SACRED HEART COLLEGE (AUTONOMOUS)

Department of Chemistry

BACHELOR OF SCIENCE IN CHEMISTRY

Course plan

Academic Year 2018-19

Semester Three

COURSE STRUCTURE

COURSE CODE	TITLE OF THE COURSE	NO. HRS./ WEEK	CREDITS	TOTAL HRS./SEM
15U3CCENG5	REFLECTIONS ON INDIAN POLITY, SECULARISM AND SUSTAINABLE ENVIRONMENT	5	4	90
15U3CCHIN3A	POETRY AND FICTION	5	4	90
15U3CCFRN3A	AN ADVANCED COURSE IN FRENCH	5	4	90
15U3CCSAN3A	TRANSLATION AND COMMUNICATION	5	4	90
15U3CCMAL3A	അരങ്ങും പൊരുളും	5	4	72
15U3CRCHE03	ORGANIC CHEMISTRY - I	3	3	54
15U3CPPHY06	QUANTUM MECHANICS, SPECTROSCOPY, NUCLEAR PHYSICS AND ELECTRONICS	3	3	54
15U3CPMAT03	DIFFERENTIAL EQUATIONS, MATRICES AND TRIGONOMETRY	5	4	90

COURSE PLAN: 2018-19

PROGRAMME	UG COMMON COURSE 3	SEMESTER	3
COURSE CODE AND TITLE	15U3CCENG5: REFLECTIONS ON INDIAN POLITY, SECULARISM AND SUSTAINABLE ENVIRONMENT	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	90
FACULTY NAMES	Aravind R Nair, Sabu Thomas		

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

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I -INDIAN POLITY				
1	The Preamble of the Constitution	Lecture		
2	The Preamble of the Constitution	PPT/Lecture		
3	The Preamble of the Constitution	PPT/Lecture		
4	On the Constitution of India	lecture		
5	Rajendra Prasad : “Let Posterity Judge”	PPT/Lecture	video	
6	Rajendra Prasad : “Let Posterity Judge”	PPT/Lecture	PPT	
7	Rajendra Prasad : “Let Posterity Judge”	Lecture		

8	Rajendra Prasad : “Let Posterity Judge”	Lecture		
9	Rajendra Prasad : “Let Posterity Judge”	PPT/Lecture	video	
10	Rajendra Prasad : “Let Posterity Judge”	PPT/Lecture		
11	Sebastian : “Exciting Views”	Discussion		
12	Sebastian : “Exciting Views”	Discussion		
13	Amulal Hingorani : “Brother Abdul Rahman”	Seminar Presentations	PPT	
14	Amulal Hingorani : “Brother Abdul Rahman”	Seminar Presentations	PPT	
15	Amulal Hingorani : “Brother Abdul Rahman”	Seminar Presentations	PPT	
MODULE II				
16	Vallathol : “My Master”	Discussion		
17	Vallathol : “My Master”	Discussion		
18	Louis Fischer : “Gandhi and Western World”	Seminar Presentations	PPT	
19	Louis Fischer : “Gandhi and Western World”	Seminar Presentations	PPT	
20	Louis Fischer : “Gandhi and Western World”	Seminar Presentations	PPT	
21	Louis Fischer : “Gandhi and Western World”	Seminar Presentations	PPT	
22	Raja Rao : “The Cow of the Barricades”	Lecture		
23	Raja Rao : “The Cow of the Barricades”	Lecture		
24	Raja Rao : “The Cow of the Barricades”	Discussion		

25	M.K.Gandhi : “Round Table Conference Speech”	Lecture	Text	
26	M.K.Gandhi : “Round Table Conference Speech”	PPT/Lecture		
27	M.K.Gandhi : “Round Table Conference Speech”	Lecture		
28	M.K.Gandhi : “Round Table Conference Speech”	Lecture		
29	C E M Joad : “The Gandhian Way”	Lecture		
30	C E M Joad : “The Gandhian Way”	PPT/Lecture	PPT	
31	C E M Joad : “The Gandhian Way”	Lecture		
MODULE III				
32	Mohinder Sing Sarna : “Smaller Gandhis”	Lecture	Text	
33	Mohinder Sing Sarna : “Smaller Gandhis”	Lecture		
34	Mohinder Sing Sarna : “Smaller Gandhis”	PPT/Lecture	PPT	
35	Mohinder Sing Sarna : “Smaller Gandhis”	Lecture	video	
36	Kumar Vikal : “Can you Make Out”	Seminar	PPT	
37	Kumar Vikal : “Can you Make Out”	Seminar	PPT	
38	Shashi Tharoor : “The Idea of India: India’s Mosaic of Multiplicities”	Seminar	PPT	
39	Shashi Tharoor: “The Idea of India: India’s Mosaic of Multiplicities”	Seminar	PPT	
40	Shashi Tharoor : “The Idea of India: India’s Mosaic of Multiplicities”	Seminar	PPT	
41	Roots	PPT/Lecture		
42	Roots	Lecture	video	
43	Roots	Lecture		
44	Roots	Lecture		
45	Roots	Lecture	Quiz	
46	Padma Sachdev : “Smoke”	Discussion	PPT	
47	Padma Sachdev : “Smoke”	Discussion	Essay	

