

**SACRED HEART COLLEGE (AUTONOMOUS)**

**DEPARTMENT OF ZOOLOGY**

**BACHELOR OF SCIENCE IN ZOOLOGY**

**Course plan**

**Academic Year 2018-19**

**Semester 2**

## PROGRAMME OUTCOME

	PROGRAMME OUTCOME
PO 1	<b>Critical Thinking:</b> Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
PO 2	<b>Effective Communication:</b> Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the word by connecting people, ideas, books, media and technology.
PO 3	<b>Effective Citizenship:</b> Demonstrate empathetic social concern and equity centered national development, and the ability to act an informed awareness of issues and participate in civic life through volunteering.
PO 4	<b>Environment and Sustainability:</b> Understand the issues of environmental contexts and sustainable development.
PO5	<b>Ethics:</b> Recognise different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.
PO 6	<b>Global Perspective:</b> Understand the economic, social and ecological connections that link the world's nations and people.

## BACHELOR OF ZOOLOGY

PROGRAM SPECIFIC OUTCOMES	
PSO 1	Understand faunal diversity through scientific classification to grasp and appreciate the complex interactions among them and the environment and their role in sustainable environment.
PSO 2	Understand the principles of aquaculture, sericulture, apiculture, vermiculture, poultry and cattle farming for the economic prosperity of the society.
PSO 3	Understand the concepts and principles of biochemistry, animal physiology, cell biology, molecular biology, genetics, biotechnology, general informatics and bioinformatics, endocrinology, developmental biology, evolution, zoogeography, ethology, ecology, disaster management, toxicology, microbiology, immunology, nutrition, community health, sanitation, ecotourism, biostatistics and research methodology and their applications in day-to-day life.
PSO 4	Perform laboratory procedures in the areas of morphology, anatomy, taxonomy, applied zoology, biochemistry, animal physiology, cell biology, molecular biology, genetics, biotechnology, general informatics and bioinformatics, endocrinology, developmental biology, evolution, zoogeography, ethology, ecology, microbiology and immunology.

### 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>B.Sc. Zoology</b>	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 OUTCOMES	PO	PSO
CO 1	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.	1,2,5	2,4,5,6
CO 2	Develops appropriate and impressive writing styles for various contexts	1,2,6	1,2,,4
CO 3	Write and correct structural imperfections and edit what they have written.	1,2,5	1,3,
CO 4	Develops capacity for making academic presentations effectively and impressively	1,2,5	2,4,6
CO 5	Synthesize information from various written sources and present them in the form of summaries.	1,2,6	2,3,4,5
CO6	Write original literary creations in different genres as directed, with/without using prompts.	2,3,4,6	1,3,5

CO - PO/PSO Mapping												
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
<b>CO 1</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>2</b>
<b>CO 2</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>
<b>CO 3</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>1</b>
<b>CO 4</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>
<b>CO 5</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>CO 6</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>1</b>

**Weight Indicators: 0 - No Mapping strength, 1 - Low, 2 - Medium, 3 – High**

SESSION	TOPIC	LEARNING RESOURCES	COURSE OUTCOME
	<b>MODULE I</b>		
1	Introduction to Critical Thinking	Lecture/PPT	CO 1,2
2	Introduction to Critical Thinking	Lecture/PPT	CO 1,2
3	Introduction to Critical Thinking	Lecture/PPT	CO 1,2
4	Introduction to Critical Thinking	Lecture/PPT	CO 1,2
5	Reasoning and Arguments	Activities/ Discussion	CO 1,2
6	Reasoning and Arguments	Activities/ Discussion	CO 1,2
7	Reasoning and Arguments	Activities/ Discussion	CO 1,2
8	Reasoning and Arguments	Activities/ Discussion	CO 1,2,6
9	Reasoning and Arguments	Activities/ Discussion	CO 1,2,6
10	Reasoning and Arguments	Activities/ Discussion	CO 1,2,6
11	Deductive and Inductive Arguments	Course book	CO 1, 2
12	Deductive and Inductive Arguments	Course book	CO 1
13	Deductive and Inductive Arguments	Course book	CO 1
14	Deductive and Inductive Arguments	Course book	CO 1
15	Deductive and Inductive Arguments	Course book	
16	Fallacies		
17	Fallacies	Course book	CO 1,2
18	Inferential Comprehension	Group Activities	CO 1,2
19	Inferential Comprehension	Group Activities	CO 1,2
20	Inferential Comprehension	Group Activities	CO 2,3
21	Inferential Comprehension	Course book	CO 2,3
22	Inferential Comprehension	Group Activities	CO 2,3
23	Inferential Comprehension	Group Activities	
24	Critical Thinking and Academic Writing	Group Activities	CO 2,3
25	Critical Thinking and Academic Writing	Group Activities	CO 2,3
26	Critical Thinking and Academic Writing	Group Activities	CO 2,3
	<b>INTERNAL ASSESSMENT TEST 1</b>		
27	Writing Models	Presentation	CO 3,4,5
28	Writing Models	Course book	CO 3,4,5
29	Writing Models		
30	Writing Models	Course book	CO 3,4,5
31	Writing Models	Course book	CO 3,4,5

32	Writing Letters		
33	Writing Letters	Course book	CO 3,4,5
34	Writing Letters	Course book	CO 3,4,5
35	Writing Letters		
36	Writing a Letter to the Editor	Course book	CO 3,4
37	Writing a Letter to the Editor	Course book	CO 3,4
38	Writing a Letter to the Editor		CO 3,4,5
39	Writing a Letter to the Editor	Course book	CO 2,3
40	Letter to the Editor	Course book	CO 2,3
41	Letter to the Editor	Course book	CO 3,4,5
42	Resume Writing		CO 3,4,5
	<b>MODULE III</b>		
43	Covering Letter	Lecture	CO 3,4,5
44	Covering Letter	Lecture	CO 3,4,5
45	Emails	Course book	CO 3,4,5
46	Emails	Course book	CO 3,4,5
47	Interview Skills		
48	Interview Skills	Course book	CO 3,4,
49	Interview Skills	Course book	CO 4,5
50	Group Discussion		
52	Group Discussion	Course book	CO 4,5
53	Accuracy in Academic writing	Course book	CO 4,5
54	Accuracy in Academic writing	Course book	CO 4,5
55	Accuracy in Academic writing		CO 4,5
56	Articles and Determiners	Course book	CO 4,5
57	Articles and Determiners	Course book	CO 4,5
58	Nouns and Pronouns		
59	Subject-verb agreement	Lecture	CO 4,5
60	Phrasal verbs	Lecture	CO 5
61	Modals		
62	Tenses	Course book	CO 3,5
63	Tenses	Course book	CO 3,5
64	Tenses		
65	Conditional clauses	Course book	CO 3,5
66	Relative Pronouns	Course book	CO 3,5
67	Passive Voices		
	<b>INTERNAL ASSESSMENT TEST 2</b>		
68	Conjunctions	Lecture	CO 3,5
69	Embedded questions	Course book	CO 3,5
70	Embedded questions	Course book	CO 3,5
71	Punctuations and Abbreviations		CO 3,5
72	Soft skills for academic presentations	Course book	CO 3,5
73	Effective communication skills	Course book	CO 3,5
74	Flip Charts, OHP, Power point presentation	Group Presentations	CO 3,5

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)	Course Outcome
1	4/1/2019	Writing Tasks- Different Types of Letters	CO 2
2	28/02/2019		CO 3

#### **GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines**

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)	Course Outcome
1	2/02/2019	Brochure design	CO 5
2	15/1/19	Model Slide Presentation	CO 5

## 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 OUTCOMES

	COURSE OUTCOMES	PO/ PSO	CL
CO 1	Appreciate inspirational literatures of various literary genres across cultures	PO1,PO2, PSO1,PSO1	U
CO 2	Critically engage with literary texts written in different languages and later translated into English	PO1, PO2, PSO1,PSO3	An
CO 3	Critically engage with biographical sketch of the authors and familiarize their personality, oeuvre and style.	PO1, PO2, PO3, PSO4,	An
CO 4	Develop a creative and insightful perspective towards life	PO1, PO2, PO3,PO4,PO5 PSO3, PSO 4	A
CO 5	Apply the unfathomable power of literatures in their writings and creative endeavors.	PO1, PO2, PO5, PSO1, PSO 2, PSO3	A

