascular system in Echinodermites	PPT/Lecture	Video	
Module VII Minor Phyla		2 hrs		
34	General account and examples	PPT/Lecture		
35	General account and examples	PPT/Lecture		
Module VIII- Phylum Hemichordata		1 hr		
36	Phylum Hemichordata Eg. Balanoglossus (Affinities)	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	15/12/2016	Vector Arthropods
2	28/01/2017	Pearl Culture

GROUP ASSIGNMENTS/ACTIVITIES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	02/02/2017	Parasitic Nematodes

REFERENCES

TEXTBOOKS AND REFERENCES	
1	Zoological Society of Kerala Study material. <i>Animal Diversity</i> 2002.
2	Dhami. P.S. and Dhami J.K. 1979 Invertebrate Zoology. R. Chand and Co. Delhi.
3	Ekambaranatha Ayyar M. 1990. A Manual of Zoology. Volume I. Invertebrate part-I and part-II. S. Viswanathan Printers & Publishers. Pvt.Ltd.
4	Bowler Peter J. and Iwan Rhys Morus. 2005 <i>Making Modern Science: A Historical Survey</i> . College of Chicago Press, Chicago, IL:
5	Ernst Mayr 1982. <i>The Growth of Biological Thought: Diversity, Evolution and Inheritance</i> . Published by Harvard College Press.
6	Ervin Schrodinger 1944. What is life? Mind and Matter. Cambridge College Press.
7	Jacques Monod 1971. <i>Chance and Necessity: An Essay on the Natural Philosophy of Modern Biology</i> . Vintage Pub. NY
8	Kuhn, Thomas. 1996 <i>The Structure of Scientific Revolutions</i> 3rd ed.: College of Chicago Press, Chicago, IL
9	Taylor, Green, Stout (2008) Biological Science, Cambridge College, Press, p 951.
1	Thomas, A.P. (Editor) 2009. Biology – Perspectives and Methods. Green Leaf Publishers, Kottayam.
0	

COURSE PLAN

PROGRAMME	BACHELOR OF ZOOLOGY	SEMESTER	2
COURSE CODE AND TITLE	15U2PRZOO01 PRACTICAL 1 ANIMAL DIVERSITY – NON CHORDATA I	CREDIT	2
HOURS/WEEK	2	HOURS/SEM	36
FACULTY NAME	RAAGAM PM		

COURSE OBJECTIVES

Understand the principles of biological laboratory instruments

Develop skill in using simple as well as compound light microscopes

Apply the skill of drawing using a camera lucida to trace the outline of a microscopic organism

Identify, at least ten specimens, up to its genus by examining its morphology

Understand the approaches and systems of classification as well as modern trends in animal taxonomy

Understand the characteristics and classification of the Kingdom Protista

Understand the Classification of Kingdom Animalia and the characteristics of Mesozoa, Parazoa and Metazoa

Understand the characteristics and diversity of organisms that belong to different invertebrate animal phyla

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
	Practical training in laboratory Procedures and Animal Specimen Identification			
1	Study of simple and compound light microscopes	Laboratory Instruments		
2	Camera Lucida (Demonstration)			
3	Simple identification. (All specimens by their generic names and 50% of these by their species name.)			
4	Simple identification. (All specimens by their generic names and 50% of these by their species name.)			
5	Simple identification. (All specimens by their generic names and 50% of these by their species name.)			
6	Simple identification. (All specimens by their generic names and 50% of these by their species name.)			
7	Scientific drawing. Specimen 1 Demonstration			
8	Scientific drawing. Specimen 2 and 3			
9	Scientific drawing. Specimen 4 and 5			
10	Scientific drawing. Specimen 6 and 7			
11	Anatomy – Study of section (Hydra)			
12	Study of larval forms.			
13	Study of larval forms.			
14	Insect identification using key. (Up to Order)			
15	Anatomy:- Study of sections. (Any two) A. Ascaris B. Earthworm C. Fasciola			
16	Dissections A. Prawn - Nervous system			
17	Dissections A. Prawn - Nervous system			
18	B. Cockroach - Nervous system			
19	B. Cockroach - Nervous system			
20	Mounting:- A. Cockroach - Salivary glands			
21	Mounting:- Mouth parts - Plant bug/House fly/Mosquito/Cockroach/Honey bee (Any Two)			
22	Mounting:-			

	C. Prawn appendages.			
23	Mounting:- C. Prawn appendages.			
24	Mounting:- D. Earthworm setae			
25	General identification A. Minimum twenty specimens. (Taxonomic classification)			
26	General identification A. Minimum twenty specimens. (Taxonomic classification)			
28	General identification Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			
29	General identification Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			
30	General identification Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			
31	General identification Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			
32	General identification Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			
33	General identification Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			
34	General identification Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			
35	General identification Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			
36	General identification Taxonomic classification and Ecological/Morphological/Evolutionary/Economic			

importance			
------------	--	--	--

COURSE PLAN

PROGRAMME	COMPLEMENTARY BOTANY FOR B.SC. ZOOLOGY	SEMESTER	2
COURSE CODE AND TITLE	15U2CPBOT2: PLANT PHYSIOLOGY	CREDIT	3
HOURS/WEEK	3	HOURS/SEM	THEORY 17 HRS; PRACTICAL 18 HRS
FACULTY NAME	PRINCY MOL A. P.		