48	Padma Sachdev : “Smoke”	Discussion		
MODULE IV				
49	Seminar	Presentation		
	MODULE III- PRAXIS OF GANDHIAN THOUGHT			
50	Fritjof Capra : “Deep Ecology”	Lecture	Video	
51	Fritjof Capra : “Deep Ecology”	Discussion		
52	Fritjof Capra : “Deep Ecology”	Discussion		
53	A K Ramanujan : “Ecology”	Seminar	PPT	
54	A K Ramanujan : “Ecology”	Seminar	PPT	
55	A K Ramanujan : “Ecology”	Seminar	PPT	
56	Sujatha Bhatt : “The First Meeting”	Lecture, discussion		
57	Sujatha Bhatt : “The First Meeting”	Discussion		
58	Ramachandra Guha : “A Gandhian in Garhwal”	Lecture	Notes	
59	Ramachandra Guha : “A Gandhian in Garhwal”	Discussion		
60	Ramachandra Guha : “A Gandhian in Garhwal”	Lecture		
61	Ramachandra Guha : “A Gandhian in Garhwal”	Lecture		
62	Jack London : “The Law of Life”	Seminar	PPT	
63	Jack London : “The Law of Life”	Seminar	PPT	
64	Jack London : “The Law of Life”	Seminar	PPT	
65	Jack London : “The Law of Life”	Seminar	PPT	
66	Elizabeth Bishop : “The Fish”	Discussion	Text	
67	Elizabeth Bishop : “The Fish”	Discussion	Text	
68	Chief Seattle : “The End of Living and the Beginning of Survival”	Presentation	PPT	
69	Chief Seattle : “The End of Living and the Beginning of Survival”	Presentation	PPT	
70	Chief Seattle : “The End of Living and the	PPT/Lecture	PPT	

	Beginning of Survival"			
71	Deep Ecology	Lecture	video	
72	Deep Ecology	Lecture		
73	Robinson Jeffers : "The Last Conservative"	PPT/Lecture	Notes	
74	Robinson Jeffers : "The Last Conservative"	PPT		
75	Review			
76	Review			
77	Review			
78	Review			
79	Review			
80	Seminar Presentation	PPT		
81	Seminar Presentation	PPT		
82	CIA 2			

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

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

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

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

References

Dr B Keralavarma Ed. Understanding India: An Anthology on Indian Polity, Secularism and Sustainable Environment. Macmillan and Mahatma Gandhi University.

COURSE PLAN

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

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

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

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

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

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

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

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	September	Exercise activity based on Novel (Group Discussion).
2	September	Review a Poem from the textbook 1 and reference, Writing (Group Activity).

References

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

Web resource references:

- epustakalay.com
- www.hindikunj.com

COURSE PLAN

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

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

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	Revision of French Basics	Role play, games	Q & A Session	
2	French Basics	Chalk n talk		
3	French Basics	Chalk and Talk		
4	French Basics	Chalk and Talk		
5	French Basics	Chalk and Talk		
6	French Basics	Chalk and Talk		
7	French Basics	Chalk and Talk		
8	French Basics	Chalk and Talk		
9	Unit 1 – Le passé compose	Chalk and talk		
10	Past tense	lecture		
11	Past tense –narrate an event	Communication skills		
12	Past tense –narrate an event	Oral		
13	Past tense –narrate an event	Oral		
14	Narrate the life of a person	Communication Skills		
15	Narrate a positive/Negative event	Communication Skills		
16.	To learn the entire life	Role play		
17.	One's opinion on learning the entire life	Role Play	Q & A	

			Session	
18.	Interview on learning the entire life	Role Play		
19.	Sharing experiences on learning during old age	Debate/Discussion		
20	Reading Comprehension	Understanding Skills		
21.	Reading Comprehension	Understanding Skills		
22.	Reading Comprehension	Understanding Skills		
23.	Vocabulary building	Games		
24	Communicative skills- emotions	Chalk and talk, oral		
25	Emotions of a teacher	Expression oral		
26.	Emotion of a student in a language class	Discussion		
27	Expressions related to emotions	Vocabulary building games		
28	Language network	Discussions ICT		
29	French culture – EU Rights	Discussions, comparison		
30	Class test of Unit 1			
	MODULE II			
31	Describe one's house	Game	Q & A Session	
32	Describe one's Furniture	Lecture		
33	Grammar-prepositions	Lecture		
34	Making Sentences	Games, Role plays		
35	Describe your friend's house	discussion		
36	Vocabulary Building	Games		
37	Pronoun Y, Locate things	Chalk and talk		
38	Sentence Construction	Games		
39	Type of lodging	Roleplay, listening exercice		
40	Preferences on type of lodging	Roleplay		
41	Comparison, describe one's favourite place	Chalk and Talk, role play		
42	Compare 2 cities/countries	Debate	Q & A Session	
43	Vocabulary Building	Games		
44	Country or country side - debate	Lecture/Discussion		
45	Revision			
46	Revision			
47	Revision			
48	Revision			
49	Revision			
50	Revision			
51	Revision			
	CIA-1			
52	Discussion of CIA			
53	Vocabulary Building	Games		
	MODULE III			
54	Describe a natural product	PPT/Lecture		
55	Describe an Indian Product	PPT/Lecture		
56	Positives and negatives of a product	PPT/Lecture		

