SACRED HEART COLLEGE (AUTONOMOUS)

Department of Chemistry

BACHELOR OF SCIENCE IN CHEMISTRY

Course plan

Academic Year 2018-19

Semester One

	Programme Outcome
PO 1	**Critical Thinking:** 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	**Effective Communication:** 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	**Effective Citizenship:** 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	**Environment and Sustainability:** Understand the issues of environmental contexts and sustainable development.
PO5	**Ethics**: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.
PO 6	**Global Perspective:** Understand the economic, social and ecological connections that link the world's nations and people.

PROGRAM SPECIFIC OUTCOMES	
PSO 1	Understand the basic concepts of chemistry and solve problems in inorganic, organic, theoretical and physical chemistry.
PSO 2	Understand the applicability of chemistry in solving problems related to industry, agriculture, medicine, environment and day to day life.
PSO 3	Experiment, analyse and draw conclusions from qualitative, quantitative and synthetic laboratory exercises in chemistry.
PSO 4	Design research projects in inorganic, organic, theoretical and physical chemistry that help develop research aptitude.

COURSE STRUCTURE

Course Code	Title Of The Course	No. Hrs./ Week	Credits	Total Hrs./Sem
15U1CCENG1	Communication Skills in English	5	4	90
15U1CCENG2	Reading Literature in English	4	3	72
15U1CCHIN1A	Prose and Drama	4	4	72
15U1CCFRN1A	French Language and Communication Skills I	4	4	72
15U1CCSAN1A	Drama, Poetry and Alankara	4	4	72
15U1CCMAL1A	Kadha, Novel	4	4	72
15U1CRCHE1	Theoretical and Inorganic Chemistry I	2	2	36
15U1CPPHY1	Properties of Matter, Mechanics and Particle Physics	2	2	36
15U1CPMAT1	Differential Calculus and Trignometry	4	3	60

COURSE PLAN 2018-19 (Chemistry)

PROGRAMME	UG COMMON COURSE 1	SEMESTER	1
COURSE CODE AND TITLE	15U1CCENG 1: Communication Skills in English	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	90
FACULTY NAME	**Bijo N Mathew**		

	COURSE OUTCOMES	**PSO**	**PO**
CO 1	Understand the mechanics of English language and comprehend the meaning of simple narrations, announcements and instructions.	1,4	1, 2
CO 2	Make inferences about the implications of statements from stress and tone recognize the various registers of speech.	1, 4	1, 2
CO 3	Listen to formal presentations and prepare lecture notes in the appropriate format.	1,3,4	1, 2, 3
CO 4	Use English for a variety of speaking contexts including conversations, presentations, speeches, discussions and negotiations.	1,3,4	1,2,3,4,5
CO 5	Critically evaluate presentations, narrations, speeches and analyse and evaluate their content and respond to them appropriately.	1,3,4	1,2,5
CO 6	Creatively respond to one's surroundings in the form of drama, poetry, narrations, and songs, and perform them before an audience.	1,3,4	1,2,3,4,5,6

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	3	2	0	0	0	0	3	0	0	2
CO 2	3	2	0	0	0	0	3	0	0	2
CO 3	1	3	1	0	0	0	3	0	2	1
CO 4	1	3	1	2	1	0	3	0	2	2
CO 5	1	3	0	0	2	0	3	0	2	2
CO 6	1	3	1	1	1	1	3	0	2	2

Indicators: 0- No Mapping strength, 1. Low, 2. Medium, 3. High

COURSE PLAN

SESSION	TOPIC	Learning Resources	Activity	Course Outcome
MODULE I				
MODULE – I : Speech Sounds				
1	Introduction to Communication Skills	Course book	Lecture	CO 1
2	Phonemic symbols	Audio	Q & A	CO 1
3	Vowels	Audio	Q & A	CO 1
4	Consonants	Audio	Q & A	CO 1
5	Vowels	Audio	Q & A	CO 1
6	Consonants	Audio	Q & A	CO 1
7	Syllables	Course book	Exercises	CO 1
8	Syllables	Audio	Q & A	CO 1
9	Syllables	Audio	Q & A	CO 1
10	Word stress	Audio	Q & A	CO 1
11	Word stress	Course book	Exercises	CO 1,2
12	Word stress	Course book	Exercises	CO 1,2

13	Word stress	Audio	Q & A	CO 1
14	Stress in polysyllabic words	Audio	Q & A	CO 1
15	Stress in polysyllabic words	Course book	Exercises	CO 1, 2
16	Stress in polysyllabic words	Course book	Exercises	CO 1, 2
17	Stress in words used as different parts of speech	Audio	Q & A	CO 1
18	Stress in words used as different parts of speech	Audio	Q & A	CO 1
19	Stress in words used as different parts of speech	Lecture		CO 1, 2
MODULE II : Listening				
20	Sentence stress	Course Book	Lecture	CO 2
21	Sentence stress	Audio	Q& A	CO 2
22	Sentence stress	Audio	Q& A	CO 2
23	Sentence stress	Lecture	Exercises	CO 2
24	Weak forms and strong forms	Audio	Q & A	CO 2
25	Weak forms and strong forms	Audio & Lecture	Exercises	CO 2
26	Weak forms and strong forms	Lecture	Exercises	CO 2
27	Intonation	Lecture	Exercises	CO 2
28	Intonation	Audio	Q & A	CO2
Internal Assessment Test 1				
30	Awareness of different accents	Video	Q & A	CO 2
31	Awareness of different accents	Audio/Video	Q & A	
32	Awareness of different accents	Audio/Video	Q & A	CO 2
MODULE- III: Speaking				
33	American English	Course Book	Lecture	CO 2,3
34	American English	Audio	Discussion	CO 2,3
35	American English	Audio	Discussion	CO 2,3
36	American English	Audio	Exercises	CO 2,3

37	British and Indian English	Course Book	Discussion	CO 2,3
38	British and Indian English	Audio	Discussion	CO 2,3
39	British and Indian English	Audio	Discussion	CO 2,3
40	British and Indian English	Audio	Discussion	CO 2,3
Unit II: Academic Listening & Note-taking				
41	Influence of the mother tongue	Course Book	Lecture	CO 3
42	Influence of the mother tongue	Course book	Exercises	CO 3
43	Influence of the mother tongue	Audio	Exercises	CO 3
44	Influence of the mother tongue	Audio	Exercises	CO 2,3
45	Active listening	Audio	Exercises	CO 2,3
46	Active listening	Audio	Exercises	CO 2,3
47	Barriers to listening	Audio	Exercises	CO 2,3
48	Barriers to listening	Audio	Exercises	CO 2,3
MODULE III				
Unit 1 – Art of Small Talk				
49	Seminar Presentation	Course book	Lecture	CO 1,2,4
50	Listening and note taking	Course book	Exercises	CO 1,2,4
51	Listening and note taking	Audio	Q & A	CO 1,2,4
52	Listening and note taking	Course book	Q & A	CO 4
53	Listening and note taking	Course book	Exercises	CO 4
54	Listening to announcements	Audio	Exercises	CO 4
55	Listening to announcements	Course book	Exercises	CO 4
56	Listening to announcements	Course book	Exercises	CO 1,24
57	Listening to announcements	Course book	Exercises	CO 4
Unit II: Transactional Conversation				
59	Listening to news on the radio and television	Course book	Exercises	CO 1,2,4

60	Listening to news on the radio and television	Course book	Exercises	CO 1,2,4
61	Listening to news on the radio and television	Course book	Exercises	CO 1,2,4
62	Word stress and rhythm	Course book	Exercises	CO 1,2,4
63	Word stress and rhythm	Course book	Exercises	CO 1,2,4
64	Pauses and sense groups	Course book	Exercises	CO 1,2,4
65	Pauses and sense groups	Course book	Exercises	CO 1,2,4
66	Pauses and sense groups	Course book	Exercises	CO 1,2,4
67	Falling and rising tones	Course book	Exercises	CO 1,2,4
68	Falling and rising tones	Course book	Exercises	CO 1,2,4
69	Falling and rising tones	Course book	Exercises	CO 1,2,4
Unit III: Telephone Conversation				
70	Fluency and pace of delivery	Course book	Lecture	CO 4
71	Internal Examination	Course book	Exercises	CO 4
72	Art of small talk	Course book	Exercises	CO 1,2,4
Internal Assessment 2				
MODULE IV				
Unit 1: Presentation				
73	Participating in conversations	Course book	Lecture	CO 4 & 6
74	Participating in conversations	Discussion	Exercises	CO 4 & 6
75	Participating in conversations	Course book	Lecture	CO 4 & 6
76	Making a short formal speech	Course book	Discussion	CO 4 & 6
77	Participating in conversations	Course book	Discussion	CO 4 & 6
78	Describing people	Course book	Discussion	CO 4 & 6
79	Describing people	Course book	Discussion	CO 4 & 6
80	Place, events and things	Course book	Lecture	CO 4 & 6
81	Group discussion skills and telephone skills	Course book	Discussion	CO 4 & 6