CL\* Cognitive Level

R- Remember

U- Understand

A- Apply

An- Analyze

E- Evaluate

Cr- Create



### CO - PO/PSO Mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO5
CO 1	2	2	2	1	0	1	0	0	0	0	0
CO 2	2	1	3	0	1	3	0	0	0	0	0
CO 3	3	1	0	2	2	2	0	0	0	0	0
CO 4	1	1	3	3	1	3	0	0	0	0	0
CO 5	2	2	2	1	3	2	0	0	0	0	0

### Mapping Strength

- 0- No Mapping strength
- 1- Low
- 2- Medium
- 3- High

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	COURSE OUTCOME
<b>MODULE I –GLOBALIZATION AND ITS CONSEQUENCES</b>				
1	Fritjof Capra : “The Dark Side of Growth”	PPT/Lecture	video	CO 1
2	Fritjof Capra : “The Dark Side of Growth”	PPT/Lecture	video	CO 1,2
3	Fritjof Capra : “The Dark Side of Growth”	Lecture		CO 1,6
4	Joseph Stiglitz : “Globalization”	lecture		
5	Joseph Stiglitz : “Globalization”	PPT/Lecture	video	CO 1
6	Joseph Stiglitz : “Globalization”	PPT/Lecture		CO 1
7	D H Lawrence : “Money Madness”	Lecture		CO 1,6
8	S Joseph : “For the Dispossessed”	Lecture		
9	S Joseph : “For the Dispossessed”	PPT/Lecture	video	CO 1
10	S Joseph : “For the Dispossessed”	PPT/Lecture		CO 1
11	Vandana Shiva : “The Social Costs of Economic Globalization”	Lecture		CO 1,6
12	Vandana Shiva : “The Social Costs of Economic Globalization”	Lecture		
13	Vandana Shiva : “The Social Costs of Economic Globalization”	PPT/Lecture	video	CO 1
14	Jagannath Prasad Das : “Kalahandi”	PPT/Lecture		CO 1,3
15	Jagannath Prasad Das : “Kalahandi”	Lecture		
16	Jagannath Prasad Das : “Kalahandi”	Lecture		CO 1,6
17	Leah Levin : “Universal Declaration of Human Rights”	PPT/Lecture	video	CO 1
18	Leah Levin : “Universal Declaration of Human Rights”	PPT/Lecture		CO 1

19	Leah Levin : “Universal Declaration of Human Rights”	Lecture		CO 1,6
20	Nani A Palkivala : “Human Rights and Legal Responsibilities”	PPT/Lecture	video	CO 1
21	Nani A Palkivala : “Human Rights and Legal Responsibilities”	Lecture		CO 1,6
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			
<b>MODULE II- HUMAN RIGHTS</b>				
26	Kalpana Jain : “Stigma, Shame and Silence”	PPT/Lecture		CO 2, 3
27	Kalpana Jain : “Stigma, Shame and Silence”	Lecture	video	CO 2
28	Kalpana Jain : “Stigma, Shame and Silence”	Lecture		CO 2,6
29	Wole Soyinka : “Telephone Conversation”	Lecture		
30	Wole Soyinka : “Telephone Conversation”	PPT/Lecture		CO 2,3
31	Richard Wright : “Twelve Million Black Voices”	Lecture	video	CO 2
32	Richard Wright : “Twelve Million Black Voices”	Lecture		CO 2,6
33	Richard Wright : “Twelve Million Black Voices”	Lecture		
34	Aruna Roy : “Tune in to the Voice of the Deprived”	PPT/Lecture		CO 2,3
35	Aruna Roy : “Tune in to the Voice of the Deprived”	Lecture	video	CO 2
36	Aruna Roy : “Tune in to the Voice of the Deprived”	Lecture		CO 2,6
37	Johannes V. Jensen : “Lost Forests”	Lecture		
38	Johannes V. Jensen : “Lost Forests”	PPT/Lecture		CO 2,3
39	Johannes V. Jensen : “Lost Forests”	Lecture	video	CO 2,6
40	Omprakash Valmiki : “Joothan”	Lecture		
41	Omprakash Valmiki : “Joothan”	Discussion		
42	Omprakash Valmiki : “Joothan”	Presentation		
<b>MODULE –III Gender Question</b>				
43	Jamaica Kincaid : “Girl”	Presentation		
44	Jamaica Kincaid : “Girl”	Presentation		
<b>MODULE III- GENDER QUESTION</b>				
45	Jamaica Kincaid : “Girl”	Lecture	Video	
46	Taslina Nasrin : “At the Back of Progress”	Discussion		CO!, CO6
47	Taslina Nasrin : “At the Back of Progress”			CO1
48	Taslina Nasrin : “At the Back of Progress”			CO 3, 1
49	Judy Brady : “Why I Want a Wife”	Lecture	Video	CO 3,5
50	Judy Brady : “Why I Want a Wife”	Lecture, discussion		CO 3,6
51	Judy Brady : “Why I Want a Wife”	Lecture, discussion		CO 3,1
52	J B Priestley : “Mother’s Day”	Lecture, discussion		CO 4,5

53	J B Priestley : "Mother's Day"	Lecture		CO 4,6
54	J B Priestley : "Mother's Day"	Discussion	Video	
55	J B Priestley : "Mother's Day"	Lecture		CO 4,1
56	Amartya Sen : "More Than 100 Million Women are Missing"	Lecture		CO 4,5
57	Amartya Sen : "More Than 100 Million Women are Missing"	Presentation		CO 4,6
58	Amartya Sen : "More Than 100 Million Women are Missing"	Presentation		CO 3, 1
59	Amartya Sen : "More Than 100 Million Women are Missing"	Presentation		CO 3, 1
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)	Course Outcome
1	2/1/2019	Presentations	CO 2
2	28/1/2019	Role Plays	CO 3

#### GROUP ASSIGNMENTS/ACTIVITIES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)	Course Outcome
1	12/1/2019	Group Discussions	CO 5
2	20/1/2019	Performances	CO 4

#### 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 OUTCOMES	PO/ PSO	CL
CO 1	Recognize and get introduced to the minor genres such as essay to develop their social and moral sense in life.	PO1,PO2, PO 3,PO4 ,PO6	U,Cr
CO 2	Define grammatical structure of Hindi language and analyse the problems, challenges of communication in Hindi.	PO2, PO6, PSO1	U
CO 3	Use Hindi language for effective communication in different fields like administration, office proceedings, insurance etc.	PO1, PO2, PO6,PSO1	A
CO 4	Understand translation as a linguistic, communicative and cultural activity.	PO2, PO5, PO6, PSO1	U
CO 5	Acquire skills of correspondence, drafting official and scientific documents in the fields of administration, media and business.	PO1, PO2, PO6, PSO1	A

CL\* Cognitive Level

R- Remember

U- Understand

B- Apply

An- Analyze

E- Evaluate

Cr- Create

### CO - PO/PSO Mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4
CO 1	2	2	1	2		1				
CO 2		2				2	1			
CO 3	2	2				2	1			
CO 4		2			1	2	1			
CO 5	2	2				1	1			