57	Advertise a product	PPT		
58	Vocabulary-parts of the body, expressing pain	Music, GAMES		
59	Explain problem which you face	Lecture/Role play		
60	Mail on seeking advice, describing a problem	Role play		
61	Telephonic conversation	Role play		
62	Vocabulary Building	Games		
63	Posting on a problem which you face	Roleplay		
64	Giving advice/grammar-imperative	Chalk and talk, roleplay		
65	webdoctor	Communication skills		
66	Writing a mail and receiving response	Communication Skills		
67	French Culture -Vacation sports	PPT/Discussion		
68	Sports in India	Debate		
69	Advantages of doing sports	Debate/Discussion		
70	Adventure sports in India	Discussion		
71	Sport which you like	Discussion		
CIA II				
MODULE IV				
72	Past tense- imparfait	Chalk and talk	Q & A Session	
73	Sentence construction using imparfait	Role play		
74	Narrate an event using imparfait	Role play		
75	Describing something	Discussion		
76	Vocabulary Building	Games, Music		
77	French movie	Audio visual		
78	French Movie	Audio Visual		
79	Describe a past event-may 68	Chalk n talk/Reading Comprehension		
80	Describe an event in your country	Discussion		
81	Describe an historical event/incident	Discussion		
82	Describe an historical event/incident	Discussion		
83	Talk about an event in the past	Discussion		
84	Describing a place, childhood event	Roleplay		
85	Narrate a positive childhood event	Roleplay		
86	Conversation on a past happening	Role play		
87	Narrate a negative happening	Role play		
88	A historical event which you like	Speaking practice		
89	French Culture- peaceful demonstrations	discussion		
90	Peaceful demo in India(your country)	discussion		

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

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

References

Version Originale, site web

COURSE PLAN

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

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

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	Introducing Translation	Lecture	Q & A Session	
2	History of translation	Discussion		
3	History of Bible translation	Lecture		
4	History of Arabic translation	Lecture		
5	History of Indian translation	Lecture		
6	Qualities of translator	Chalk n talk		
7	Tools of Translation	Lecture		
8	Glossaries, Dictionaries	Chalk n talk		

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

50	Introduction Mrichakatika drama	PPT/Lecture	Q & A Session	
51	Charudatha	PPT/Lecture	Video	
52	Vasanthasena	PPT/Lecture		
53	Vasanthasena's visiting	PPT/Lecture		
54	Rajasyala Samsthanaka	Lecture		
55	Vasanthasena 's meeting with Charudatha	Lecture		
56	Matithreya's conversation with Radanika	PPT/Lecture		
57	Rohasena	PPT/Lecture		
58	Dvitheeyanka	PPT/Lecture		
59	Gambling incident	PPT/Lecture		
60	Catching Gambler	PPT/Lecture		
61	Escaping	PPT/Lecture		
CIA - II				
62	Vasanthasena's talk with her servant	Chalk n talk		
63	thritheeyanka	Lecture		
64	Rebhila's music discussion	Lecture	Group discussion	
65	Sharvilaka –the thief	Lecture		
66	Taking gold from Maithreya	PPT/Lecture		
67	Charudatha talk with Maithreya	PPT/Lecture		
68	Dootha's talking	PPT/Lecture		
69 - 90	Revision			

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

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

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

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

References

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

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

Sakunthalaprakashika, Prof. M.V. Gopalakrishnan

Mricchakatikakathasamgrham, Prof. P.C. Vasudevan Elayat

COURSE PLAN

PROGRAMME	**B.A CHEMISTRY**	SEMESTER	3
COURSE CODE & TITLE	15U3CCMAL3A അരങ്ങും പൊരുളും	CREDITS	4
HOURS/WEEK	5	HOURS/SEM	90
FACULTY NAME	**VISHNU RAJ P, Dr. JUSTINA K AUGUSTINE**		

COURSE OBJECTIVES
കഥകളി , നാടകം ,സിനിമ തുടങ്ങിയ ദൃശ്യകലകളെക്കുറിച്ച് മനസ്സിലാക്കുക.
ഭാഷാപഠനം സാഹിത്യാനുഭവത്തിലൂടെ ആവിഷ്ക്കരിക്കുക
കേരളത്തിലെ കലാരൂപങ്ങളെക്കുറിച്ച് മനസിലാക്കുക .
സാഹിത്യ പരിചയം ഉണ്ടാക്കുക
വ്യാവഹാരിക തലത്തിൽ മാതൃഭാഷാപ്രയോഗിക്കുവാനുള്ള കഴിവ് നേടുക
ഭാഷാപഠനത്തിലൂടെ ആശയവിനിമയശേഷി വർദ്ധിപ്പിക്കുക

Session	Topic	Learning Resources	Teaching Method	Remarks
Module I				
1	ദൃശ്യകലാ സാഹിത്യം സാമാന്യാവലോകനം,	സാഹിത്യ ചരിത്രങ്ങൾ	Lecturing	
2	ദൃശ്യകലാ സാഹിത്യം സാമാന്യാവലോകനം-നാടകം	സാഹിത്യ ചരിത്രങ്ങൾ	Lecturing	
3	ദൃശ്യകലാ സാഹിത്യം സാമാന്യാവലോകനം-നാടകം	സാഹിത്യ ചരിത്രങ്ങൾ	Discussion	
4	മലയാളശാകുന്തളം(നാടകം)	Text	Lecturing	