82	Reading: theory and Practice –-——--–	Course book	Discussion	CO 4 & 6
83	Scanning - Surveying a textbook using an index	Course book	Discussion	CO 4 & 6
84	Reading with a purpose – making predictions	Course book	Discussion	CO 4 & 6
MODULE – IV: Reading				
85	Understanding text structure	Course book	Lecture	CO 4 & 6
86	Locating main points – Making inferences	Course book	performanc e	CO 4 & 6
87	Reading graphics	Course book	performanc e	CO 4 & 6
88	Reading critically	Course book	performanc e	CO 4 & 6
89	Reading for research	Course book	performanc e	CO 4 & 6
90	Reading for research			

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc.)	Couse Outcome
1	4/8/2018	Presentations	CO 2
2	28/8/2018	Role plays	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)	Couse Outcome
1	12/9/2018	Group Discussions	CO 1,2,4,5
2	20/9/2018	Performances	CO 1,2,,4,5

References

V.Sasikumar, P Kiranmai Dutt and Geetha Rajeevan, . Communication Skills in English. Cambridge University Press and Mahatma Gandhi University**.**

COURSE PLAN

PROGRAMME	**B.Sc. Chemistry**	SEMESTER	1
COURSE CODE AND TITLE	15U1CCENG02: Reading Literature in English	CREDIT	3
=HOURS/WEEK	4	HOURS/SEM	72
FACULTY NAME	Sabu Thomas		

	COURSE OUTCOMES	**PO/ PSO**	**CL**
CO1:	Explain the nuances of English Language through literature.	PO2, PSO3	A
CO2:	Compare the Varied parameters of English language.	PO1, PO2, PSO3	An
CO3:	Discover comprehensive ability.	PO1, PSO3	U
CO4:	Connect the efficiency of the students with realities of life.	PO1	A
CO5:	Evaluate the beauty of literary expression.	PO2	E

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
CO 1		3							1	
CO 2	3	2							1	
CO 3	3								1	
CO 4	2									
CO 5		2								

Mapping Strength

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

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	COURSE OUTCOME
MODULE I				
ESSAYS				
1	Introducing the text book	Text	PPT	CO3
2	Bores: E V Lucas	Text		CO3
3	Bores: E V Lucas	Text		CO2
4	Bores: E V Lucas	Text		CO1
5	A Glory has Departed- Jawaharlal Nehru	Text	Group Discussion	CO2
6	A Glory has Departed- Jawaharlal Nehru	Text		CO4
7	A Glory has Departed- Jawaharlal Nehru	Text		CO3
8	A Glory has Departed- Jawaharlal Nehru	Text		CO1
9	Tryst with Destiny- Amartya Sen	Text		CO3
10	Tryst with Destiny- Amartya Sen	Text		CO5
11	Tryst with Destiny- Amartya Sen	Text		CO3
12	Tryst with Destiny- Amartya Sen	Text		CO1
13	How to Escape from Intellectual Rubbish-Bertrand Russel	Text	Group Discussion	CO3
14	How to Escape from Intellectual Rubbish-Bertrand Russel	Text		CO5
15	How to Escape from Intellectual	Text		CO3

	Rubbish-Bertrand Russel			
16	How to Escape from Intellectual Rubbish-Bertrand Russel	Text		CO4
17	Discussion			CO6
18	Discussion		Quiz	CO3
MODULE II- Poetry				
19	Sonnet XXX-William Shakespeare	Text	Lecture/PPT	CO3
20	Sonnet XXX-William Shakespeare	Text		CO2
21	Sonnet XXX-William Shakespeare	Text	Poetry Recitation	CO1
22	Ode to a Nightingale-John Keats	Text	Poetry Recitation	CO4
23	Ode to a Nightingale-John Keats	Text		CO5
24	Mending Wall- Robert Frost		Interaction	CO6
First Internal Examination				
25	Mending Wall- Robert Frost	Text	Poetry Recitation	CO3
26	Mending Wall- Robert Frost	Text	Role Play	CO1
27	The Bicycle- David Malouf	Text	Role play	CO4
28	The Bicycle- David Malouf	Text		CO 5
29	The Bicycle- David Malouf	Text		CO5
30	The Refuge	Text		CO 4
Unit 3: The Boy Comes Home				
30	Poor Girl- Maya Angelou	Text	Lecture/PPT	CO3
31	Poor Girl- Maya Angelou	Text		CO2
32	The Mask- Kamala Suraiya	Text		CO1
33	The Mask- Kamala Suraiya	Text		CO2

34	Goodbye party for Miss Pushpa T S-Nissim Ezekiel	Text	Poetry Recitation	CO4
35	Goodbye party for Miss Pushpa T S-Nissim Ezekiel	Text		CO5
36	Once Upon a Time-Gabriel Okara	text	Quiz	CO5
MODULE III: Short Story				
37	The Lottery Ticket- Anton Pavlovich Chekhov	Text		CO 3
38	The Lottery Ticket- Anton Pavlovich Chekhov	Text		CO 3
39	The Lottery Ticket- Anton Pavlovich Chekhov	Text		CO 4
40	The Lottery Ticket- Anton Pavlovich Chekhov	Text	Quiz	CO 5
41	The Lottery Ticket- Anton Pavlovich Chekhov	Text	Video/ e-content	CO 3
42	Retrieved Reformation- O. Henry	Text		CO 4
43	Retrieved Reformation- O. Henry	Text		CO 5
44	Retrieved Reformation- O. Henry	Text		CO 2
45	Retrieved Reformation- O. Henry	Text	PPT	CO 3
46	Retrieved Reformation- O. Henry	Text		CO1
47	A Shadow- R K Narayan	Text		CO 2
48	A Shadow- R K Narayan	Text		CO 5
49	A Shadow- R K Narayan	Text		CO 5
50	A Shadow- R K Narayan	Text	PPT	CO3
51	A Devoted Son- Anita Deasi	Text		CO 5
52	A Devoted Son- Anita Deasi	Text		CO2
53	A Devoted Son- Anita Deasi	Text		CO4

54	A Devoted Son- Anita Deasi	Text	Discussion/Quiz	CO6
55	Two Gentlemen of Verona- A J Cronin	Text		CO3
56	Two Gentlemen of Verona- A J Cronin	Text		CO 5
57	Two Gentlemen of Verona- A J Cronin	Text		CO3
58	Two Gentlemen of Verona- A J Cronin	Text	Quiz	CO 5
59	Two Gentlemen of Verona- A J Cronin	Text	Role Play	CO3
60	Two Gentlemen of Verona- A J Cronin	Text		CO 5
Unit 4: DRAMA				
61	Refund- Fritz Karinthy	Text		CO3
62	Refund- Fritz Karinthy	Text		CO 5
63	Refund- Fritz Karinthy	Text		CO3
64	Refund- Fritz Karinthy	Text	Enacting the Drama	CO 5
65	Lord Byron's Love Letter-Tennesse Williams	Text		CO3
66	Lord Byron's Love Letter-Tennesse Williams	Text	Quiz	CO 5
Second Internal Examination				
67	Lord Byron's Love Letter-Tennesse Williams	Text		CO3
68	Lord Byron's Love Letter-Tennesse Williams	Text	Enacting the Drama	CO 5
69	The Monkey's Paw- W.W Jacob	Text Recital/ lecture		CO3

70	The Monkey's Paw- W.W Jacob	Text		CO 5
71	The Monkey's Paw- W.W Jacob	Text		CO 3
72	The Monkey's Paw- W.W Jacob	Text	Enacting the Drama	CO 5

References

Reading Literature in English: MG University

COURSE PLAN 2

PROGRAMME	BACHELOR OF SCIENCE – CHEMISTRY	SEMESTER	1
COURSE CODE AND TITLE	15U1CCHIN1A – PROSE AND DRAMA	CREDIT	4
HOURS/WEEK	4	HOURS/SEM	72
FACULTY NAME	Dr. MINIPRIYA R, SYAMLAL M. S		