**Mapping Strength**

0. No Mapping strength
1. Low
2. Medium
3. High

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

35	Part II Patra Lekhan , Nimantran Patra	Lecture/PPT		CO 5
36	Nibandh 3	Lecture		CO 1
37	Nibandh 3,Exercise	Lecture/ Discussion		CO 1
38	Exercise –Translation	Lecture		CO 4
39	Exercise –Translation	Lecture/ Discussion		CO 4
40	Part II Patra Lekhan,Vyavasayik Patra	Lecture/PPT		CO 5
41	Nibandh 4	Lecture		CO 1
42	Nibandh 4,Exercise	Lecture/Discussion	Exercise	CO 1
43	Nibandh 5	Lecture/Discussion		CO 1
44	Nibandh 6	Lecture		CO 1
45	Nibandh 6,Exercise	Lecture/ Discussion	Exercise	CO 1
46	Revision	Interaction		CO 1
47	CIA – II (2 Hours Exam)			
<b>MODULE III</b>				
48	Exercise Oriented Grammar	Lecture/PPT		CO2
49	Exercise Oriented Grammar	Lecture	Exercise	CO2
50	Nibandh 7	Lecture		CO 1
51	Nibandh 7, Exercise	Lecture/Discussion	Exercise	CO 1
52	Part II Patra Lekhan, Adhikarik Patra	Lecture/PPT		CO 5
53	Part II Patra Lekhan, Adhikarik Patra	Lecture/ Discussion		CO 5
54	Exercise –Translation	Lecture		CO 4
55	Exercise –Translation	Lecture/Discussion		CO 4
56	Nibandh 8	Lecture		CO 1
57	Nibandh 8,Exercise	Lecture/ Discussion		CO 1
58	Exercise –Translation	Lecture		CO 4
59	Exercise Oriented Grammar	Lecture/PPT		CO2
60	Exercise Oriented Grammar	Lecture	Exercise	CO2
61	Part II Patra Lekhan, Shikayati Patra	Lecture/Discussion		CO 5
62	Nibandh 9	Lecture		CO 1
63	Nibandh 9,Exercise	Lecture/ Discussion		CO 1
64	Exercise – Translation	Lecture		CO 4
65	Part II Patra Lekhan , Karyalayi Patra	Lecture/PPT		CO 5
66	Nibandh 10	Lecture		CO 1
67	Nibandh 10,Exercise	Lecture/Discussion		CO 1
68	Seminar	Presentation by students		CO 2
69	Seminar	Presentation by students		CO 2
70	Revision	Interaction		
71	Revision	Interaction		
72	Evaluation of the course			

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

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

### 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)	Course Outcome
1	January	Exercise activity based on Patra lekhan (Group Discussion)	CO 5
2	January	Translation of a passage from English to Hindi.(Group Activity)	CO 4

#### References

- Hindi vyakaran by Kamta Prasad Guru , Prabhat Prakashan

#### Web resource references:

- [epustakalay.com](http://epustakalay.com)
- [www.hindikunj.com](http://www.hindikunj.com)

## COURSE PLAN

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

	COURSE OUTCOMES	PO/ PSO	CL
CO 1	Understand the basic concepts of French language including grammar, vocabulary and sentence structure	PO1,PO2, PO6, PSO3	U
CO 2	Understand the basic communication skills necessary for living in France and French speaking countries.	PO1, PO5,PO6, PO2,PSO3	U
CO 3	Describe oneself and ones surroundings using a repertory of words and expressions in a simple and structured grammatical manner.	PO1, PO4, PO6,PSO3	A
CO 4	Develop business communication skills	PO2, PO4,PO5, PO6,PSO3	A
CO 5	Express an issue of concern including topics like environmental, social or health issues, enumerate its causes and consequences and suggest solutions	PO1,PO2,PO3,PO5,PO6,PSO3	A
CO 6	Understand the mannerisms, culture and tradition of France and Francophone countries and compare it to one's own country and develop co-cultural feeling	PO6,PO2,PSO3	U
CO 7	Understand and appreciate the history of France and Francophone countries and compare it to one's own country	PO2,PO6,PSO3	U
CO 8	Understand the special features of France including gastronomy, social institutions, policis, the present French scenario and compare it to one's own country	PO1,PO2,PO5,PO6,PSO3	U

CL\* Cognitive Level

CL\* Cognitive Level

R- Remember

U- Understand

C- Apply

An- Analyze

E- Evaluate

Cr- Create



### CO - PO/PSO Mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4
CO 1	2	2				2			1	
CO 2	2	2			2	2			1	
CO 3	2			2		2			1	
CO 4		2		2	2	2			1	
CO 5	2	2	2		2	2			1	
CO6		2				2			1	
CO7		2				2			1	
CO8	2	2			2	2			1	

### Mapping Strength

0. No Mapping strength
1. Low
2. Medium
3. High

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	COURSE OUTCOME
<b>MODULE I</b>				
1	Introducing French Basics	Role play, games		CO 1,2,3
2	French Basics	Lecture		CO 1,2,3
3	Pronominal verbs	Games, music		CO 1,2,3
4	Pronominal verbs practice	Games		CO 1,2,3
5	Sentence construction using pronominal verbs	Games		CO 1,2,3
6	Sentence construction	Games		CO 1,2,3
7	Sentence construction	Games		CO 1,2,3
8	Grammar- present tense	Role play		CO 1,2,3
9	Communicative skills	Lecture		CO 1,2,3
10	Communicative skills	Role Play		CO 1,2,3
11	Communicative skills	Role Play		CO 1,2,3
12	Narrate a day	Discussions ICT		CO 6,7,8
13	Narrate a day	Discussions		CO 6,7,8
<b>MODULE II</b>				
14	Interrogative adjectifs	Game		CO 2,3
15	Interrogative adjectifs	Lecture		CO2,3
16	Demonstrative adjectives	Game		CO2,3
17.	Demonstrative Adjectives	Lecture		CO 2,3
18.	Sentence construction	Games		CO 2,3

19	Sentence construction	Games		CO2,3
20	civilisation	discussion		CO 2,3
21	Vocabulary building	games		CO 2,3
22	Vocabulary Building	Games		CO2,3
23	Buying a product, French products	Lecture/Discussion		CO 5,6,7,8
24	Buying a product	Role play		CO 5,6,7,8
25	Buying a product	Role play		CO5,6,7,8
26	Revision			
27	Revision			
28	revision			
29	CIA I			
<b>MODULE III</b>				
30	Food vocabulary	PPT/Lecture		CO 1,2,3
31	Food vocabulary	Games		CO 1,2,3
32	Intercultural studies	Discussions		CO 5,6,7,8
33	Sentence construction	Role play		CO 1,2,3
34	Sentence Construction	Games		CO 1,2,3
35	Articles partitifs	music		CO 3
36	Sentence construction(negative form)	games		CO 3
37	Future proche	Lecture		CO 3
38	Future proche	Lecture		CO 3
39	Giving and taking order	Role play		CO1,2,3
40	Ordering at a restaurant	Role play		CO 1,2,3
41	Vocabulary building	Games, music		CO 1,2,3
42	Vocabulary building	Games, Music		O 1,2,3
43	civilisation	PPT/Discussion		CO 5,6,7,8
44	Civilisation	Discussion		CO 5,6,7,8
CIA II				
<b>MODULE IV</b>				
45	Past tense (avoir)	Lecture		CO2,3
46	Past tense(etre)	Lecture		CO 2,3
47	Past tense (pronominal)	Lecture		CO2,3
48	Sentence formation	Games		CO2,3
49	Sentence formation	Games		CO2,3
50	Describe a past event	Lecture		CO 1,2,3
51	Narrate your day in the past	communication		CO1,2,3
52	Diary writing	assignment		CO5,6,7
53	Vocabulary building	games		CO 1,2,3
54	Part time jobs, vocabulary	Lecture		CO 1,2,3
55	Part time jobs-ads	Role plays		CO1,2,3
56	Exploring part time jobs	Role play		CO5,6,7,8
57	Putting up an ad and responding to an ad on part-time job	Lecture/Seminar/Discussion		CO 5,6,7,8
58	Putting up an ad and responding to an ad on part-time job	Role play		CO5,6,7,8
59	French culture	Discussion		CO5,6,7,8

60	French Culture	Discussion		CO5,6,7,8
61	French culture	Discussion		CO5,6,7,8
62	French culture	Discussion		CO5,6,7,8
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)	Course Outcome
1	By February	Presentation on gastronomy of each region	CO 2,3,6,8
2		roleplays	CO 123456