5	മലയാളശാകുന്തളം(നാടകം) ആമുഖം	Text	Reading	
6	മലയാളശാകുന്തളം(നാടകം)	Text	Group Discussion	
7	അങ്കം ഒന്ന്- ആമുഖം	Text	Lecturing	
8	അങ്കം ഒന്ന്- ആമുഖം	Text	Reading	
9	അങ്കം ഒന്ന്	Text	Group Discussion	
10	അങ്കം രണ്ട് ആമുഖം	Text	Lecturing	
11	അങ്കം രണ്ട് ആമുഖം	Text	Reading	
12	അങ്കം രണ്ട്	Text	Group Discussion	
13	അങ്കം -	Text	Lecturing	
14	അങ്കം രണ്ട്	Text	Reading	
15	അങ്കം മൂന്ന്	Text	Group Discussion	
16	അങ്കം മൂന്ന്	Text	Group Discussion	
17	അങ്കം മൂന്ന്	Text	Group Discussion	
18	അങ്കം നാല്	Text	Lecturing	
19	അങ്കം നാല്	Text	Reading	
20	അങ്കം നാല്	Text	Group Discussion	
21	അങ്കം നാല്	Text	Lecturing	
22	അങ്കം നാല്	Text	Reading	
23	അങ്കം നാല്	Text	Group Discussion	
		Module II		
24	നളചരിതം രണ്ടാംദിവസം (ആട്ടക്കഥ)	Text	Lecturing	
25	നളചരിതം രണ്ടാംദിവസം (ആട്ടക്കഥ)	Text	Group Discussion	
26	രംഗം അഞ്ച്	Text	Lecturing	
27	രംഗം അഞ്ച്	Text	Reading	
28	രംഗം ആറ്	Text	Group Discussion	
29	രംഗം ആറ്	Text	Group Discussion	
30	Internal Assessment 1	Text		
31	Question paper discussion	Text	Group Discussion	
32	രംഗം ആറ്	Text	Lecturing	
33	രംഗം ഏഴ്	Text	Reading	
34	രംഗം ഏഴ്	Text	Group Discussion	
35	രംഗം എട്ട്	Text	Lecturing	
36	രംഗം എട്ട്	Text	Reading	
37	രംഗം ഒൻപത്	Text	Group Discussion	
38	രംഗം ഒൻപത്		Lecturing	
39	രംഗം പത്ത്	Text	Reading	
40	രംഗം പത്ത്	Text	Group Discussion	
41	നളചരിതം - ഒരു അവലോകനം	Text	Lecturing	
42	നളചരിതം - ഒരു അവലോകനം	Text	Reading	
		Module III		

43	മലയാളനാടകചരിത്രം - അവലോകനം	സാഹിത്യ ചരിത്രങ്ങൾ	Lecturing	
44	മലയാളനാടകചരിത്രം - അവലോകനം	സാഹിത്യ ചരിത്രങ്ങൾ	Group Discussion	
45	മലയാള നാടകത്തിലെ - നൂതന പ്രവണതകൾ	സാഹിത്യ ചരിത്രങ്ങൾ	Lecturing	
46	ഒരു മാധ്യവേനൽ പ്രണയരാവ്-ആമുഖം	Text	Group Discussion	
47	ഒരു മാധ്യവേനൽ പ്രണയരാവ്-ആമുഖം	Text	Lecturing	
48	നാടകവിശകലനം	Text	Lecturing	
49	നാടകവിശകലനം	Text	Group Discussion	
50	നാടകവിശകലനം	Text	Group Discussion	
51	നാടകാവതരണം	Text	Performance	
52	നാടകാവതരണം	Text	Performance	
53	നാടകവിശകലനം	Text	Group Discussion	
54	നാടകവിശകലനം	Text	Group Discussion	
55	നാടകാവതരണം	Text	Performance	
56	നാടകാവതരണം	Text	Performance	
57	നാടകാവതരണം	Text	Performance	
58	നാടകവിശകലനം	Text	Group Discussion	
59	നാടകാവതരണം	Text	Performance	
60	നാടകാവതരണം	Text	Performance	
61	നാടകാവതരണം	Text	Performance	
62	നാടകവിശകലനം	Text	Group Discussion	
63	സംവാദം	Text	Group Discussion	
		Module IV		
64	സിനിമയുടെ ചരിത്രം	Text	Group Discussion	
65	വാക്കും ദൃശ്യവും	Text	Presentation	
66	അധ്യായം 1	Text	Presentation	
67	അധ്യായം2	Text	Presentation	
68	ചെമ്മീൻ	Text	Presentation	
69	സിനിമ പ്രദർശനം	Film	Screening	
70	സിനിമ പ്രദർശനം	Film	Screening	
71	സിനിമ വിശകലനം	Text	Group Discussion	
72	സിനിമ വിശകലനം	Text	Group Discussion	
73	വിധേയൻ	Text	Group Discussion	
74	സിനിമ പ്രദർശനം	Film	Screening	
75	സിനിമ പ്രദർശനം	Film	Screening	
76	സിനിമ വിശകലനം	Text	Group Discussion	
77	പഥേർ പാഞ്ചലി	Text	Group Discussion	
78	പഥേർ പാഞ്ചലി	Text	Group Discussion	
79	സിനിമ പ്രദർശനം	Film	Screening	
80	സിനിമ പ്രദർശനം	Film	Screening	
81	സിനിമ പ്രദർശനം	Text	Presentation	
82	സിനിമ വിശകലനം	Text	Group Discussion	
83	സിനിമ വിശകലനം	Text	Group Discussion	
84	സിനിമസംവാദം	Text	Group Discussion	