	COURSE OUTCOMES	**PO/ PSO**	**CL**
CO 1	Understand and explain the different prose forms written in Hindi language.	PO1, PO2, PO6	U
CO 2	Understand various trends in Hindi Drama and its presentation.	PO1, PO2, PO5, PSO2	A
CO 3	Understand the ancient Indian culture	PO1, PO2, PO5, PO6, PSO2	An
CO 4	Understand the socio - cultural change in literature	PO1, PO3, PO6,	U
CO 5	Understand the development of literature and aesthetics	PO1, PO3, PO4, PO5, PO6, PSO2	An

CL* Cognitive Level
R- Remember
U- Understand
A- Apply
An- Analyze
E- Evaluate
Cr- Create

CO - PO/PSO Mapping

CO	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				
CO 2	2	2			2			1		
CO 3	2	2			2	1		1		
CO 4	2		2			2				
CO 5	2		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
MODULE I				
1	General information about literature	Lecture/Discussion		CO 4, CO 5
2	Development of Drama	Lecture/Discussion		CO 1, CO 2
3	Madhavi – Introduction of Author Bhishma Sahni	Lecture/PPT		CO 2, CO 5
4	Madhavi Act – 1, Scene -1	Lecture	Video	CO 2
5	Essay - Jeevan Mein Sahitya Ka Sthan Introduction of Author Premchand	Lecture/Discussion		CO 1, CO 4
6	Premchand and his literary works	Lecture/PPT		CO 5

7	Madhavi Act – 1, Scene -1	Lecture	Narration of stories related to 'Mahabharat'	CO 2
8	Revision	Interaction	Video	CO1, CO 4
9	Madhavi Act – 1, Scene -1	Lecture		CO 2
10	Madhavi Act – 1, Scene -2	Lecture/Discussion		CO 2
11	Essay - Jeevan Mein Sahitya Ka Sthan	Lecture	Seminar	CO 1, CO 4
12	Revision	Interaction	Presentation by students	CO 1, CO4
13	Madhavi Act – 1, Scene -2	Lecture		CO 2
14	Madhavi Act – 1, Scene -2	Lecture	Seminar	CO 2
15	Madhavi Act – 1, Scene -3	Lecture	Presentation by students	CO 2
16	Essay - Jeevan Mein Sahitya Ka Sthan	Interaction	Acting	CO 1, CO 4
17	Analyzing the characters of 'Madhavi'	Interaction	Conversation	CO 2,CO 3, CO 4
18	Essay - Jeevan Mein Sahitya Ka Sthan	Lecture		CO 1, CO 4
19	Madhavi Act – 1, Scene -3	Lecture/Discussion	Video	CO 2
20	Essay - Jeevan Mein Sahitya Ka Sthan	Lecture		CO 1, CO 4
21	Essay - Jeevan Mein Sahitya Ka Sthan	Interaction		CO 1, CO 4
22	Essay - Jeevan Mein Sahitya Ka Sthan	Lecture/Discussion	Seminar	CO 1, CO 4
23	Essay - Sahitya Ki Mahatta	Lecture/PPT		CO 1, CO 5

	Introduction of Author Mahaveer Prasad Dwivedi			
24	**CIA – I (1Hour Exam)**			
MODULE II				
25	Essay - Sahitya Ki Mahatta	Lecture		CO 1, CO 4
26	Essay - Sahitya Ki Mahatta	Lecture	Seminar	CO 1, CO 4
27	Essay - Sahitya Ki Mahatta	Lecture		CO 1, CO 4
28	Essay - Sahitya Ki Mahatta	Lecture/Discussion		CO 1, CO 4
29	Revision	Interaction	Seminar	CO 1, CO 4
30	Madhavi Act – 2, Scene -1	Lecture		CO 2
31	Madhavi Act – 2, Scene -1	Lecture	Presentation by students	CO 2, CO 4
32	Madhavi Act – 2, Scene -1	Lecture/Discussion		CO 2
33	Madhavi Act – 2, Scene -2	Lecture		CO 2
34	Madhavi Act – 2, Scene -2	Lecture		CO 2
35	Madhavi Act – 2, Scene -2	Lecture	Presentation by students	CO 2, CO 4
36	Revision	Interaction	Video	CO 2, CO 4
37	Madhavi Act – 2, Scene -3	Lecture		CO 2, CO 4
38	Madhavi Act – 2, Scene -3	Lecture/Discussion		CO 2
39	Essay - Lalit Kalayen Introduction of the Author Dr. Syamsundar Das	Lecture/PPT		CO 1, CO 4
40	Essay - Lalit Kalayen	Lecture	Seminar	CO 1, CO 4
41	Essay - Lalit Kalayen	Lecture		CO 1, CO 3
42	Essay - Lalit Kalayen	Lecture/Discussion		CO 1,CO 3 CO 4
43	Essay - Lalit Kalayen	Lecture/Discussion		CO 1, CO 4

44	Madhavi Act – 2, Scene -3	Lecture	Video	CO 3
45	Madhavi Act – 2, Scene -3	Lecture	Video	CO4
46	Interactive session	Discussion	Debate	CO1, CO4 , CO 5
47	**CIA – II (2 Hours Exam)**			
MODULE III				
48	Essay - Rashtra Ka Swaroop Introduction of the Author Vasudev Saran Agraval	Lecture/PPT	Seminar	CO 1 , CO 5
49	Essay - Rashtra Ka Swaroop	Lecture		CO 1, CO 4
50	Essay - Rashtra Ka Swaroop	Lecture		CO 1, CO 4
51	Essay - Rashtra Ka Swaroop	Discussion	Presentation by students	CO 1, CO 4
52	Madhavi Act – 2, Scene -4	Lecture		CO 2
53	Madhavi Act – 2, Scene -4	Lecture		CO 2
54	Madhavi Act – 3, Scene -1	Lecture		CO 2, CO 4
55	Madhavi Act – 3, Scene -1	Lecture/Discussion		CO 2, CO 4
56	Revision	Discussion	Video	CO 2, CO 4
57	Essay - Tum Ghar Kab Aoge Kavi Introduction of the Author Ramdhari Sinh Dinakar	Lecture/PPT		CO 1, CO 5
58	Essay - Tum Ghar Kab Aoge Kavi	Lecture	Seminar	CO 1
59	Essay - Tum Ghar Kab Aoge Kavi	Lecture		CO 1
60	Essay - Tum Ghar Kab Aoge Kavi	Lecture		CO 1
61	Essay - Tum Ghar Kab Aoge Kavi	Lecture/Discussion		CO 1, CO 4
62	Essay - Tum Ghar Kab Aoge Kavi	Discussion	Presentation by students	CO 1, CO 4

63	Madhavi Act – 3, Scene -2	Lecture		CO 2,CO 4 CO 5
64	Madhavi Act – 3, Scene -2	Lecture		CO 2
65	Madhavi Act – 3, Scene -2	Lecture/Discussion	Video	CO 2, CO 5
66	Madhavi Act – 3, Scene -3	Lecture	Video	CO 2
67	Madhavi Act – 3, Scene -3	Lecture/Discussion	Presentation by students	CO 2, CO 4
68	Madhavi Act – 3, Scene -3			CO2, CO 4
69	Madhavi Conclusion	Interaction	Criticising the drama	CO 2, CO 3
70	Seminar			CO 1, CO 5
71	Seminar			CO 1, CO 5
72	Evaluation of the course			CO 1, CO 2, CO 3, CO4, CO 5

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)	Course Outcome
1	Assignment (October)	Review of a lesson based on the text book 2 and reference-Writing (Individual)	CO 2, CO 4
2	Seminar (October)	Presentation on a given topic based on t the text book 1 and reference – oral (Individual)	CO 1, CO 3

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	September	Literary Analysis of drama and its video (Group Discussion)	CO 2
2	September	Presentation of any scene from drama Madhavi.(Group Activity)	CO 2

References

- **Hindi Natak Ka Ithihas : Somanath Gupth Hindi Bhavan, Allahabad**
- **Yug- Chaya , Editor: Shivdan Singh Chouhan, Rajkamal Prakashan,New Delhi.**

Web resource references:

- epustakalay.com
- www.hindikunj.com

COURSE PLAN

PROGRAMME	CHEMISTRY	SEMESTER	1
COURSE CODE AND TITLE	19U1CCFRN1A - FRENCH LANGUAGE AND COMMUNICATION SKILLS I	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, PSO2	U
CO 2	Understand the basic communication skills necessary for living in France and French speaking countries.	PO1, PO5,PO6, PO2,PSO2	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,PSO2	A
CO 4	Develop business communication skills	PO2, PO4,PO5, PO6,PSO2	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,PSO2	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,PSO2	U
CO 7	Understand and appreciate the history of France and Francophone countries and compare it to one's own country	PO2,PO6,PSO2	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,PSO2	U

CL* Cognitive Level

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				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	Method of Teaching	Value Additions	CO
	MODULE I			
1	**Introducing French Basics**	**role play,**	**french basic communication**	**1,2,3**
		Discussion		
2	**French basics -alphabets**	**chalk n talk, audio**	**Lecture**	**1,2,3**
3	**french basics**	**audio ppt, discussion**	**Lecture**	**1,2,3**
4	**french basics**	**chalk n talk**	**Lecture**	**1,2,3**
5	**numbers 1-20**	**role play,audio ppt**	**Lecture**	**1,2,3**
6	**verbs introduction**	**chalk n talk**	**Lecture**	**1,2,3**
7	**conjugation introduction**	**chalk n talk,ppt audio**	**audio**	**1,2,5**
8	**Greetings**	**role play,audio ppt**	**Know a new culture**	**1,2,6**
9	**Basic useful sentences in French**	**role play, audio ppt**	**Q and A**	**1,2,3**
10	**spell in French**	**role play,audio ppt**	**presentation**	**1,2,**
11	**Indefinite articles**	**chalk n talk,audio ppt**	**Lecture**	**1,2**
12	**prononciation of vowels**	**role play,audio ppt**	**Lecture**	**1,2**
13	**French culture**	**Discussion, audio,ICT**	**Lecture,q nd A**	**6,7,8**

14	Revision			
MODULE II				
15	introducing a third person	game,audio ppt	Q nd A	2,3
16	Asking personal information in french	role play,audio ppt	Lecture	2,3
17	Giving personal information in french	role play,audio ppt	Interaction	2,3
18	verbs etre ,avoir	chalk n talk	Lecture	2,3
19	ER verbs	chalk n talk, audio ppt	Lecture	2,3
20	adjectives of nationalities	role play, conversation	Lecture	2,3
21	grammar articles	role play, listening	Ppt	2,3
22	CIA 1			2,3
23	Profession	cross words,chalk n talk	Lecture	2,3
24	interests and tastes	role play,audio	Lecture	2,3,4
25	Masculine,feminine of adjectives	exercices ,chalk n talk,audio	Lecture	1,2,4,5
26	French culture- french names and profession	roleplay,audio	knowing culture	5,6,7,8
27	explaing the objective of learning French	Discussion, ICT,audio	Lecture,q and A	5,6,7,8
28	Revision			
		MODULE III		
29	describe a locality	oral, description	Q and A	2,3,
30	Express in quatity	role play,chalk n talk	Lecture	2,3
31	"vivre" verb conjugation	audio,chalk n talk	Lecture	2,3
32	places vocabulary	games,music,audio	Video	2,3,5
33	Il y a,	audio,	daily needed vocabs	2,3
	il n'y a pas	chalk n talk		
34	definite articles	chalk n talk,audio ppt	Lecture	2,3
35	Adjectives	role play,audio ppt	Lecture	2,3
36	Prepositions	role play ,audio ppt	Lecture	2,3,4
37	Negation	chalk ntalk/roleplay	Lecture	2,3
38	Qualificative adjectives	chalk n talk ,audio ppt	Q and A	2,3
39	Describing ur ideal locality	role play/presentation	Lecture	2,3
40	intonations	audio ppt	Lecture	1,2,3
41	French culture-express preference for city or village	Discussion	knowing culture	5,6,7,8

42	revision			
43	CIA 2			
44	Correspondig with a friend expressing one's likings	chalk n talk/Role plays	Q and A	2,3
45	speak about a persons character	role play ,GD	know each other	5,6,7
46	adjectif possessif part 1	chalk n talk,audio ppt	Lecture	1,2,3
47	adjectif possessif part 2	chalk n talk, audio ppt	Lecture	2,4,5
48	speak about the surroundings	discussion	Lecture	2,3
49	introduce and describe someone	role play	Lecture	2,3,4
50	activities - vocabulary	lecture,audio	Lecture	1,2,5
51	sports vocabulary	speaking/role play	general knowledge	1,2,3
52	Vocabulary - relations	chalk n talk,audio ppt	Lecture	2,5,6
53	famous french personality	discussion/comprehension	Lecture	5,6,7,8
54	lexique des liens de parente	chalk n talk,audio ppt	Lecture	2,3,4
	Express ones likings	Audio ppt,discussion	Q and A	2,3
55	lexiques des loisirs	Audio ppt,discussion	Video	2,3
56	forme negation	Audio ppt,discussion	Q and A	2,3
57	pronounciation of verbs	Audio ppt,discussion	Q and A	2,3
58	form filling	Audio ppt,discussion	Q and A	2,3
59	french artists	Audio ppt,discussion	GK	2,3
60	french music	Audio ppt,discussion	Video	2,3
61	one's own musical preferences	Audio ppt,discussion	Q and A	
62	french music and comparison to one's own musical preference	discussion	knowing the culture	5,6,7,8
63	module 1 -revision			
64	module 1 -revision			
65	module 2- revision			
66	module 2-revision			
67	module 3-revision			
68	module 3-revision			
69	module 4-revision			
70	module 4-revision			
71 - 72	PYQs discussion			

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 October**	Basic vocabulary on communication skills in Malayalam and French	CO 2,3,6,8
2		roleplays	CO 123456

References

Version Originale, site web

COURSE PLAN

PROGRAMME	BACHELOR OF SCIENCE,CHEMISTRY	SEMESTER	1
COURSE CODE AND TITLE	15U1CCSAN1A: DRAMA,POETRYAND ALANKARA	CREDIT	4
HOURS/WEEK	4	HOURS/SEM	72
FACULTY NAME	Dr.VIJAYARAJAN K.U		

	COURSE OUTCOMES	**PO/ PSO**	**CL**
CO 1	Students can understand the poetic style with special reference to classical literature	PO1,PO2, PO6, PSO2	U
CO 2	Students get an awareness about Indian classical poetic tradition	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 ascthetic values	PO2, PO4,PO5, PO6,PSO2	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, PSO2	A
CO 6	Understand moral values through Drama	PO6,PO2,PSO2	U
CO 7	Understand the tools to beutify the literature through Alankara	PO2,PO6,PSO2	U
CO 8	Students identify the richness of Indian Literature	PO1,PO2,PO5,PO6,PSO2	U

CL* Cognitive Level

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
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
MODULE I				
1	Introducing Sanskrit Basics	Lecture		CO 1
2	About Mahakavya	Discussion		CO 1
3	About Kumarasambava	Lecture		CO 1
4	Fifth sarga of Kumarasambava	Lecture	e-resource	CO 1
5	Brahmacharipravesha	Lecture		CO 1
6	Parvathi's penance	Chalk ntalk		CO 1
7	Inviting Brahmachari	Lecture		CO 1
8	Purushartha	Chalk n talk		CO 1
9	Himalaya	Lecture		CO 1
10	Conversation to Parvathy	Lecture		CO 1
11	Critisisation	Discussion		CO 1
12	Questioning	Discussion		CO 1
13	Upamas	PPT/Lecture		CO 1
14	Revision			
MODULE II				
15	Sanskrit Drama - Introduction	PPT/Lecture		CO 6,7
16	Mahakavi Bhasa's Dramas	Chalk n talk		CO 6,7
17	Bhasa's Karnabharam	Lecture		CO 2,6,7
18	Mahabharatha	Lecture		CO 2,6,7
19	Mangalasloka	Lecture		CO 2,6,7
20	Entry of Karna	PPT/Lecture		CO 3,6,7
21	Request to Karna	PPT/Lecture		CO 3,6,7