### 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	Dr.VIJAYARAJAN K.U		

	COURSE OUTCOMES	PO/ PSO	CL
CO 1	Developing the basic knowledge in Sanskrit	PO1,PO2, PO6, PSO2	U
CO 2	Students develop the communication skills in sanskrit	PO1, PO5,PO6,PO2,PSO2	U
CO 3	Students familiarize the figures of speech and their usage	PO1, PO4, PO6,PSO2	A
CO 4	Students get an awareness about aesthetic values	PO2, PO4,PO5, PO6,PSO2	A
CO 5	Students get an awareness about Indian classical poetic tradition	PO1,PO2,PO3,PO5,PO6,PSO2	A
CO 6	Understand moral values through Drama	PO6,PO2,PSO2	U
CO 7	Students develop writing skills in Sanskrit	PO2,PO6,PSO2	U
CO 8	Students get awareness about Verbal forms	PO1,PO2,PO5,PO6,PSO2	U

CL\* Cognitive Level

R- Remember

U- Understand

D- Apply

An- Analyze

E- Evaluate

Cr- Create

### CO -PO/PSO Mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4
CO 1	2	2				2		1		
CO 2	3	3			2	2		2		
CO 3	2			2				1		
CO 4		2		3	2	2		1	2	
CO 5	2	2	2		2	3		1		
CO6		2				3		1	1	
CO7		2				2		2		
CO8	2				2	2		1	2	

### Mapping Strength

0. No Mapping strength
1. Low
2. Medium
3. High

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	COURSE OUTCOME
<b>MODULE I</b>				
1	Introducing Vibhakthi	Lecture		CO 1,2
2	Prathama vibhakthi	Discussion		CO 1,2
3	Dvitheeya vibhakthi	Lecture		CO 1,2
4	Thritheeya vibhakthi	Lecture	e-resource	CO 1,2
5	Chathurthi vibhakthi	Lecture		CO 1,2
6	Panchami vibhakthi	Chalk n talk		CO 1,2
7	Shashti vibhakthi	Lecture		CO 1,2
8	Sapthami vibhakthi	Chalk n talk		CO 1,2
9	Sambhodhanaprathama	Lecture		CO 1,2
10	Akarantha pulinga bala shabha	Lecture		CO 1,2
11	Aakarantha sthreeinga Latha shabdha	Discussion		CO 1,2
12	Ekarantha pulinga Kavi shabdha	Discussion		CO 1,2
13	Ukarantha pulinga Guru shabdha	PPT/Lecture		CO 1,2
14	Revision			
<b>MODULE II</b>				
15	Structure of sentence- Present tense	PPT/Lecture		CO 7,8
16	Prathama purusha ekavachaam	Chalk n talk		CO 7,8
17	Prathama purusha dvivachaam	Lecture		CO 2,7,8
18	Prathama purusha bahuvachaam	Lecture		CO 2,7,8
19	Madhyama purusha ekavachaam	Lecture		CO 2,7,8
20	Madhyam purusha dvivachaam	Game		CO 3,7,8
21	Madhyam purusha bahuvachaam	Game		CO 3,7,8
22	Uthamapurusha ekavachaam	PPT/Lecture		CO 3,7,8
23	Uthamapurusha dvivachaam	PPT/Lecture		CO 3,7,8
24	Uthamapurusha bahuvachaam	Lecture		CO 3,7,8
25	Past tense- Prathamapurusha	Lecture		CO 3,7,8
26	CIA-1			
27	Past tense -Madhyamapurusha	Lecture		CO 3,5,7,8
28	Past tense - Uthamapurusha	Chalk n talk		CO 3,5,7,8
29	Future tense - Prathamapurusha	Chalk n talk		CO 3,5,7,8
30	Future tense - Madhyamapurusha	Discussion		CO3,5,7,8
31	Future tense - Uthamapurusha	Discussion		CO 3,5,7,8
32	Sentence making in Sanskrit-Active voice	Lecture		CO 7,8
33	Sentence making in Sanskrit –Passive voice	Lecture		CO 7,8
34	Revision			
35	Revision			

MODULE III				
36	Introduction Meghadootha	Lecture		CO 3,6,7
37	Explaining Khandakavyam	Lecture		CO 3,6,7
38	Yaksha -curse	PPT/Lecture		CO 3,6,7
39	Yaksha's meeting with cloud	PPT/Lecture		CO 3,6,7
40	Requesting to cloud	PPT/Lecture		CO 3,6,7
41	Praising cloud	Lecture		CO 3,6,7
42	Yaksha directing cloud	Lecture		CO 3,6,7
43	Meeting with Balaka bird	Chalk n talk		CO 3,6,7
44	Departure	Discussion		CO 3,6,7
45	Rajahamsa	Roleplay		CO 3,6,7
46	Explaining Mountain	Discussion		CO 3,6,7
47	Directing to Megha	PPT/Lecture		CO 4,7
48	Revision			
49	Revision			
MODULE IV				
50	Introduction Mrichakatika drama	PPT/Lecture		CO 3,6,8
51	Charudatha	PPT/Lecture	Video	CO 3,6,8
52	Vasanthasena	PPT/Lecture		CO 3,6,8
53	Vasanthasena's visiting	PPT/Lecture		CO 3,6,8
54	Rajasyala Samsthanaka	Lecture		CO 3,6,8
55	Vasanthasena 's meeting with Charudatha	Lecture	Debate	CO 3,6,8
56	Matithreya's conversation with Radanika	PPT/Lecture		CO 3,6,8
57	Rohasena	PPT/Lecture		CO 3,6,8
58	Dvitheeyanka	PPT/Lecture		CO 3,6,8
59	Gambling incident	PPT/Lecture		CO 3,6,8
60	Catching Gambler	PPT/Lecture		CO 3,6,8
61	Escaping	PPT/Lecture		CO 3,6,8
CIA - II				
62	Vasanthasena's talk with her servant			CO 3,6,7
63	thritheeyanka	Lecture		CO 3,6,8
64	Rebhila's music discussion	Lecture	Group discussion	CO 3,4,8
65	Sharvilaka –the thief	Lecture		CO 3,4,8
66	Taking gold from Maithreya	PPT/Lecture		CO 3,4,8
67	Charudatha talk with Maithreya	PPT/Lecture		CO 3,4,8
68	Dootha's talking	PPT/Lecture		CO 3,4,8
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)	Course Outcome
1	By February	Kalidasa's Mahakavyas	CO 6,8
2		Sanskrit Drama	CO 6

**GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines**

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)	Course Outcome
1	By February	Bhasa's dramas	CO 6
2		Khandakavyas in Sanskrit	CO 4,8

**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.Samskritavyakaranapravesika, Pandit L Anantharama Sastri
- 7.Balabodhini, Rajarshi Sree Rama Varma, Publication Divison, Govt.Sanskrit College, Trippunittura

**COURSE PLAN**

PROGRAMME	<b>B.Sc ZOOLOGY</b>	SEMESTER	2
COURSE CODE & TITLE	15U2CCMAL2A കവിത	CREDITS	4
HOURS/WEEK	4	HOURS/SEM	72
FACULTY NAME	<b>VISHNU RAJ P, Dr. JUSTINA K AUGUSTINE</b>		

CO No	COURSE OUTCOMES	CL	PSO	PO
1	കവിത എന്ന സാഹിത്യരൂപത്തെക്കുറിച്ച് മെച്ചപ്പെട്ട ധാരണ ഉണ്ടാക്കുക	Un	1	1,3
2	ഭാഷാപഠനം സാഹിത്യാനുഭവത്തിലൂടെ ആവിഷ്കരിക്കുക	Re	1	2,3
3	വായനാഭിരുചി വർദ്ധിപ്പിക്കുക	Ap	1	3,4
4	സാഹിത്യ പരിചയം ഉണ്ടാക്കുക	Un	1	1,2,3
5	വ്യാവഹാരിക തലത്തിൽ മാതൃഭാഷാപ്രയോഗിക്കുവാനുള്ള കഴിവ് നേടുക	Ap	1	1,3,5
6	ഭാഷാപഠനത്തിലൂടെ ആശയവിനിമയശേഷി വർദ്ധിപ്പിക്കുക	Cr	1	1,2,6