COURSE OBJECTIVES

Know about basic mechanisms of various physiological processes related to plant life

Understand the vital plant physiological functions such as photosynthesis and respiration in plants

Know the functions of various plant growth regulators

Know the water relation of plants and its significance.

Understand and carry out experiments related to plant physiology

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	1. Water relations of plants: (a) Physical aspects of water absorption –imbibition, diffusion and osmosis.	Lecture/ Interaction/ PPT	Video, e-resource	
2	1. Water relations of plants: Plant cell as an osmotic system.	Lecture/ Interaction/ PPT	Video, e-resource	
3	Diffusion pressure deficit, water potential, plasmolysis			
4	1. Water relations of plants: (b) Mechanism of absorption of water. Active and passive absorption.	Lecture/ Interaction/ PPT		
5	2. Transpiration – types, structure and mechanism of stomatal transpiration (theories).	Lecture/ Interaction/ PPT	e-resource	
6	2. Significance and factors affecting transpiration, antitranspirants, Guttation.	Lecture/ Interaction/ PPT		
7	3. Stress Physiology – Water and salt stress, adaptations	Lecture/ Interaction/ PPT/ Practical		

CIA I				
MODULE III				
8	Dormancy of seeds, factors causing dormancy, photoblastisms	Lecture/ Interaction/ PPT	e-resource	
9	Techniques to break dormancy.	Lecture/ Interaction/ PPT/ Assignment		
10	Germination – mobilization of food reserves, physiology of fruit ripening.	Lecture/ Interaction/ PPT/ Assignment	e-resource	
11	Growth and Movements: Sigmoid curve, measurement of growth, regions of growth.	Lecture/ Interaction/ PPT/ Assignment	e-resource	
12	General account of natural growth hormones, synthetic auxins (brief account) effect of ABA.	Lecture/ Interaction/ PPT/ Assignment	e-resource	
13	Senescence and Abscission.	Lecture/ Interaction/ PPT/ Assignment		
14	Tropic and nastic movements with reference to geotropism, phototropism.	Lecture/ Interaction/ PPT/ Assignment	e-resource	
15	Seismonastic and nyctinastic movements.	Lecture/ Interaction/ PPT/ Assignment	e-resource	
16	Photoperiodism	Lecture/ Interaction/ PPT/ Assignment		
17	Vernalization	Lecture/ Interaction/ PPT/ Assignment		
PRACTICAL				
18	Demonstration experiments	Lab work		
19	Determination of osmotic pressure by plasmolytic method			
20	Demonstration of osmosis using plant membrane			

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual– Graded)	Nature of Assignment
1	18/01/2017	Diverse topics related to the course	Collect and present additional information (videos/pictures/diagrams/explanations) in the respective topics provided

REFERENCES

1	Taiz, L. and Zeiger, E. (2010). Plant physiology (5th Edn). Sinauer Associates Inc., Publishers, U.S.A.
2	Buchanan, B. B., Gruissem, W. and Jones, R. L. (2015). Biochemistry and molecular biology of plants (2nd Edn.), Wiley Blackwell, New Delhi
3	Hopkins, W. G. and Huner, N. P. A. (1995). Introduction to plant physiology (4th Edn.) John Wiley & Sons, Inc., New York.
4	Pessarakli, M. (editor) (2001). Handbook of Plant and Crop Physiology (2nd Edn.), Marel Dekker, Inc., New York
5	Rolfe, S. and Opik, H. (2005) The Physiology of Flowering Plants (4th Edn.), Cambridge University Press, UK
6	Salisbury, F. B. and Ross, C. W. (1992). Plant Physiology (4th Edn.). Wadsworth Publishing Company, New York

COURSE PLAN

PROGRAMME	COMPLEMENTARY CHEMISTRY FOR BACHELOR OF SCIENCE IN ZOOLOGY	SEMESTER	2
COURSE CODE AND TITLE	15U2CPCHE2: BASIC ORGANIC CHEMISTRY	CREDIT	2
HOURS/WEEK	2	HOURS/SEM	36
FACULTY NAME	DR. JUNE CYRIAC AND DR. RAMAKRISHNAN S		

COURSE OBJECTIVES
Understand the basics of organic chemistry.
Understand various purification techniques like solvent extraction, distillation and crystallization.
Develop an idea on stereochemistry of organic compounds
Explain the basics of organic reaction mechanism.
Discuss the classification and synthesis of polymers.
Discuss the hazards of synthetic polymers/ plastics.
Understand the concept of biodegradable alternatives for plastics.