22	Duryodhana's order	PPT/Lecture		CO 3,6,7
23	Karna's sadness	PPT/Lecture		CO 3,6,7
24	Revenge	Lecture		CO 3,6,7
25	Karna's birth	Lecture		CO 3,6,7
26	CIA-1			
27	Kunthi's request	Lecture		CO 3,5,6,7
28	Karna's study	Lecture		CO 3,5,6,7
29	ParaShurama's teaching	PPT/Lecture		CO 3,5,6,7
30	Parashrama's curse	PPT/Lecture		CO3,5,6,7
31	Greatness of Kshathriyas	PPT/Lecture		CO 3,5,6,7
32	Bravery of Karna	Lecture		CO 6,7
33	Indra's request to karna	Lecture		CO 6,7
34	Brahmana's blessing	PPT/Lecture		CO 6,7
35	Karna offering Horses	PPT/Lecture		CO 6,7
36	Karna offering elephants	PPT/Lecture		CO 3,6,7
37	Karna offering gold	Lecture		CO 3,6,7
38	Karna offering his kavacha	Lecture		CO 3,6,7
39	Indra accepting kavacha and kundala	PPT/Lecture		CO 3,6,7
40	Indra's blessing	PPT/Lecture		CO 3,6,7
41	The greatness of giving	PPT/Lecture		CO 3,6,7
42	**Revision**			
43	Revision			
44	Revision			
45	Revision			
	MODULE III			
46	Alankara introduction			

47	Kuvalayananda	PPT/Lecture		CO 4,7
48	Upama alankara	PPT/Lecture		CO 4,7
49	Upamana ,Upameya ,sadharana dharma	PPT/Lecture		CO 4,7
50	Ullekha Alankara	PPT/Lecture		CO 4,7
51	Dipika Alankara	PPT/Lecture		CO 4,7
52	Dipika example	PPT/Lecture	Video	CO 4,7
53	Vyathireka Alankara	PPT/Lecture		CO 4,7
54	Aprastutaprasamsa	PPT/Lecture		CO 4,7
55	Revision			
56	Svabhavokthi Alankara	Lecture	Debate	CO 4,7
57	Rupaka Alankara	PPT/Lecture		CO 4,7
58	Drishtantha Alankara	PPT/Lecture		CO 4,7
59	Dristantha -example	PPT/Lecture		CO 4,7
60	Arthantharanyasa	PPT/Lecture		CO 4,7
61	Prathama Ullekha	PPT/Lecture		CO 4,7
62	Dvitheeya Ullekha	PPT/Lecture		CO 4,7
CIA - II				
	MODULE IV			
63	Characteristic of Karna	Lecture		CO 5,8
64	Characteristics of Shalya	Lecture	Group discussion	CO 5,8
65	Characteristics of Indra	Lecture		CO 5,8
66	Characteristics of Parvathi	PPT/Lecture		CO 5,8
67	Characteristics of Brahmachari	PPT/Lecture		CO 5,8
68	Himalaya	PPT/Lecture		CO 5,8
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	12/08/2018	The role of Karna in Mahabharatha	CO 6,8
2	16/09/2018	Upama kalidasasya	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	23/9/2018	The moral values in Kumarasambava	CO 8
2	30/9/2018	Purushartha –the means of life	CO 8

References

1. Bhasanatakacakram O.R.I& Manuscript Library Trivandrum
2. Bhasanatakamanjari, Dr. V.S. Idakidath, Saparya Books, Kollam
3. Kumarasambhavam by Kuttikrishna Marar
4. Bhasanatakasarvasvam Sudhamsu Chathurvedi
5. Kalidasa Hhridayam, V. Unnikrishnan Nair
6. The Problems of Bhasa Plays, Dr. N.P. Unni
7. Abhijnana Sakunthalam, M.R.Kale
8. Kalidasarvasvam, Sudhamsucathurvedi
9. Kuvalayanandam , Appayyadikshitha

COURSE PLAN

PROGRAMME	**B.Sc CHEMISTRY**	SEMESTER	1
COURSE CODE & TITLE	19U1CCMAL1A കഥ നോവൽ	CREDITS	4
HOURS/WEEK	4	HOURS/SEM	72
FACULTY NAME	**VISHNU RAJ P, Dr. JUSTINA K AUGUSTINE**		

CO No	COURSE OUTCOMES	CL	PSO	PO
1	കഥ, നോവൽ എന്നിവയെക്കുറിച്ച് മെച്ചപ്പെട്ട ധാരണ ഉണ്ടാക്കുക	Un	2	1,2,3
2	ഭാഷാപഠനം സാഹിത്യാനുഭവത്തിലൂടെ ആവിഷ്ക്കരിക്കുക	Re	2	2,3,4
3	വായനാഭിരുചി വർദ്ധിപ്പിക്കുക	Ap	2	3,2
4	സാഹിത്യ പരിചയം ഉണ്ടാക്കുക	Un		1,24
5	വ്യാവഹാരിക തലത്തിൽ മാതൃഭാഷാപ്രയോഗിക്കുവാനുള്ള കഴിവ് നേടുക	Ap	2	3,4
6	ഭാഷാപഠനത്തിലൂടെ ആശയവിനിമയശേഷി വർദ്ധിപ്പിക്കുക	Cr	2	1,2

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**
CO 1	**1**	**3**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**
CO 2	**0**	**3**	**2**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**
CO 3	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**
CO 4	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**
CO5	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**
CO6	**2**	**3**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**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
Module I				
1	മലയാളസാഹിത്യം സാമാന്യാവലോകനം	സാഹിത്യ ചരിത്രങ്ങൾ	Lecturing	1,2,3,4
2	ചെറുകഥയുടെ ചരിത്രം -1	സാഹിത്യ ചരിത്രങ്ങൾ	Lecturing	1,2,3,4
3	ചെറുകഥയുടെ ചരിത്രം-2	സാഹിത്യ ചരിത്രങ്ങൾ	Discussion	1,2,3,4,6
4	തകഴിയുടെ രചനാലോകം	നോവൽ-ചെറുകഥാ പഠനങ്ങൾ	Lecturing	2,3,4
5	വെളുത്തകുഞ്ഞ്	Text	Reading	1,2,3,4,5,6
6	വെളുത്തകുഞ്ഞ്	Text	Group Discussion	1,2,3,4,5,6
7	സന്തോഷ് ഏച്ചിക്കാനത്തിന്റെ കഥകൾ	ചെറുകഥാ പഠനങ്ങൾ	Lecturing	2,3,4
8	അഭിനയമുഹൂർത്തങ്ങൾ കഥ	Text	Reading	1,2,3,4,5,6
9	അഭിനയമുഹൂർത്തങ്ങൾ കഥ	Text	Group Discussion	1,2,3,4,5,6
10	ഒ വി വിജയനെ പരിചയപ്പെടുത്തുന്നു	നോവൽ-ചെറുകഥാ പഠനങ്ങൾ	Lecturing	2,3,4
11	കടൽത്തീരത്ത്	Text	Reading	1,2,3,4,5,6
12	കടൽത്തീരത്ത്	Text	Group Discussion	1,2,3,4,5,6
13	എൻ എസ് മാധവന്റെ കൃതികളുടെ രാഷ്ട്രീയം	നോവൽ-ചെറുകഥാ പഠനങ്ങൾ	Lecturing	2,3,4

14	നാലാംലോകം കഥ	Text	Reading	1,2,3,4,5,6
15	നാലാംലോകം കഥ	Text	Group Discussion	1,2,3,4,5,6
16	നാലാംലോകം കഥ	Text	Group Discussion	1,2,3,4,5,6
17	ചെറുകഥ - അവലോകനം	Text	Group Discussion	1,2,3,4
		Module II		
18	എം ടി വാസുദേവൻ നായരുടെ കൃതികൾ	നോവൽ-ചെറുകഥാ പഠനങ്ങൾ	Lecturing	2,3,4
19	ഷെർലക്ക്	Text	Reading	1,2,3,4,5,6
20	ഷെർലക്ക്	Text	Group Discussion	1,2,3,4,5,6
21	ഉണ്ണി ആറിനെ പരിചയപ്പെടുത്തുന്നു	നോവൽ-ചെറുകഥാ പഠനങ്ങൾ	Lecturing	2,3,4
22	ഒറ്റപ്പെട്ടവൻ-	Text	Reading	1,2,3,4,5,6
23	ഒറ്റപ്പെട്ടവൻ-	Text	Group Discussion	1,2,3,4,5,6
24	ജോൺ എബ്രഹാം: സാഹിത്യവും സിനിമയും	നോവൽ-ചെറുകഥാ പഠനങ്ങൾ	Lecturing	2,3,4
25	നേർച്ചക്കോഴി	Text	Reading	1,2,3,4,5,6
26	നേർച്ചക്കോഴി	Text	Group Discussion	1,2,3,4,5,6
27	സാറാ ജോസഫ്, പുരാണ പുനർവായന	നോവൽ-ചെറുകഥാ പഠനങ്ങൾ	Lecturing	2,3,4
28	തായ്കുലം	Text	Reading	1,2,3,4,5,6
29	തായ്കുലം	Text	Group Discussion	1,2,3,4,5,6
30	ചെറുകഥ - 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