CO – PO/PSO mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4
CO 1	2	0	0	0	0	0	1	0	0	0
CO 2	0	2	1	0	0	0	1	0	0	0
CO 3	0	0	0	0	2	2	1	0	0	0
CO 4	1	2	1	0	0	0	1	0	0	0
CO5	1	0	2	0	1	0	1	0	0	0
CO6	1	2	0	0	0	1	1	0	0	0

**Mapping Strength: 0-No Mapping strength, 1- Low, 2-Medium, 3-High**



## COURSE PLAN

Session	Topic	Learning Resources	Teaching Method	Course Outcome
<b>Module I</b>				
1	മലയാളസാഹിത്യം സാമാന്യാവലോകനം	സാഹിത്യചരിത്രങ്ങൾ	Lecturing	1,2,3,4
2	മലയാളകവിതയുടെ ചരിത്രം-1	സാഹിത്യചരിത്രങ്ങൾ	Lecturing	1,2,3,4
3	മലയാളകവിതയുടെ ചരിത്രം-2	സാഹിത്യചരിത്രങ്ങൾ	Discussion	1,2,3,4,6
4	ചങ്ങമ്പുഴയുടെ രചനാലോകം	കവിതാപഠനങ്ങൾ	Lecturing	2,3,4
5	മനസിനി	Text	Reading	1,2,3,4,5,6
6	മനസിനി	Text	Group Discussion	1,2,3,4,5,6
7	സൂര്യകാന്തി	കവിതാപഠനങ്ങൾ	Lecturing	2,3,4
8	സൂര്യകാന്തി	Text	Reading	1,2,3,4,5,6
9	ഗോപികാദണ്ഡകം	Text	Group Discussion	1,2,3,4,5,6
10	ഗോപികാദണ്ഡകം	കവിതാപഠനങ്ങൾ	Lecturing	2,3,4
11	ഗോപികാദണ്ഡകം	Text	Reading	1,2,3,4,5,6
12	വിരാമം	Text	Group Discussion	1,2,3,4,5,6
13	വിരാമം	കവിതാപഠനങ്ങൾ	Lecturing	2,3,4
14	വിരാമം	Text	Reading	1,2,3,4,5,6
15	പുതിയമാഷന്മാർ	Text	Group Discussion	1,2,3,4,5,6
16	പുതിയമാഷന്മാർ	Text	Group Discussion	1,2,3,4,5,6
17	പഠിച്ച കവിതകൾ ഒരു അവലോകനം	Text	Group Discussion	1,2,3,4
<b>Module II</b>				
18	ആധുനിക മലയാളകവിതയുടെ സ്വഭാവങ്ങൾ	കവിതാപഠനങ്ങൾ	Lecturing	2,3,4
19	യുഗളപ്രസാദൻ	Text	Reading	1,2,3,4,5,6
20	യുഗളപ്രസാദൻ	Text	Group Discussion	1,2,3,4,5,6
21	ആത്മഹത്യ ചെയ്ത കർഷകൻ വെള്ളത്തെക്കുറിച്ച് സംസാരിക്കുന്നു	Text	Lecturing	2,3,4
22	ആത്മഹത്യ ചെയ്ത കർഷകൻ	Text	Reading	1,2,3,4,5,6

	വെള്ളത്തെക്കുറിച്ച് സംസാരിക്കുന്നു			
23	ആത്മഹത്യ ചെയ്ത കർഷകൻ വെള്ളത്തെക്കുറിച്ച് സംസാരിക്കുന്നു	Text	Group Discussion	1,2,3,4,5,6
24	കളുകൾ	കവിതാ പഠനങ്ങൾ	Lecturing	2,3,4
25	കളുകൾ	Text	Reading	1,2,3,4,5,6
26	പറക്കം	Text	Group Discussion	1,2,3,4,5,6
27	പറക്കം	കവിതാ പഠനങ്ങൾ	Lecturing	2,3,4
28	കീരി	Text	Reading	1,2,3,4,5,6
29	കീരി	Text	Group Discussion	1,2,3,4,5,6
30	പഠിച്ച കവിതകൾ ഒരു അവലോകനം	Text	Group Discussion	1,2,3,4
31	Internal Assessment 1	Text		
32	Question paper discussion	Text	Group Discussion	1,2,3,4,5,6
<b>Module III</b>				
33	മലയാള - നൂതന പ്രവണതകൾ	കവിതാ പഠനങ്ങൾ	Lecturing	2,3,4
34	കാക്ക	Text	Reading	1,2,3,4,5,6
35	കാക്ക	Text	Group Discussion	1,2,3,4,5,6
36	മോഹൻദാസും ഗാന്ധിയും നാമുറാം ഗോഡ്സെയും	കവിതാ പഠനങ്ങൾ	Lecturing	2,3,4
37	മോഹൻദാസും ഗാന്ധിയും നാമുറാം ഗോഡ്സെയും	Text	Reading	1,2,3,4,5,6
38	നാരാണത്ത് പാറ	Text	Group Discussion	1,2,3,4,5,6
39	നാരാണത്ത് പാറ	കവിതാ പഠനങ്ങൾ	Lecturing	2,3,4
40	യശോധാരയെന്നവൾ	Text	Reading	1,2,3,4,5,6
41	യശോധാരയെന്നവൾ	Text	Group Discussion	1,2,3,4,5,6
42	മാമ്പഴപ്പാത	കവിതാ പഠനങ്ങൾ	Lecturing	2,3,4
43	മാമ്പഴപ്പാത	Text	Reading	1,2,3,4,5,6
44	മാമ്പഴപ്പാത	Text	Group Discussion	1,2,3,4,5,6
45	പഠിച്ച കവിതകൾ ഒരു അവലോകനം	Text	Group Discussion	1,2,3,4
<b>Module- IV</b>				
46	മലയാള - നൂതന പ്രവണതകൾ	കവിതാ പഠനങ്ങൾ	Lecturing	1,2,3,4
47	ചിന്താഗ്നി	Text	Group Discussion	1,2,3,4
48	ചിന്താഗ്നി	Text	Lecturing	1,2,3,4
49	ആ പശുക്കുട്ടിയുടെ	Text	Group Discussion	1,2,3,4

	മരണം			
50	ആ പശുകുട്ടിയുടെ മരണം	കവിതാ പഠനങ്ങൾ	Lecturing	1,2,3,4
51	തേൾക്കുടം	Text	Lecturing	1,2,3,4
52	തേൾക്കുടം	Text	Group Discussion	1,2,3,4,6
53	കൗസല്യ	Text	Group Discussion	1,2,3,4,6
54	കൗസല്യ	Text	Group Discussion	1,2,3,4,6
55	കൗസല്യ	Text	Group Discussion	1,2,3,4,6
56	എന്തു ശുത്തി ഏതു ശുത്തി	Text	Group Discussion	1,2,3,4,6
57	എന്തു ശുത്തി ഏതു ശുത്തി	Text	Group Discussion	1,2,3,4,6
58	സമകാലിക മലയാള കവിത	കവിതാ പഠനങ്ങൾ	Group Discussion	1,2,3,4,6
59	സമകാലിക മലയാള കവിത	Text	Group Discussion	1,2,3,4,6
60	സമകാലിക മലയാള കവിത	Text	Group Discussion	1,2,3,4,6
61	പഠിച്ച കവിതകൾ ഒരു അവലോകനം	കവിതാ പഠനങ്ങൾ	Group Discussion	1,2,3,4,6
62	പഠിച്ച കവിതകൾ ഒരു അവലോകനം	Text	Group Discussion	1,2,3,4,6
	Internal Assessment 2			
63	Question paper discussion	Text	Group Discussion	1,2,3,4,6
64	പഠിച്ച കവിതകൾ ഒരു അവലോകനം	കവിതാ പഠനങ്ങൾ	Group Discussion	1,2,3,4,6
65	പഠിച്ച കവിതകൾ ഒരു അവലോകനം	കവിതാ പഠനങ്ങൾ	Group Discussion	1,2,3,4,6
66	സംവാദം-	Text	Group Discussion	1,2,3,4,6
67	സെമിനാർ	Text	Presentation	1,2,3,4,6
68	സെമിനാർ	Text	Presentation	1,2,3,4,6
69	സെമിനാർ	Text	Presentation	1,2,3,4,6
70	സെമിനാർ	Text	Presentation	1,2,3,4,6
71	സെമിനാർ	Text	Presentation	1,2,3,4,6
72	Evaluation of the course	Text	Group Discussion	1,2,3,4,5,6