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I : Purification of Organic Compounds : Dr. June Cyriac(3h)				
1	Purification techniques: Recrystallisation, sublimation.	Chalk & Board	Q & A Session	
2	General principles of distillation, fractional distillation, distillation under reduced pressure	Chalk & Board		
3	Solvent extraction	Chalk & Board		
MODULE II: Stereochemistry of Organic Compounds: Ms. Ammu Rosin Jose(11h)				
4	Geometrical isomerism- <i>cis</i> and <i>trans</i> configuration, 2-butene, maleic and fumaric acid,	Chalk & Board		
5	Determination of configuration of cis-trans isomers, E and Z configuration.	Chalk & Board		
6	Optical isomerism- D and L configuration. Optical activity,	Chalk & Board	quiz	
7	Chirality, Stereogenic Centre	Chalk & Board		
8	Enantiomers and diastereomers	Chalk & Board		
9	Optical isomerism in lactic acid and tartaric acid	Chalk & Board	quiz	
10	Racemisation	Chalk & Board		
11	Conformation- Newman projection, Saw-horse	Chalk & Board		

	projection			
12	Conformations of Ethane	Chalk & Board		
13	n - butane	Chalk & Board		
14	Cyclohexane.	Chalk & Board		
MODULE III: Mechanisms of Organic Reactions: Dr. June Cyriac (15h)				
15	Hybridization and shape of molecules - sp^3 , sp^2 and sp , (ethane, ethene, ethyne)	Chalk & Board	quiz	
16	Types of reagents - electrophiles, nucleophiles.	Chalk & Board		
17	Types of electron displacement in organic molecules	Chalk & Board		
18	Explanation of the strength of carboxylic and halogen substituted acids,	Chalk & Board		
19	Basic strength of primary, secondary and tertiary amines.	Chalk & Board	Q & A Session	
20	Types of bond fission- homolytic and heterolytic fission.	Chalk & Board		
21	Reactive intermediates-carbocations-Their formation and stability.	Chalk & Board		
22	Substitution reactions: Nucleophilic substitution of alkyl halides- S_N1 and S_N2 mechanisms. Factors affecting rate of Substitution reaction of alkyl halide. Nature of alkyl halide, Effect of solvent. Stereochemistry of S_N1 and S_N2 reactions.	Chalk & Board		
23	Electrophilic substitution in benzene-reaction mechanism. Halogenation, Nitration and Sulphonation	Chalk & Board		
24	Addition reactions: electrophilic addition. Addition of Bromine and Hydrogen halides to ethane, propene and ethyne-the Markwonikoff's rule, Peroxide effect.	Chalk & Board		
25	Reactive intermediates- free radicals. Their formation and stability.	Chalk & Board		
26	Substitution reactions: Nucleophilic substitution of alkyl halides- $SN1$ and $SN2$ mechanisms. Factors affecting rate of Substitution reaction of alkyl halide. Nature of alkyl halide, Effect of solvent. Stereochemistry of $SN1$ and $SN2$ reactions.	Chalk & Board		
27	Electrophilic substitution in benzene-reaction mechanism. Halogenation, Nitration and Sulphonation	Chalk & Board		
28	Addition reactions: electrophilic addition. Addition of Bromine and Hydrogen halides to ethane, propene and ethyne-the Markwonikoff's rule, Peroxide effect.	Chalk & Board		

29	Elimination reactions: E1 and E2 mechanisms. Saytzeff and Hofmann elimination	Chalk & Board		
MODULE IV: Natural and Synthetic Polymers: Ms. Ammu Rosin Jose (7h)				
30	Classification of polymers: Natural, synthetic; linear, cross-linked and network; plastics, elastomers, fibres; homopolymers and copolymers.	Chalk & Board	Quiz	
31	Polymerization reactions, Addition Polymerization,	Chalk & Board		
32	Condensation polymerization,	Chalk & Board		
33	Polyethene, polypropylene, PVC, phenol-formaldehyde resins, polyamides (nylons) and polyester.	Chalk & Board		
34	Natural rubber: structure, vulcanization.	Chalk & Board		
35	Synthetic rubbers- SBR, nitrile rubber, neoprene.	Chalk & Board		
36	Biodegradable polymers, environmental hazards caused by polymers, Health problem due to burning plastics.	Chalk & Board		

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	04/12/2016	Conformations
2	28/01/2017	SN1 and SN2 reactions

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	02/02/2017	Biodegradable Polymers

REFERENCES

1. I. L. Finar, Organic Chemistry, Vol. I, 6th edn. Pearson.
2. S. M. Mukherji, S. P Singh, R. P Kapoor, Organic Chemistry, Vol.1, New Age International (P) Ltd, 2006
3. P.S Kalsi, Stereochemistry Conformation and Mechanism, New Age International Publishers, 2004
4. Peter Sykes, A Guide Book to Mechanism in Organic Chemistry, 6th edn. Orient Longman, 1988
5. S. M. Mukherji, S.P Singh, Reaction Mechanism in Organic Chemistry, Macmillan, 3rd Edn., 2003
6. V. R. Gowariker, Polymer Science, Wiley Eastern.
7. K.S Tewari, N K Vishnoi, Text book of Organic Chemistry, Vikas Publishing House Pvt. Ltd.2007.