Module III				
33	മാധവിക്കുട്ടിയുടെ കഥകളുടെ പ്രത്യേകതകൾ	നോവൽ-ചെറുകഥാ പഠനങ്ങൾ	Lecturing	2,3,4
34	പക്ഷിയുടെ മണം	Text	Reading	1,2,3,4,5,6
35	പക്ഷിയുടെ മണം	Text	Group Discussion	1,2,3,4,5,6
36	വൈക്കം മുഹമ്മദ് ബഷീറിന്റെ ലോകം	നോവൽ-ചെറുകഥാ പഠനങ്ങൾ	Lecturing	2,3,4
37	ശിങ്കിടിമുങ്കൻ	Text	Reading	1,2,3,4,5,6
38	ശിങ്കിടിമുങ്കൻ	Text	Group Discussion	1,2,3,4,5,6
39	സേതുവിന്റെ കൃതികൾ		Lecturing	2,3,4
40	ദൂത്	Text	Reading	1,2,3,4,5,6
41	ദൂത്	Text	Group Discussion	1,2,3,4,5,6
42	കെ ആർ മീരയുടെ എഴുത്തുകൾ	നോവൽ-ചെറുകഥാ പഠനങ്ങൾ	Lecturing	2,3,4
43	മോഹമഞ്ഞ	Text	Reading	1,2,3,4,5,6
44	മോഹമഞ്ഞ	Text	Group Discussion	1,2,3,4,5,6
45	ചെറുകഥ - അവലോകനം	Text	Group Discussion	1,2,3,4
Module - IV				
46	മലയാളനോവൽ ചരിത്രം	സാഹിത്യ ചരിത്രങ്ങൾ	Lecturing	1,2,3,4
47	മലയാളനോവൽ ചരിത്രം	സാഹിത്യ ചരിത്രങ്ങൾ	Group Discussion	1,2,3,4
48	മലയാളനോവൽ - നൂതന പ്രവണതകൾ	സാഹിത്യ ചരിത്രങ്ങൾ	Lecturing	1,2,3,4
49	മലയാളനോവൽ - നൂതന പ്രവണതകൾ	സാഹിത്യ ചരിത്രങ്ങൾ	Group Discussion	1,2,3,4

50	വിനോയ് തോമസ്- ആമുഖം	നോവൽ പഠനങ്ങൾ	Lecturing	1,2,3,4
51	കരിക്കോട്ടക്കരി- നോവൽ ആമുഖം	നോവൽ പഠനങ്ങൾ	Lecturing	1,2,3,4
52	കരിക്കോട്ടക്കരി അധ്യായം 1	Text	Group Discussion	1,2,3,4,6
53	കരിക്കോട്ടക്കരി അധ്യായം 2	Text	Group Discussion	1,2,3,4,6
54	കരിക്കോട്ടക്കരി അധ്യായം 3	Text	Group Discussion	1,2,3,4,6
55	കരിക്കോട്ടക്കരി അധ്യായം 4	Text	Group Discussion	1,2,3,4,6
56	കരിക്കോട്ടക്കരി അധ്യായം 5	Text	Group Discussion	1,2,3,4,6
57	കരിക്കോട്ടക്കരി അധ്യായം 6	Text	Group Discussion	1,2,3,4,6
58	കരിക്കോട്ടക്കരി അധ്യായം 7	Text	Group Discussion	1,2,3,4,6
59	കരിക്കോട്ടക്കരി അധ്യായം 8	Text	Group Discussion	1,2,3,4,6
60	കരിക്കോട്ടക്കരി അധ്യായം 9	Text	Group Discussion	1,2,3,4,6
61	കരിക്കോട്ടക്കരി അധ്യായം10	Text	Group Discussion	1,2,3,4,6
62	കരിക്കോട്ടക്കരി അധ്യായം 11	Text	Group Discussion	1,2,3,4,6
	Internal Assessment 2			
63	കരിക്കോട്ടക്കരി അധ്യായം 12	Text	Group Discussion	1,2,3,4,6
64	കരിക്കോട്ടക്കരി അധ്യായം 13	Text	Group Discussion	1,2,3,4,6
65	കരിക്കോട്ടക്കരി	Text	Group Discussion	1,2,3,4,6

	അവലോകനം			
66	സംവാദം- വിനോയ് തോമസ്	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	Revision	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)	Weighttage
1	Date	മലയാളത്തിലെ തെരെഞ്ഞെടുത്ത കഥാകൃത്തുക്കളുടെ വിവരണങ്ങൾ	1,2,3,4,5,6
2	Date	സിലബസിൽ പഠിക്കാൻ ഇല്ലാത്ത ഒരു നോവലിന്റെ 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	Date	പാഠഭാഗങ്ങളുടെ അവതരണം	1,2,3,4
2	Date	പാഠഭാഗങ്ങളുടെ അവതരണം	1,2,3,4,5

Referance :

1. സമ്പൂർണ മലയാള സാഹിത്യ ചരിത്രം – എഡിറ്റർ :പന്മന രാമചന്ദ്രൻ നായർ

2.ചെറുകഥ ഇന്നലെ ഇന്ന് - എം അച്യുതൻ

3.മലയാള നോവൽ സാഹിത്യ ചരിത്രം - കെ എം തരകൻ

COURSE PLAN- THEORETICAL AND INORGANIC CHEMISTRY I

PROGRAMME	**BACHELOR OF SCIENCE IN CHEMISTRY**	**SEMESTER**	**1**
COURSE CODE AND TITLE	**15U1CRCHE01: THEORETICAL AND INORGANIC CHEMISTRY I**	**CREDIT**	**2**
HOURS/WEEK	**2**	**HOURS/SEM**	**36**
FACULTY NAME	**MR. SENJU DEVASSYKUTTY (SD) AND DR. JORPHIN JOSEPH (JRJ)**		

	COURSE OUTCOMES	**PO / PSO**	**CL**
CO1	*Remember the evolution of chemistry as a discipline of science*	PO 1, PO 5 PSO 1	R
CO2	*Understand the basics concepts of chemistry and fundamental principles of analytical chemistry.*	PO 1 PSO 1	U
CO3	*Analyse the features and limitations of various models of atomic structure.*	PO 1 PSO 1	U
CO4	*Apply the principles of quantum mechanics to describe atomic structure.*	PO 1, PO 6 PSO 1	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	PSO 5
CO 1	2				1		2				
CO 2	2						3				
CO 3	3						2				
CO 4	2					1		2		3	

Mapping Strength

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

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	COURSE OUTCOME
Module 1 - Chemistry as a discipline of science (3h) (JRJ)				
1	What is Science? - Scientific statements - Scientific methods – Observation - Posing a question	Conventional Teaching	video	CO 1
2	Formulation of hypothesis – Experiment – Theory – Law - Revision of scientific theories and laws. Evolution of chemistry - Alchemy - Branches of chemistry	Conventional Teaching		CO 1
3	Components of a research project -Introduction, review of literature, scope, materials and methods, results and discussion, conclusions and bibliography.	Conventional Teaching		CO 1
Module 2 - Basic Concepts in Chemistry (3h) (JRJ)				
4	Atomic mass and Molecular mass. Isotopes, isobars and isotones – Mole concept – Molar volume – Oxidation and reduction – Oxidation number and valency - Variable valency - Equivalent mass.	Conventional Teaching		CO 2
5	Methods of expressing concentration: Weight percentage, molality, molarity, normality, formality, mole fraction, ppm and millimoles.	Conventional Teaching		CO 2
6	Numerical Problems related to basic concepts.	Conventional Teaching	quiz	CO 2
Module 3 - Analytical Chemistry I (9h) (SD)				
7	**Quantitative Analysis**. Primary standard-secondary standard, quantitative dilution	Conventional Teaching		CO 2
8	Problems.	Conventional Teaching	quiz	CO 2
9	Problems.	Conventional Teaching	quiz	CO 2