### ASSIGNMENTS

Sl no	Date of submission/completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)	Weightage
1	By February	മലയാളത്തിലെ തെരഞ്ഞെടുത്ത കവികളുടെ വിവരങ്ങൾ	1,2,3,4,5,6
2		സിലബസിൽ പഠിക്കാൻ ഇല്ലാത്ത കവിതകളുടെ ആസ്വാദനം	1,2,3,4,5,6

### SEMINAR

	Date of submission/completion	Topic of semiar & Nature of seminar (Individual/Group – Written/Presentation – Graded or Non-graded etc)	Weightage
1	By February	പാഠഭാഗങ്ങളുടെ അവതരണം	1,2,3,4
2		പാഠഭാഗങ്ങളുടെ അവതരണം	1,2,3,4,5

**Reference :**

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

## COURSE PLAN

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

	<b>COURSE OUTCOMES</b>	<b>PO/ PSO</b>	<b>CL</b>
CO 1	Understand the taxonomic characteristics of non-chordate animals	PO1/PSO1	U
CO 2	Understand the diversity of Phylum Platyhelminthes and Aschelminthes	PO1/PSO1	U
CO 3	Understand the pathogenecity of worms of the phyla Platyhelithes and Aschelminthes	PO1/PSO1	U
CO 4	Understand the taxonomic characteristics of Phylum Annelida	PO1/PSO1	U
CO 5	Understand the diversity of Annelids	PO1/PSO1	U
CO6	Understand the taxonomic characteristics of Phylum Arthropoda, Phylum Mollusca and Phylum Echinodermata	PO1/PSO1	U
CO7	Understand the diversity of Phylum Arthropoda, Phylum Mollusca and Phylum Echinodermata	PO1/PSO1	U
CO8	Understand the evolutionary significance and taxonomic characteristics of Minor Phyla and Phylum Hemichordata	PO1/PSO1	U

CL\* Cognitive Level

CO – {PO / PSO mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4
CO 1	3	1	2	2	0	2	1	3	1	0
CO 2	3	1	2	2	0	2	1	3	1	1
CO 3	3	1	2	2	0	2	1	3	1	1
CO 4	3	1	2	2	0	2	1	3	1	1
CO 5	3	1	2	2	0	2	1	3	1	1
CO 6	3	1	2	2	0	2	1	3	1	1
CO 7	3	1	2	2	0	2	1	3	1	1
CO 8	3	1	2	2	0	2	1	3	1	1

### Mapping Strength

- 0- No Mapping strength
- 1- Low
- 2- Medium
- 3- High

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	COURSE OUTCOME
<b>Module I- Phylum Platyhelminthes</b>		<b>3 Hr</b>		
1	Introduction to Phylum Platyhelminthes- General Characteristics and taxonomy	PPT/Lecture		CO1
2	Classification upto classes. Class I - Turbellaria. Eg. Planaria. Class II – Trematoda Eg. Fasciola Class III- Cestoda Eg. <i>Taenia saginata</i> .	PPT/Lecture		CO2
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		CO3
<b>Module II. Phylum Aschelminthes.</b>		<b>2hrs</b>		
4	Introduction to Phylum Aschelminthes. Eg. Enterobius.	PPT/Lecture		CO2
5	<b>General Topic-</b> Pathogenic nematodes	PPT/Lecture		CO3
<b>Module III- Phylum Annelida</b>		<b>7 hrs</b>		
6	Introduction to Phylum Phylum Annelida	PPT/Lecture		CO4
7	Classification upto classes. Class I- Archiannelida Eg. Polygordius Class II – Polychaeta Eg. Chaetopterus	PPT/Lecture		CO5
8	ClassIII- Oligochaeta Eg. Megascolex. Class IV - Hirudinea Eg. Ozobranhus	PPT/Lecture		CO5
9	Study of <b>Type - Earthworm</b> Habit habitat, Ecological significance	PPT/Lecture		CO5
10	Earthworm: Nutrition and Digestion	PPT/Lecture		CO5
11	Earthworm: Respiration, Excretion	PPT/Lecture		CO5
12	Earthworm: Reproduction	PPT/Lecture		CO5
<b>MODULE IV Phylum Arthropoda</b>		<b>12 hrs</b>		

13	Salient features and classification scheme of Phylum Arthropoda	PPT/Lecture	Video	CO6
14	Classification up to classes. Introduction to 4 subphyla. 1. Sub Phylum - Trilobitomorpha Class - Trilobita	PPT/Lecture		CO7
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		CO7
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		CO7
17	4. Sub Phylum - Chelicerata Class - Merostomata <i>Eg. Limulus</i> Class II – Arachnida <i>Eg. Scorpion</i>	PPT/Lecture		CO7
18	Type: <i>Panaeus</i> Habit and Habitat, Body Structure and Appendages	PPT/Lecture		CO7
19	<i>Panaeus</i> : Digestive System	PPT/Lecture		CO7
20	<i>Panaeus</i> : Respiratory system and Excretory system	PPT/Lecture		CO7
21	<i>Panaeus</i> : Circulatory system	PPT/Lecture		CO7
22	<i>Panaeus</i> : Reproduction	PPT/Lecture		CO7
23	Larval forms of <i>Panaeus</i>	PPT/Lecture		CO7
24	General Topic Vectorial Arthropods	PPT/Lecture		CO6
	<b>Module V- Phylum Mollusca</b>	<b>5hrs</b>		
25	Introduction to Phylum Mollusca General features Classification up to classes Class I- Monoplacophora, <i>Eg. Neopilina</i> Class II- Amphineura, <i>Eg. Chiton</i>	PPT/Lecture		CO6
26	Class III- Gastropoda, <i>Eg. Aplysia</i> Class IV- Scaphopoda, <i>Eg. Dentalium</i>	PPT/Lecture		CO7
27	Class V-Pelecypoda, <i>Eg. Pinctada</i> Class VI- Cephalopoda, <i>Eg. Sepia</i>	PPT/Lecture	Video	CO7
28	Pearl formation	PPT/Lecture		CO7
29	Pearl culture	PPT/Lecture		CO7
	<b>Module VI Phylum Echinodermata</b>	<b>4 hrs</b>		
30	Classification upto classes Class I- Asteroidea, <i>Eg. Astropecten</i> Class II- Ophiuroidea, <i>Eg. Ophiothrix</i>	PPT/Lecture		CO6
31	Class III- Echinoidea, <i>Eg. Echinus</i>	PPT/Lecture		CO7

	Class IV- Holothuroidea, Eg. Holothuria			
32	Class V – Crinoidea, Eg. Antedon Brief account on larval forms.	PPT/Lecture	Video	CO7
33	Water vascular system in Echinodermates	PPT/Lecture	Video	CO7
	<b>Module VII Minor Phyla</b>	<b>2 hrs</b>		
34	General account and examples	PPT/Lecture		CO8
35	General account and examples	PPT/Lecture		CO8
	<b>Module VIII- Phylum Hemichordata</b>	<b>1 hr</b>		
36	<b>Phylum Hemichordata</b> Eg. Balanoglossus (Affinities)	PPT/Lecture		CO8

#### INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)	Course Outcome
1	15/12/2018	Vector Arthropods	CO 6
2	28/01/2019	Pearl Culture	CO 7

#### GROUP ASSIGNMENTS/ACTIVITIES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)	Course Outcome
1	02/02/2019	Parasitic Nematodes	CO3

#### 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 <i>Invertebrate Zoology</i> . R. Chand and Co. Delhi.
3	Ekambaranatha Ayyar M. 1990. <i>A Manual of Zoology</i> . Volume I. <i>Invertebrate part-I and part-II</i> . 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. <i>What is life? Mind and Matter</i> . 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) <i>Biological Science</i> , Cambridge College, Press, p 951.
10	Thomas, A.P. (Editor) 2009. <i>Biology – Perspectives and Methods</i> . Green Leaf Publishers, Kottayam.