87	സിനിമസംവാദം	Text	Group Discussion	
85	സെമിനാർ	Text	Presentation	
86	സെമിനാർ	Text	Presentation	
87	സെമിനാർ	Text	Presentation	
88	സെമിനാർ	Text	Presentation	
89	Revision	Text	Presentation	
90	Evaluvation of the course	Interaction	Group Discussion	

ASSIGNMENTS

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

\

SEMINAR

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

Referance :

1.നാടകദർശനം -ജി .ശങ്കരപ്പിള്ള

2.സിനിമയുടെ ലോകം - അടൂർ ഗോപാലകൃഷ്ണൻ

COURSE PLAN

PROGRAMME	BSc Chemistry	SEMESTER	3
COURSE CODE AND TITLE	**15U3CRCHE03: Organic Chemistry - I**	CREDIT	3
HOURS/WEEK	3	HOURS/SEM	54
FACULTY NAME	Dr. V.S Sebastian, Mr. Senju Devassykutty, Dr. Ramakrishnan S		

Course Objective
To discuss the classification and nomenclature of organic compounds
To categorize different organic reactions and discuss the mechanisms involved
To apply the principles of aromaticity and stereochemistry in organic compounds
To describe various emerging areas of organic chemistry and its applications

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
	MODULE I - CLASSIFICATION AND NOMENCLATURE OF ORGANIC COMPOUNDS (4 h)			
1	Introduction to classification of organic compounds	PPT	video	
2	Rules of IUPAC system of nomenclature	PPT/Lecture		
3	Alkanes, alkenes, alkynes, cycloalkanes, bicycloalkanes, alkyl halides, alcohols and phenols.	PPT/Lecture		
4	Aldehydes, ketones, carboxylic acids and its derivatives, amines, nitro compounds. (*Both aliphatic and aromatic*)	PPT/Lecture	e-resource	
	MODULE II -ORGANIC REACTION MECHANISMS (18 h)			
5	Introduction to Organic Reaction Mechanisms	PPT/Lecture		
6	Drawing electron movements with arrows: • Curved arrow notation. Half headed and double headed arrows.	PPT/Lecture		
7	*Types of reagents*:Electrophiles and Nucleophiles *Types and sub-types organic reactions*: Substitution, Addition reactions, Elimination and Rearrangement	Lecture		
8	Reactive intermediates with examples – carbocations, carbanions	Lecture		
9	Reactive intermediates with examples - carbenes, nitrenes and free radicals.	Lecture		
10	Electron displacement effects - Inductive, electrometric, mesomeric, resonance	Lecture		

11	Hyperconjugation and steric effects- steric inhibition of resonance.	PPT/Lecture		
12	Aliphatic nucleophilic substitutions, mechanism of S_N1 and S_N2 reactions.	PPT/Lecture		
13	Effects of structure, substrate, solvent, nucleophile and leaving groups -Stereochemistry- Walden inversion	PPT/Lecture		
14	*Elimination Reactions*:-Hoffmann and Saytzeff rules	PPT/Lecture		
15	*Cis*- and *trans*- eliminations	PPT/Lecture		
16	Mechanisms of E1 and E2 reactions Elimination *versus* substitution.	Lecture		
17	Addition reactions:Mechanisms of addition of Bromine Inductomeric effect	Lecture		
18	Mechanisms of addition of hydrogen halides to double bonds.	Lecture		
19	Markonikoff's rule and peroxide effect.	Lecture		
20	Polymerisation reactions: Types of polymerization - free radical, cationic and anionic –polymerisations –including mechanism.	Lecture		
21	Pericylic Reactions: Classification- electrocyclic, sigmatropic, cycloaddition reactions-Examples	Lecture		
22	Diels- Alder reaction- Stereochemical aspects- Effect of substituents.	Lecture		
Module III STEREOCHEMISTRY OF ORGANIC COMPOUNDS (16 h)				
23	Stereoisomerism - definition - classification - optical and geometrical isomerism	PPT/Lecture		
24	Projection formulae - Fischer, flying wedge, Sawhorse and Newman projection formulae - notation of optical isomers -D-L notation	PPT/Lecture		
25	Cahn-Ingold-Prelog rules - R-S notations for optical isomers with one and two asymmetric carbon atoms - erythro and threo representations.	PPT/Lecture		
26	Optical isomerism - optical activity - optical and specific rotations - conditions for optical activity	PPT/Lecture		
27	Asymmetric centre: Chirality - achiral molecules - meaning of (+) and (-)	Lecture		
28	Elements of symmetry -. Prochirality	Lecture		
29	Racemization - methods of racemization (by substitution and tautomerism)	Lecture		
30	Resolution - methods of resolution -mechanical, seeding, biochemical and conversion to diastereoisomers	Lecture		
31	Asymmetric synthesis (partial and absolute synthesis).	Lecture		
32	Optical activity in compounds does not containing asymmetric carbon atoms-Biphenyls and allenes.	PPT/Lecture		
33	Geometrical isomerism - *cis*-trans *syn*-anti and E-Z notations - geometrical isomerism in maleic and fumaric acids and unsymmetrical ketoximes	PPT/Lecture		
34	Methods of distinguishing geometrical isomers using melting point, dipole moment, dehydration and cyclisation.	PPT/Lecture		
35	Conformational analysis - introduction of terms - conformers, configuration, dihedral	PPT/Lecture		