10	Calibration of volumetric apparatus. Acid base titrations- titration curves –pH indicators.	Conventional Teaching		CO 2
11	Calibration of volumetric apparatus. Acid base titrations- titration curves –pH indicators.	Conventional Teaching		CO 2
12	Redox titrations – Titration curve – Titrations involving $KmnO_4$ and $K_2Cr_2O_7$- Redox indicators.	Conventional Teaching ASSIGNMENT I		CO 2
13	Complexometric titrations – EDTA titrations – titration curves – metal ion indicators and characteristics.	Conventional Teaching		CO 2
14	**Errors in Chemical Analysis.** Accuracy, precision, Types of error-absolute and relative error, methods of eliminating or minimizing errors.	Conventional Teaching ICT		CO 2
15	Methods of expressing precision: mean, median, deviation, average deviation and coefficient of variation. Significant figures and its application.	Conventional Teaching	Q & A session	CO 2
Module 4 - Atomic Structure (9h) (SD)				
16	Introduction to atomic structure based on historical development – Rutherford's atom model and its limitations	Conventional Teaching		CO 3
17	Failure of classical physics – Black body radiation	Conventional Teaching		CO 3
18	Compton Effect - Planck's quantum hypothesis -	Conventional Teaching		CO 3
19	Photoelectric effect	Conventional Teaching		CO 3
20	Generalization of quantum theory -Atomic spectra of hydrogen and hydrogen like atoms – Ritz-combination principle	Conventional Teaching	Q & A session	CO 3

21	Bohr theory of atom – Calculation of Bohr radius, velocity and energy of an electron -	Conventional Teaching		CO 3
22	Explanation of atomic spectra – Rydberg equation – Limitations of Bohr theory - Sommerfield modification	Conventional Teaching		CO 3
23	Louis de Broglie's matter waves – Wave-particle duality	Conventional Teaching ICT		CO 3
24	Electron diffraction - Heisenberg's uncertainty principle	Conventional Teaching		CO 3
	Module 5 - Quantum Mechanical Model of Atom (12h) (JRJ)			
25	Operator algebra – Linear and Hermitian operators	Conventional Teaching		CO 4
26	Laplacian and Hamiltonian operators	Conventional Teaching ASSIGNMENT II		CO 4
27	Eigen functions and Eigen values of an operator	Conventional Teaching		CO 4
28	Postulates of quantum mechanics - Well behaved functions	Conventional Teaching		CO 4
29	Time independent Schrödinger wave equation - Application to particle in a one dimensional box	Conventional Teaching		CO 4
30	Normalization of wave function - Particle in a three-dimensional box-Degeneracy.	Conventional Teaching ICT		CO 4
31	Application of Schrödinger wave equation to hydrogen atom	Conventional Teaching		CO 4
32	Conversion of Cartesian coordinates to polar	Conventional		CO 4

	coordinates - The wave equation in spherical polar coordinates (derivation not required)	Teaching		
33	Radial and Angular functions (derivation not required) – Orbitals and concept of Quantum numbers (n, l, m).Radial functions - Radial distribution functions and their plots – Shapes of orbitals (s, p and d).	Conventional Teaching		CO 4
34	Schrödinger equation for multi-electron atoms: Need for approximation methods.	Conventional Teaching		CO 4
35	Electron spin – Spin quantum number - Pauli's Exclusion principle	Conventional Teaching	Q & A session	CO 4
36	Hund's rule of maximum multiplicity - Aufbau principle – Electronic configuration of atoms	Conventional Teaching	Q & A session	CO 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	04/08/2018	Bohr Atom Theory	CO 3
2	28/10/2018	Schrodinger Wave Equation	CO 4

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	02/11/2018	Postulates of Quantum Mechanics	CO 4

REFERENCES

1. Jeffrey A. Lee, *The Scientific Endeavor: A Primer on Scientific Principles and Practice,* Pearson Education, 1999.

2. C.N.R. Rao, *Understanding Chemistry*, Universities Press India Ltd., Hyderabad, 1999.

3. Robert H. Hill and David Finster, *Laboratory Safety for Chemistry Students*, 1st Edition, Wiley, Hoboken, NJ, 2010.

4. M.C. Day and J. Selbin, *Theoretical Inorganic Chemistry*, East West Press, New Delhi, 2002.

5. B.R. Puri, L.R. Sharma and K.C. Kalia, *Principles of Inorganic Chemistry*, 31st Edition, Milestone Publishers and Distributors, New Delhi, 2013.

6. Satya Prakash, *Advanced Inorganic Chemistry, Volume 1,* 5th Edition, S. Chand and Sons, New Delhi, 2012.

7. J. Mendham, R.C. Denney, J. D. Barnes and M. Thomas, *Vogel's Text Book of Quantitative Chemical Analysis*, 6th Edition, Pearson Education, Noida, 2013.

8. A.K. Chandra, *Introductory Quantum Chemistry*, 4th Edition, Tata McGraw Hill Publishing Company, Noida, 1994.

9. R.K. Prasad, *Quantum Chemistry*, 4th Edition, New Age International(P) Ltd., New Delhi, 2012.

10. B.K, Sen, *Quantum Chemistry – Including Spectroscopy*, 3rd Edition, Kalyani publishers, NewDelhi, 2010.

References

1. T.F Gieryn, *Cultural Boundaries of Science,* University of Chicago Press, Chicago, 1999.

2. H. Collins and T. Pinch, *The Golem: What Everyone Should Know about Science,* Cambridge University Press, Cambridge, 1993.

3. C.R. Kothari, *Research Methodology: Methods and Techniques*, 2nd Revised Edition, New Age International Publishers, New Delhi, 2004.

4. *Guidance in a Nutshell - Compilation of Safety Data Sheets*, European Chemicals Agency, Finland, Version 1.0, December 2013.

5. J. D. Lee, Concise Inorganic Chemistry, 5thedn., Blackwell Science, London (Chapter 1)

6. D. F. Shriver and P. W. Atkins, Inorganic Chemistry, 3rdedn., Oxford University Press(Chapter 1)

7. B. Douglas, D. Mc Daniel, J. Alexander, Concepts and models in Inorganic Chemistry (Chapter 1)

8. D.A. Skoog, D.M. West, F.J. Holler and S.R. Crouch, *Fundamentals of Analytical Chemistry*, 8th Edition, Brooks/Cole, Thomson Learning, Inc., USA, 2004

9. D.A. McQuarrie, *Quantum Chemistry*, 2nd Edition, University Science Books, California, 2008.

10. M.C. Day and J. Selbin, *Theoretical Inorganic Chemistry*, East West Press,New Delhi, 2002.

11. P.W. Atkins and R.S. Friedman, *Molecular Quantum Mechanics*, 3rd Edition,Oxford University Press, New York, 1997.

12 I.N. Levine, *Quantum Chemistry*, 6th Edition, Pearson Education Inc., New Delhi, 2009.

13. Jack Simons, *An Introduction to Theoretical Chemistry*, 2nd Edition, Cambridge University Press,Cambridge, 2005.

COURSE PLAN- PROPERTIES OF MATTER, MECHANICS AND PARTICLE PHYSICS

PROGRAMME	**BACHELOR OF SCIENCE IN CHEMISTRY**	**SEMESTER**	**1**
COURSE CODE AND TITLE	**15U1CPPHY2: PROPERTIES OF MATTER, MECHANICS AND PARTICLE PHYSICS**	**CREDIT**	**2**
THEORY HOURS/WEEK	**2**	**HOURS/SEM**	**36**
FACULTY NAME	**DR. MATHEW GEORGE & DR. PIUS AUGUSTINE**		

	COURSE OUTCOMES	**PO/ PSO**	**CL**
CO 1	Understanding the concepts of Elastic moduli- Poisson's ratio- twisting couple- determination of rigidity modulus	PO1, PSO1	U/An
CO 2	Understanding the basic concepts of Rotational dynamics of rigid bodies	PO1, PSO1	U/An
CO 3	Understanding the role of oscillations in Physics life	PO1, PSO1	U/An
CO 4	Understanding Particle Physics – Basic Introduction	PO1, PSO1	U/An

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	PSO 5
CO 1	2						2				
CO 2	3						3				
CO 3	3						3				
CO 4	2						2				

Mapping Strength

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

Session	**Topic to be covered/activity**	**Learning Resources**	**Value Additions**	**Course Outcome**
1	Introduction – to Elasticity	Lecture	Q & A Session	CO 1
2	Elastic moduli	Lecture		CO 1
3	Poisson's ratio and class activity	Class Activity in Groups		CO 1
4	Twisting couple	Lecture + PPT		CO 1
5	Determination of rigidity modulus	Lecture		CO 1
6	Determination of rigidity modulus Contd	Lecture		CO 1
7	Problems	Lecture		CO 1
8	Static torsion	Lecture		CO 1
9	Torsion pendulum	Lecture		CO 1
10	Bending of beams and Cantilever	Lecture		CO 1
11	Problems	Class Activity in Groups	Q & A Session	CO 1
12	Uniform Bending	Lecture		CO 1
13	Non-Uniform bending	Lecture + Video		CO 1
14	Introduction	Lecture		CO2
15	Angular velocity, angular momentum	Lecture		CO2
16	Torque, conservation of angular momentum	Lecture		CO2
17	Angular acceleration, moment of inertia	Lecture		CO2