## COURSE PLAN

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

	<b>COURSE OUTCOMES</b>	<b>PO/ PSO</b>	<b>CL</b>
CO 1	Understand the principles of biological laboratory instruments	PO1, PSO4	A
CO 2	Develop skill in using simple as well as compound light microscopes	PO1, PSO4	A
CO 3	Apply the skill of drawing using a camera lucida to trace the outline of a microscopic organism	PO1, PSO1	A
CO 4	Identify, at least ten specimens, up to its genus by examining its morphology	PO1, PSO4	A
CO 5	Understand the approaches and systems of classification as well as modern trends in animal taxonomy	PO1, PSO4	A
CO6	Understand the characteristics and classification of the Kingdom Protista	PO1, PSO4	A
CO7	Understand the Classification of Kingdom Animalia and the characteristics of Mesozoa, Parazoa and Metazoa	PO1, PSO4	A
CO8	Understand the characteristics and diversity of organisms that belong to different invertebrate animal phyla	PO1, PSO4	A

CL\* Cognitive Level

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	COURSE OUTCOME
Practical training in laboratory Procedures and Animal Specimen Identification				
1	Study of simple and compound light microscopes	Laboratory Instruments		CO1
2	Camera Lucida (Demonstration)			CO3
3	Simple identification. (All specimens by their generic names and 50% of these by their species name.)			CO4
4	Simple identification. (All specimens by their generic names and 50% of these by their species name.)			CO4
5	Simple identification. (All specimens by their generic names and 50% of these by their species name.)			CO4
6	Simple identification. (All specimens by their generic names and 50% of these by their species name.)			CO4
7	Scientific drawing. Specimen 1 Demonstration			CO7
8	Scientific drawing. Specimen 2 and 3			CO7
9	Scientific drawing. Specimen 4 and 5			CO7
10	Scientific drawing. Specimen 6 and 7			CO7
11	Anatomy – Study of section (Hydra)			CO4, CO7
12	Study of larval forms.			CO4, CO7
13	Study of larval forms.			CO4, CO8
14	Insect identification using key. (Up to Order)			CO4, CO8
15	<b>Anatomy:- Study of sections. (Any two)</b> A. Ascaris B. Earthworm C. Fasciola			CO4, CO8
16	<b>Dissections</b> A. Prawn - Nervous system			CO4, CO8
17	<b>Dissections</b> A. Prawn - Nervous system			CO4, CO8
18	B. Cockroach - Nervous system			CO4, CO8
19	B. Cockroach - Nervous system			CO4, CO8
20	<b>Mounting:-</b> A. Cockroach - Salivary glands			CO4, CO8
21	<b>Mounting:-</b> Mouth parts - Plant bug/House fly/Mosquito/Cockroach/Honey bee (Any Two)			CO4, CO8
22	<b>Mounting:-</b>			CO4, CO8

	C. Prawn appendages.			
23	<b>Mounting:-</b> C. Prawn appendages.			CO4, CO8
24	<b>Mounting:-</b> D. Earthworm setae			CO4, CO8
25	<b>General identification</b> A. Minimum twenty specimens. (Taxonomic classification)			CO4, CO8
26	<b>General identification</b> A. Minimum twenty specimens. (Taxonomic classification)			CO4, CO8
28	<b>General identification</b> Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			CO4, CO8
29	<b>General identification</b> Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			CO4, CO8
30	<b>General identification</b> Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			CO4, CO8
31	<b>General identification</b> Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			CO4, CO8
32	<b>General identification</b> Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			CO4, CO8
33	<b>General identification</b> Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			CO4, CO8
34	<b>General identification</b> Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			CO4, CO8
35	General identification Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			CO4, CO8
36	<b>General identification</b> Taxonomic classification and Ecological/Morphological/Evolutionary/Economic			CO4, CO8

	importance			
	<b>General identification</b> Taxonomic classification and Ecological/Morphological/Evolutionary/Economic importance			CO4, CO8

#### COURSE PLAN

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

	<b>COURSE OUTCOMES</b>	<b>PO/ PSO</b>	<b>CL</b>
<b>CO1</b>	Know about basic mechanisms of various physiological processes related to plant life	PO1, PSO1, PSO2, PSO3, PSO4, PSO5	R, U
<b>CO2</b>	Understand the vital plant physiological functions such as photosynthesis and respiration in plants	PO1, PO4, PO5, PO6, PSO1, PSO2, PSO3, PSO4, PSO5	U
<b>CO3</b>	Know the functions of various plant growth regulators	PO1, PO4, PO6, PSO1, PSO2, PSO3, PSO4, PSO5	U
<b>CO4</b>	Know the water relation of plants and its significance.	PO1, PO4, PO6, PSO1, PSO2, PSO3, PSO4, PSO5	U, A
<b>CO5</b>	Understand and carry out experiments related to plant physiology	PO1, PO2, PO4, PO5, PO6, PSO1, PSO2, PSO3, PSO4, PSO5	R, U, A

CL\* Cognitive Level

CO – PO / PSO mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4	PSO5
CO 1	2						3	1	2	3	2
CO 2	2			2	1	2	3	1	1	3	2
CO 3	2			1		1	3	1	2	1	1
CO 4	2			2			3	1	1	2	2
CO 5	2	2		2	2		2	1	3	3	2

**Mapping Strength**

- 0- No Mapping strength
- 1- Low
- 2- Medium
- 3- High

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	COURSE OUTCOME
<b>MODULE I</b>				
1	1. Water relations of plants: (a) Physical aspects of water absorption –imbibition, diffusion and osmosis.	Lecture/ Interaction/ PPT	Video, e- resource	CO1, CO4 & CO5
2	1. Water relations of plants: Plant cell as an osmotic system.	Lecture/ Interaction/ PPT	Video, e- resource	CO1, CO4 & CO5
3	Diffusion pressure deficit, water potential, plasmolysis			CO1, CO4 & CO5
4	1. Water relations of plants: (b) Mechanism of absorption of water. Active and passive absorption.	Lecture/ Interaction/ PPT		CO1, CO4 & CO5
5	2. Transpiration – types, structure and mechanism of stomtal transpiration (theories).	Lecture/ Interaction/ PPT	e-resource	CO1, CO4 & CO5
6	2. Significance and factors affecting transpiration, antitranspirants, Guttation.	Lecture/ Interaction/ PPT		CO1, CO4 & CO5
7	3. Stress Physiology – Water and salt stress,adaptations	Lecture/ Interaction/ PPT/ Practical		CO1, CO4 & CO5
CIA I				
<b>MODULE III</b>				
8	Dormancy of seeds, factors causing dormancy, photoblastisms	Lecture/ Interaction/	e-resource	CO1 & CO5