	angle, torsional strain			
36	Conformational analysis of ethane and *n*-butane using energy profile diagrams	PPT/Lecture		CO 3
37	Conformers of cyclohexane (chair, boat and skew boat forms) - axial and equatorial- bonds-ring flipping showing axial equatorial interconversion,	PPT/Lecture		CO 3
38	. Conformation of methyl cyclohexane.	Lecture	Quiz	CO 3
	CIA			
MODULE IV AROMATICITY (14 h)				
39	Concept of resonance: • Resonance energy in benzene. • Heat of hydrogenation and heat of combustion of Benzene C-C bond lengths and orbital picture of Benzene	PPT/Lecture		
40	Structure of naphthalene and anthracene (*Molecular Orbital picture and resonance*)	PPT/Lecture		
41	Concept of aromaticity – aromaticity (definition), *Huckel's rule*: Aapplication to Benzenoids : Benzene, Naphthalene, Anthracene, Phenanthrene.	PPT/Lecture		
42	Non–Benzenoid compounds – cyclopropenyl cation, cyclopentadienyl anion and tropylium cation.	Lecture		
43	General mechanism of electrophilic substitution-mechanism of halogenation, nitration,	PPT/Lecture		
44	Mechanism of Friedal Craft's alkylation and acylation, sulphonation	PPT/Lecture		
45	Orientation of aromatic substitution – *ortho, para* and *meta* directing groups.	PPT/Lecture		
46	Ring activating and deactivating groups.	PPT/Lecture		
47	Electronic interpretation of various groups like -NO_2 and –OH	PPT/Lecture		
48	Orientation (i). Amino, methoxy and methyl groups (ii). Carboxy, nitro, nitrile, carbonyl and sulfonic acid groups. (iii). Halogens.	PPT/Lecture		
49	Reactivity of naphthalene towards electrophilic substitution. Nitration and sulphonation	PPT/Lecture		
50	Aromatic Nucleophilic substitutions - bimolecular displacement mechanism	PPT/Lecture		
51	Elimination –Addition mechanism : *Benzyne intermediate*	PPT/Lecture		
52	Reactivity and orientation in Aromatic Nucleophilic substitutions.	PPT/Lecture	Video	
	CIA			
MODULE V SUPRAMOLECULAR CHEMISTRY (2h)				
53	Introduction to Supramolecular chemistry	Lecture		
54	Structure of supramolecular compunds	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	16/10/2018	Stereochemistry : Advanced Problems
2	28/11/2018	Reaction mechanism : Advanced Problems

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	5/11/2018	Previous IIT JAM questions (Group activity)

References

1. R. T. Morrison and R.N Boyd, 'Organic Chemistry', 6th Edition - Prentice Hall of India.
2. L. Finar, 'Organic Chemistry '- Vol.- 6th Edition I, Pearson Education (chapters-20,21)
3. M. K. Jain and S.C. Sharma 'Modern Organic Chemistry', 3rd Edn, Vishal Publishing Co.
4. K. S. Tewari and N. K. Vishnoi 'Organic Chemistry', 3rd Edition, Vikas Publishing House,
5. Peter Sykes, A Guide book to Mechanism in Organic Chemistry :, 6thEdition, Pearson Education.

Web resource references:

https://www.colby.edu/chemistry/OChem/STEREOCHEM/index.html

PROGRAMME	Complementary Physics for BSc Chemistry	SEMESTER	3
COURSE CODE AND TITLE	15U3CPPHY06 Quantum mechanics, Spectroscopy, Nuclear Physics and Electronics	CREDIT	3
Theory HOURS/WEEK	3	HOURS/SEM	54
FACULTY NAME	Dr. Pius Augustine & Prof. Navya S. L.		

COURSE OBJECTIVES
To understand the quantum world of atoms and appreciate the latest developments in Physics and Chemistry. (Problem solving sills)
To apply the basic understanding of nuclear physics to extended applications like nuclear reactors, atom bomb, carbon dating etc. (Problem solving skills)
To apply basic semiconductor physics and extend it to electronic components and devices.

SESSION	**TOPIC**	**LEARNING RESOURCES**	**REMARKS**
MODULE I Elementary Quantum theory and Spectroscopy (Prof. Navya S. L.)			
1.	Introduction- black body radiation	Lecture/PPT	
2.	Planck's quantum hypothesis	Lecture/PPT	
3.		Lecture/PPT	
4.	Photoelectric effect	Lecture/PPT	
5.	Einstein's explanation- de Broglie hypothesis- matter wave	Lecture/PPT	
6.	Photoelectric effect	Lecture/PPT	
7.	Einstein's explanation- de Broglie hypothesis- matter wave	Lecture/PPT	
8.	Davisson-Germer experiment- uncertainty principle (derivation not expected)	Lecture/PPT	
9.	Wave function- conditions-normalization	Lecture/PPT	
10.	Schroedinger equation stationary states	Lecture/PPT	
11.	Schroedinger equation stationary states	Lecture/PPT	
12.	Normalizable wavefunctions- box normalization	Lecture/PPT	
13.	Atom models- Thomson's model	Lecture/PPT	
14.	Rutherford's nuclear atom model-Bohr atom model	Lecture/PPT	
15.	Rutherford's nuclear atom model-Bohr atom model Rutherford's nuclear atom model-Bohr atom model	Lecture/PPT	