18	Parallel and perpendicular axes theorem	Lecture		CO2
19	Moment of inertia of rod, ring	Lecture		CO2
20	Moment of inertia of disc, cylinder	Lecture		CO2
21	Moment of inertia of sphere	Lecture		CO2
22	Moment of inertia of flywheel	Lecture		CO2
23	Review, problems	Lecture	Quiz	CO2
24	Periodic and oscillatory motion	Lecture		CO3
25	Simple harmonic motion, differential equation	Lecture		CO3
26	Expression for velocity, displacement and acceleration, graphical representation	Lecture	Q & A Session	CO3
27	Energy of particle executing SHM	Lecture		CO3
28	Damped oscillations	Lecture		CO3
29	Forced oscillations	Lecture		CO3
30	Resonance	Lecture		CO3
31	Review, problems	Lecture	Quiz	CO3
32	Fundamental interaction in nature	Lecture		CO4
33	Gauge particles	Lecture		CO4
34	Classification of particles antiparticles	Lecture		CO4
35	Elementary particle quantum numbers	Lecture		CO4
36	Conservation laws and Quark Model	Lecture		CO4

References

1. Mechanics- H.S.Hans and S.P.Puri. (Tata McGraw-Hill)
2. Properties of Matter- Brijlal and N. Subrahmanyam (S. Chand and Co.)
3. Concepts of Modern Physics- A. Beiser (Tata McGraw-Hill, 5th Edn.)

COURSE PLAN - DIFFERENTIAL CALCULUS AND TRIGONOMETRY

PROGRAMME	**BACHELOR OF SCIENCE IN CHEMISTRY**	**SEMESTER**	**1**
COURSE CODE AND TITLE	**15U1CPMAT01: DIFFERENTIAL CALCULUS AND TRIGONOMETRY**	**CREDIT**	**3**
HOURS/WEEK	**4**	**HOURS/SEM**	**60**
FACULTY NAME	**MR. SANIL JOSE**		

	COURSE OUTCOMES	PO/ PSO	CL
CO 1	Understand limits, derivatives of a functions and its applications.	PO1, PSO2	U
CO 2	Determine whether a given function is increasing or decreasing.	PO1, PSO2	A
CO 3	Apply the concepts of maxima and minima of a function to real world problems	PO1, PSO2	U
CO 4	Understand the concepts of derivative of functions of more than one variable	PO1/ PSO2	Ap
CO 5	Understand the concepts of Trigonometric functions, their properties and summation of trigonometric series	PO1, PSO2	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	PSO 5
CO 1	2							2			
CO 2	3							1			
CO 3	3							2			
CO 4	2							2			
CO 5	1							2			

Mapping Strength

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

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Sessions	Topic	LEARNING RESOURCES	VALUE ADDITIONS	COURSE OUTCOME
1	Introductory Session	Lecture	Q & A Session	CO 1

2	Rates of change and limits	Lecture		CO 1
3	Calculating limits using the limit laws	Lecture, Problem Solving		CO 1
4	Calculating limits using the limit laws	Lecture, Problem Solving		CO 1
5	The precise definition of a limit	Lecture,		CO 1
6	The precise definition of a limit	Lecture Problem Solving		CO 1
7	One sided limits and limits at infinity	Lecture, Problem Solving		CO 1
8	Derivative of a function	Lecture, Problem Solving		CO 1
9	Derivative of a function	Lecture, Problem Solving		CO 1
10	Differentiation rules	Lecture, Problem Solving		CO 1
11	Differentiation rules	Lecture, Problem Solving		CO 1
12	The derivative as a rate of change	Lecture		CO 1
13	The derivative as a rate of change	Lecture, Problem Solving		CO 1
14	Derivatives of trigonometric functions	Lecture, Problem Solving		CO 1
15	The chain rule and parametric equations	Lecture, Problem Solving		CO 1
16	The chain rule and parametric equations	Lecture, Problem Solving		CO 1
17	Implicit Differentiation.	Lecture, Problem Solving		CO 1
18	Implicit Differentiation.	Lecture, Problem Solving		CO 1
19	Test			
20	Extreme values of functions	Lecture, Problem Solving		CO 2
21	Extreme values of functions	Lecture, Problem Solving		CO2
22	The Mean Value Theorem	Lecture, Problem Solving		CO 3

23	The Mean Value Theorem	Lecture, Problem Solving		CO 3
24	Monotonic functions	Lecture, Problem Solving		CO 2
25	Monotonic functions	Lecture, Problem Solving		CO2
26	First derivative test.	Lecture, Problem Solving		CO 2
27	First derivative test.	Lecture, Problem Solving		CO2
28	First derivative test.	Lecture, Problem Solving		CO 2
29	Test			CO2
30	Functions of several variables	Lecture, Problem Solving		CO 4
31	Partial derivatives	Lecture, Problem Solving		CO 4
32	Partial derivatives	Lecture, Problem Solving		CO 4
33	Partial derivatives	Lecture, Problem Solving		CO 4
34	Partial derivatives	Introduction		CO 4
35	The Chain Rule	Lecture, Problem Solving		CO 4
36	The Chain Rule	Lecture, Problem Solving		CO 4
37	The Chain Rule	Lecture, Problem Solving		CO 4
38	The Chain Rule	Lecture, Problem Solving		CO 4
39	Test			CO 4
40	Expansions of sin $n\theta$	Lecture, Problem Solving		CO 5
41	Expansions of cos $n\theta$,	Lecture, Problem Solving		CO 5
42	Expansions of tan $n\theta$	Lecture, Problem Solving		CO 5
43	Expansions of $\sin^n \theta$	Lecture, Problem Solving		CO 5
44	Expansions of $\cos^n \theta$,	Lecture, Problem Solving		CO 5
45	Expansions of $\sin^n \theta \cos^m \theta$	Lecture, Problem Solving		CO 5

46	Circular and hyperbolic functions	Lecture, Problem Solving		CO 5
47	Circular and hyperbolic functions	Lecture, Problem Solving		CO 5
48	Inverse circular and hyperbolic function	Lecture, Problem Solving		CO 5
49	Inverse circular and hyperbolic function	Lecture, Problem Solving		CO 5
50	Inverse circular and hyperbolic function	Lecture, Problem Solving		CO 5
51	Separation into real and imaginary parts	Lecture, Problem Solving		CO 5
52	Separation into real and imaginary parts	Lecture, Problem Solving		CO 5
53	Separation into real and imaginary parts	Lecture, Problem Solving		CO 5
54	Summation of infinite series based on C + iSmethod	Lecture, Problem Solving		CO 5
55	Summation of infinite series based on C + is method	Lecture, Problem Solving		CO 5
56	Summation of infinite series based on C + is method	Lecture, Problem Solving		CO 5
57	Summation of infinite series based on C + is method	Lecture, Problem Solving		CO 5
58	Summation of infinite series based on C + is method	Lecture, Problem Solving		CO 5
59	Application	Lecture, Problem Solving		CO 5
59	Revision	Lecture, Problem Solving		CO 5
60	Revision	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)	Course Outcome
1	4/9/2018	PROBLEMS IN DIFFERENTIATION	CO 1, CO 2
2	28/9/2018	PROBLEMS IN TRIGONOMETRY	CO 4

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	2/9/2018	PROBLEMS IN PARTIAL DIFFERENTIAL EQUATIONS	CO 3

Text Books: -

1. George B. Thomas, Jr: Thomas' Calculus Eleventh Edition, Pearson, 2008.

2. S.L. Loney – Plane Trigonometry Part – II, AITBS Publishers India, 2009.

Reference Books :

1. Shanti Narayan : Differential Calculus (S Chand)

2. George B. Thomas Jr. and Ross L. Finney : Calculus, LPE, Ninth edition, Pearson Education.

3. S.S. Sastry, Engineering Mathematics, Volume 1, 4 th Edition PHI.

4. Muray R Spiegel, Advanced Calculus, Schaum's Outline series.