		PPT		
9	Techniques to break dormancy.	Lecture/ Interaction/ PPT/ Assignment		CO1 & CO5
10	Germination – mobilization of food reserves, physiology of fruit ripening.	Lecture/ Interaction/ PPT/ Assignment	e-resource	CO1 & CO5
11	Growth and Movements: Sigmoid curve, measurement of growth, regions of growth.	Lecture/ Interaction/ PPT/ Assignment	e-resource	CO1, CO3 & CO5
12	General account of natural growth hormones, synthetic auxins (brief account) effect of ABA.	Lecture/ Interaction/ PPT/ Assignment	e-resource	CO1, CO4 & CO5
13	Senescence and Abscission.	Lecture/ Interaction/ PPT/ Assignment		CO1 & CO5
14	Tropic and nastic movements with reference to geotropism, phototropism.	Lecture/ Interaction/ PPT/ Assignment	e-resource	CO1 & CO5
15	Seismonastic and nyctinastic movements.	Lecture/ Interaction/ PPT/ Assignment	e-resource	CO1 & CO5
16	Photoperiodism	Lecture/ Interaction/ PPT/ Assignment		CO1 & CO5
17	Vernalization	Lecture/ Interaction/ PPT/ Assignment		CO1 & CO5
<b>PRACTICAL</b>				
18	Demonstration experiments	Lab work		CO1, CO4 & CO5
19	Determination of osmotic pressure by plasmolytic method			CO1, CO4 & CO5
20	Demonstration of osmosis using plant membrane			CO1, CO4 & CO5
CIA - II				

**INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines**

	<b>Date of completion</b>	<b>Topic of Assignment &amp; Nature of assignment (Individual– Graded)</b>	<b>Nature of Assignment</b>	<b>Course Outcome</b>
1	18/01/2019	Diverse topics related to the course	Collect and present additional information (videos/pictures/diagrams/explanations) in the respective topics provided	CO1, CO3 & CO4

**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	Pessaraki, 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

<b>PROGRAMME</b>	<b>COMPLEMENTARY CHEMISTRY FOR BACHELOR OF SCIENCE IN ZOOLOGY</b>	<b>SEMESTER</b>	<b>2</b>
<b>COURSE CODE AND TITLE</b>	<b>15U2CPCHE2: BASIC ORGANIC CHEMISTRY</b>	<b>CREDIT</b>	<b>2</b>
<b>HOURS/WEEK</b>	<b>2</b>	<b>HOURS/SEM</b>	<b>36</b>
<b>FACULTY NAME</b>	<b>DR. JUNE CYRIAC AND MS. AMMU ROSIN JOSE</b>		

	<b>COURSE OUTCOMES</b>	<b>PO/ PSO</b>	<b>CL</b>
CO 1	Understand the basics of organic chemistry.	PO 1, PSO 1	U
CO 2	Understand various purification techniques like solvent extraction, distillation and crystallization.	PO 1, PSO 1	U
CO 3	Develop an idea on stereochemistry of organic compounds	PO 1, PSO 1	U
CO 4	Explain the basics of organic reaction mechanism.	PO 1, PSO 1	U
CO 5	Discuss the classification and synthesis of polymers.	PO 6, PSO 2	U
CO 6	Discuss the hazards of synthetic polymers/ plastics.	PO 6, PSO 2	U
CO 7	Understand the concept of biodegradable alternatives for plastics.	PO 6, PSO 2	U

CL\* Cognitive Level

CO – PO / PSO mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PSO 1	PSO 2	PSO 3	PSO 4
CO 1	3						1			
CO 2	3						1			
CO 3	3						1			
CO 4	3						1			
CO 5						3		2		
CO 6						3		2		
CO 7						3		2		

0. No mapping strength, 1 – Low, 2. Medium, 3. High



SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	COURSE OUTCOME
<b>MODULE I : Purification of Organic Compounds : Dr. June Cyriac(3h)</b>				
1	Purification techniques: Recrystallisation, sublimation.	Chalk & Board	Q & A Session	CO 2
2	General principles of distillation, fractional distillation, distillation under reduced pressure	Chalk & Board		CO 2
3	Solvent extraction	Chalk & Board		CO 2
<b>MODULE II: Stereochemistry of Organic Compounds: Ms. Ammu Rosin Jose(11h)</b>				
4	Geometrical isomerism- <i>cis</i> and <i>trans</i> configuration, 2-butene, maleic and fumaric acid,	Chalk & Board		CO 3
5	Determination of configuration of cis-trans isomers, E and Z configuration.	Chalk & Board		CO 3
6	Optical isomerism- D and L configuration. Optical activity,	Chalk & Board	quiz	CO 3
7	Chirality, Stereogenic Centre	Chalk & Board		CO 3
8	Enantiomers and diastereomers	Chalk & Board		CO 3
9	Optical isomerism in lactic acid and tartaric acid	Chalk & Board	quiz	CO 3
10	Racemisation	Chalk & Board		CO 3
11	Conformation- Newman projection, Saw-horse projection	Chalk & Board		CO 3
12	Conformations of Ethane	Chalk & Board		CO 3
13	n - butane	Chalk & Board		CO 3
14	Cyclohexane.	Chalk & Board		CO 3
<b>MODULE III: Mechanisms of Organic Reactions: Dr. June Cyriac (15h)</b>				
15	Hybridization and shape of molecules - $sp^3$ , $sp^2$ and $sp$ , (ethane, ethene, ethyne)	Chalk & Board	quiz	CO 4
16	Types of reagents - electrophiles, nucleophiles.	Chalk & Board		CO 4
17	Types of electron displacement in organic molecules	Chalk & Board		CO 4
18	Explanation of the strength of carboxylic and halogen substituted acids,	Chalk & Board		CO 4
19	Basic strength of primary, secondary and tertiary amines.	Chalk & Board	Q & A Session	CO 4
20	Types of bond fission- homolytic and heterolytic fission.	Chalk & Board		CO 4
21	Reactive intermediates-carbocations-Their formation and stability.	Chalk & Board		CO 4
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	Chalk & Board		CO 4

	of S <sub>N</sub> 1 and S <sub>N</sub> 2 reactions.			
23	Electrophilic substitution in benzene-reaction mechanism. Halogenation, Nitration and Sulphonation	Chalk & Board		CO 4
24	Addition reactions: electrophilic addition. Addition of Bromine and Hydrogen halides to ethane, propene and ethyne-the Markwonikoff's rule, Peroxide effect.	Chalk & Board		CO 4
25	Reactive intermediates- free radicals. Their formation and stability.	Chalk & Board		CO 4
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		CO 4
27	Electrophilic substitution in benzene-reaction mechanism. Halogenation, Nitration and Sulphonation	Chalk & Board		CO 4
28	Addition reactions: electrophilic addition. Addition of Bromine and Hydrogen halides to ethane, propene and ethyne-the Markwonikoff's rule, Peroxide effect.	Chalk & Board		CO 4
29	Elimination reactions: E1 and E2 mechanisms. Saytzeff and Hofmann elimination	Chalk & Board		CO 4
<b>MODULE IV: Natural and Synthetic Polymers: Ms. Ammu Rosin Jose (7h)</b>				
30	Classification of polymers: Natural, synthetic; linear, cross-linked and network; plastics, elastomers, fibres; homopolymers and copolymers.	Chalk & Board	Quiz	CO 5
31	Polymerization reactions, Addition Polymerization,	Chalk & Board		CO 5
32	Condensation polymerization,	Chalk & Board		CO 5
33	Polyethene, polypropylene, PVC, phenol-formaldehyde resins, polyamides (nylons) and polyester.	Chalk & Board		CO 5
34	Natural rubber: structure, vulcanization.	Chalk & Board		CO 5
35	Synthetic rubbers- SBR, nitrile rubber, neoprene.	Chalk & Board		CO 5
36	Biodegradable polymers, environmental hazards caused by polymers, Health problem due to burning plastics.	Chalk & Board		CO 6 and CO 7

#### INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group –	Course Outcome
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		<b>Written/Presentation – Graded or Non-graded etc)</b>	
1	04/12/2018	Conformations	CO 2
2	28/01/2019	SN1 and SN2 reactions	CO 4

#### **GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines**

	<b>Date of completion</b>	<b>Topic of Assignment &amp; Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)</b>	<b>Course Outcome</b>
1	02/02/2019	Biodegradable Polymers	CO 7

#### **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
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