16.	Rutherford's nuclear atom model-Bohr atom model Rutherford's nuclear atom model-Bohr atom model	Lecture/PPT	
17.	Rutherford's nuclear atom model-Bohr atom model Rutherford's nuclear atom model-Bohr atom model	Lecture/PPT	
18.	Vector atom model	Lecture/PPT	
19.	Vector atom model	Lecture/PPT	
20.	Vector atom model	Lecture/PPT	
21	Fine structure of Hydrogen atom	Lecture/PPT	
22	Rotational and vibrational spectra of rigid diatomic molecules-	Lecture/PPT	
23	Rotational and vibrational spectra of rigid diatomic molecules-	Lecture/PPT	
		Lecture/PPT	
24	Raman effect-quantum theory	Lecture/PPT	
MODULE II Atomic Nucleus and Radio Activity Nuclear Fission and Fusion Dr. Pius Augustine			
25.	Nuclear constituents- different nuclear types	Lecture/PPT	
26.	Properties of nuclei- size Mass charge- density-	Lecture/PPT	
27.	Binding energy- packing fraction -nuclear stability -spin -	Lecture/PPT	
28.	Magnetic dipole moment -electric quadrupole moment -	Lecture/PPT	
29.	Properties of nuclear forces	Lecture/PPT	
30.	Properties of nuclear forces	Lecture/PPT	
31.	Radioactivity- radiations -law of radioactive decay - half life- mean liferadioactivity	Lecture/PPT	
32.	Units -radio active series-radio active dating	Lecture/PPT	
33.	Carbon dating	Lecture/PPT	
34.	Artificialradioactivity	Lecture/PPT	
35.	Nuclear fission- energy release in fission reactions-	Lecture/PPT	
36.	Liquid drop model of fissionchain reaction	Lecture/PPT	
37.	Nuclear reactor	Lecture/PPT	
38.	Power and breeder reactor	Lecture/PPT	
	Atom bomb	Lecture/PPT	
39	Nuclear fusion	Lecture/PPT	
	Power and breeder reactor	Lecture/PPT	
40	Energy production in stars- thermo nuclear reactions in sunp-p chain - C-N cycle	Lecture/PPT	
41	Energy production in stars- thermo nuclear reactions in sunp-p chain - C-N cycle	Lecture/PPT	
MODULE III Basic Electronics Handled by Dr. Jimmy Sebastian			

42	Semiconductors	Lecture/PPT	
43	Doping- band structure	Lecture/PPT	
44	PN junction- biasing	Lecture/PPT	
45	Diode equation (derivation not expected)	Lecture/PPT	
46	Diode characteristics	Lecture/PPT	
47	Zener diode- voltage regulation	Lecture/PPT	
48	Diode circuits- rectification	Lecture/PPT	
49	Half wave, full wave and bridge rectifiers	Lecture/PPT	
50	Transistors	Lecture/PPT	
51	Different configurations	Lecture/PPT	
52	Characteristics	Lecture/PPT	
53	Biasing transistor amplifiers	Lecture/PPT	
54	Feedback in amplifiers	Lecture/PPT	

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	Seminar on Nuclear Physics and Radioactivity Topics can be selected by students Before first internal exam	Presentation in groups and submission of report and ppt. Video recording
2	Seminar/assignment on Electronics Revolution Before Second Internal Exam	Presentation in groups and submission of report and ppt.

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

Books for references

1. Introduction to Modern Physics- H.S. Mani and G.K. Mehta (Affiliated East West press Pvt. Ltd)
2. Concepts of Modern Physics- A. Beiser (Tata McGraw-Hill, 5th Edn.)
3. Modern Physics- R. Murugeshan (S. Chand and Co.)
4. Quantum Physics- S. Gasiorowicz (John Wiley & Sons)
5. Basic Electronics- B. L. Theraja (S. Chand and Co.)

6. Elements of electronics- M.K. Bagde, S.P. Sngh and K. Singh (S. Chand and Co.)
7. Modern Physics- G.Aruldas and P.Rajagopal (PHI Pub)**)**

COURSE PLAN

PROGRAMME	COMPLEMENTARY MATHEMATICS FOR BACHELOR OF SCIENCE CHEMISTRY	SEMESTER	3
COURSE CODE AND TITLE	15U3CPMAT03- Differential Equations, Matrices and Trigonometry	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	90
FACULTY NAME	DIDIMOS K. V.		

Course Objectives
To understand the methods of solving important types of first order ordinary differential equations.
To understand the origin of first order p.d.e's and their solution.
To understand different types of matrices and rank of a matrix
To apply the concept of matrices in solving system of linear equations
To find the Eigen values and Eigen vectors of a given matrix
To understand the applications of Cayley Hamilton theorem
To understand trigonometric functions, their expansions and summation of infinite series using the C+iS method

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	Separable Equations	Lecture/Problem solving	Q & A Session	
2	Problem	Lecture/Problem solving		
3	Reducible to separable equations	Lecture/Problem solving		
4	Problem	Lecture/Problem solving		
5	Homogeneous Equations	Lecture/Problem solving		
6	Problem	Lecture/Problem solving		
7	Problem	Lecture/Problem solving		
8	Homogeneous Equations	Lecture/Problem solving		
9	Homogeneous Equations	Lecture/Problem solving		
10	Problem	Lecture/Problem solving		
11	Problem	Lecture/Problem solving		
12	Linear Differential equations	Lecture/Problem solving		
13	Bernoulli's equation	Lecture/Problem solving		
14	Problem	Lecture/Problem solving		
15	Exact Differential equations	Lecture/Problem solving		
16	integrating factors	Lecture/Problem solving		
17	integrating factors	Lecture/Problem solving		
18	Problem	Problem solving		
MODULE II				
19	Formation of partial differential equations	Lecture/Problem solving	Q & A Session	
20	Formation of partial differential equations	Lecture/Problem solving		
21	problems	Lecture/Problem solving		
22	Formation of partial differential equations	Lecture/Problem solving		
23	problems	Lecture/Problem solving		
24	Formation of partial differential equations	Lecture/Problem solving		
25	problems	Lecture/Problem solving		
26	Solution by Direct integration	Lecture/Problem solving		
27	problems	Lecture/Problem solving		
28	problems	Lecture/Problem solving		
29	Lagrange's method	Lecture/Problem solving		
30	problems	Lecture/Problem solving		

31	problems	Lecture/Problem solving		
32	problems	Lecture/Problem solving		
33	Lagrange's method	Lecture/Problem solving		
34	problems	Lecture/Problem solving		
35	problems	Lecture/Problem solving		
36	problems	Lecture/Problem solving		
37	Lagrange's method	Lecture/Problem solving		
38	problems	Lecture/Problem solving		
39	problems	Lecture/Problem solving		
MODULE III				
40	Transpose of Matrices	Lecture	Q & A Session	
41	Problems	Lecture/Problem solving		
42	Problems	Lecture/Problem solving		
43	Problems	Lecture/Problem solving		
44	Symmetric and skew symmetric matrices	Lecture/Problem solving		
45	problems	Lecture/Problem solving		
CIA-I				
46	Singular and non-singular matrices.	Lecture/Problem solving	Q & A Session	
47	problems	Lecture/Problem solving		
48	problems	Lecture/Problem solving		
49	Elementary transformations	Lecture/Problem solving		
50	Inverse of a matrix	Lecture/Problem solving		
51	problems	Lecture/Problem solving		
52	Rank of a matrix	Lecture/Problem solving		
53	problems	Lecture/Problem solving		
54	Solution of system of linear equations	Lecture/Problem solving		
55	problems	Lecture/Problem solving		
56	problems	Lecture/Problem solving		
57	Characteristic equation	Lecture/Problem solving		
58	problems	Lecture/Problem solving		
59	problems	Lecture/Problem solving		
60	problems	Lecture/Problem solving		
61	Eigen values	Lecture/Problem solving		
62	problems	Lecture/Problem solving		
63	problems	Lecture/Problem solving		
64	Cayley Hamilton theorem	Lecture/Problem solving		
65	problems	Lecture/Problem solving		
66	problems	Lecture/Problem solving		
67	Cayley Hamilton theorem	Lecture/Problem solving		
68	problems	Lecture/Problem solving		

Module-IV				
69	Expansions of sin nx	Lecture/Problem solving	Q & A Session	
70	Expansions of sin	Lecture/Problem solving		
71	problems	Lecture/Problem solving		
72	cos nx	Lecture/Problem solving		
73	problems	Lecture/Problem solving		
74	problems	Lecture/Problem solving		
75	problems	Lecture/Problem solving		
76	Tan nx	Lecture/Problem solving		
77	problems	Lecture/Problem solving		
78	problems	Lecture/Problem solving		
79	$sin^n\theta$, $cos^n\ \theta$	Lecture/Problem solving		
80	problems	Lecture/Problem solving		
81	problems	Lecture/Problem solving		
82	problems	Lecture/Problem solving		
CIA - II				
83	$sin^n\theta cos^n\ \theta$	Lecture/Problem solving		
84	problems	Lecture/Problem solving		
85	problems	Lecture/Problem solving		
86	Circular and hyperbolic functions	Problem solving		
87	Inverse circular and hyperbolic function.	Lecture/Problem solving		
88	Separation into real and imaginary parts.	Lecture/Problem solving		
89	Summation of infinite series based on C + iS method	Lecture/Problem solving		
90	problems	Lecture/Problem solving		

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	12/8/2018	Linear Differential equations
2	1/10/2018	Cayley Hamilton theorem

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	31/7/2018	Expansions of sin nx
2	13/9/2018	Circular and hyperbolic functions

Textbook:

1) Ordinary and Partial Differential Equations with Laplace transforms, Fourier series and applications, by V Sundarapandian., McGraw Hill Publications

2) A text book of Engineering Mathematics,by N.P Bali, Manish Goyal , Lakshmi publications, Eight edition

3) Plane Trigonometry by S. L Loney

References

1) Matrices, Schaum's Outline Series, Tata McGraw Hill Publications

2) Differential Equations, by Shepley L Ross, Wiley.

3) Differential Equations, with applications and Historical notes, by G.F. Simmons and S.G.Krantz, Tata McGraw Hill Publications

4) Elements of Partial Differential Equations, by Ian Sneddon, Tata McGraw Hill Publications