

SACRED HEART COLLEGE (AUTONOMOUS)

Department of Physics

BACHELOR OF SCIENCE IN PHYSICS

Course plan

Academic Year 2015 - 16

Semester 2

COURSE PLAN

PROGRAMME	BSc PHYSICS	SEMESTER	2
COURSE CODE & TITLE	15U2CCENG3: CRITICAL THINKING, ACADEMIC WRITING AND PRESENTATION	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	72

COURSE OBJECTIVES

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

SESSION	TOPIC	LEARNING RESOURCES	REMARKS
	MODULE I		
1	Introduction to Critical Thinking	Lecture/PPT	
2	Introduction to Critical Thinking	Lecture/PPT	
3	Introduction to Critical Thinking	Lecture/PPT	
4	Introduction to Critical Thinking	Lecture/PPT	
5	Reasoning and Arguments	Activities/ Discussion	
6	Reasoning and Arguments	Activities/ Discussion	
7	Reasoning and Arguments	Activities/ Discussion	
8	Reasoning and Arguments	Activities/ Discussion	
9	Reasoning and Arguments	Activities/ Discussion	
10	Reasoning and Arguments	Activities/ Discussion	
11	Deductive and Inductive Arguments	Course book	
12	Deductive and Inductive Arguments	Course book	
13	Deductive and Inductive Arguments	Course book	
14	Deductive and Inductive Arguments	Course book	
15	Deductive and Inductive Arguments	Course book	
16	Fallacies		

17	Fallacies	Course book	
18	Inferential Comprehension	Group Activities	
19	Inferential Comprehension	Group Activities	
20	Inferential Comprehension	Group Activities	
21	Inferential Comprehension	Course book	
22	Inferential Comprehension	Group Activities	
23	Inferential Comprehension	Group Activities	
24	Critical Thinking and Academic Writing	Group Activities	
25	Critical Thinking and Academic Writing	Group Activities	
26	Critical Thinking and Academic Writing	Group Activities	
	INTERNAL ASSESSMENT TEST 1		
27	Writing Models	Presentation	
28	Writing Models	Course book	
29	Writing Models		
30	Writing Models	Course book	
31	Writing Models	Course book	
32	Writing Letters		
33	Writing Letters	Course book	
34	Writing Letters	Course book	
35	Writing Letters		
36	Writing a Letter to the Editor	Course book	
37	Writing a Letter to the Editor	Course book	
38	Writing a Letter to the Editor		
39	Writing a Letter to the Editor	Course book	
40	Letter to the Editor	Course book	
41	Letter to the Editor	Course book	
42	Resume Writing		
	MODULE III		
43	Covering Letter	Lecture	
44	Covering Letter	Lecture	
45	Emails	Course book	
46	Emails	Course book	
47	Interview Skills		
48	Interview Skills	Course book	
49	Interview Skills	Course book	
50	Group Discussion		
52	Group Discussion	Course book	
53	Accuracy in Academic writing	Course book	
54	Accuracy in Academic writing	Course book	

55	Accuracy in Academic writing		
56	Articles and Determiners	Course book	
57	Articles and Determiners	Course book	
58	Nouns and Pronouns		
59	Subject-verb agreement	Lecture	
60	Phrasal verbs	Lecture	
61	Modals		
62	Tenses	Course book	
63	Tenses	Course book	
64	Tenses		
65	Conditional clauses	Course book	
66	Relative Pronouns	Course book	
67	Passive Voices		
	INTERNAL ASSESSMENT TEST 2		
68	Conjunctions	Lecture	
69	Embedded questions	Course book	
70	Embedded questions	Course book	
71	Punctuations and Abbreviations		
72	Soft skills for academic presentations	Course book	
73	Effective communication skills	Course book	
74	Flip Charts, OHP, Power point presentation	Group Presentations	
75	Clarity and brevity in presentation	Group Presentations	
76	Interaction and persuasion	Group Presentations	
77	Interview skills	Group Presentations	
78	Interview skills	Group Presentations	
79	Interview skills	Group Presentations	
80	Group Discussion	Group Presentations	
81	Group Discussion	Group Presentations	
82	Group Discussion	Group Presentations	
83	Group Discussion	Group Presentations	
84	Group Discussion	Group Presentations	
85	Group Discussion	Group Presentations	
86	Review Session 1		
87	Review Session 1		

88	Review Session 2		
89	Review Session 3		
90	Review Session 4		

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	4/1/2016	Writing Tasks- Different Types of Letters

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	2/02/2016	Brochure design
2	15/1/16	Model Slide Presentation

COURSE PLAN

PROGRAMME	UG COMMON COURSE	SEMESTER	2
COURSE CODE AND TITLE	15U2CCENG4: MUSINGS ON VITAL ISSUES	CREDIT	2
HOURS/WEEK	4	HOURS/SEM	72

COURSE OBJECTIVES

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

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

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

50	Judy Brady : "Why I Want a Wife"	Lecture, discussion		
51	Judy Brady : "Why I Want a Wife"	Lecture, discussion		
52	J B Priestley : "Mother's Day"	Lecture, discussion		
53	J B Priestley : "Mother's Day"	Lecture		
54	J B Priestley : "Mother's Day"	Discussion	Video	
55	J B Priestley : "Mother's Day"	Lecture		
56	Amartya Sen : "More Than 100 Million Women are Missing"	Lecture		
57	Amartya Sen : "More Than 100 Million Women are Missing"	Presentation		
58	Amartya Sen : "More Than 100 Million Women are Missing"	Presentation		
59	Amartya Sen : "More Than 100 Million Women are Missing"	Presentation		
60	Revision			
61	Revision			
62	Revision			
63	Revision			
64	Revision			
65	Revision			
66	Revision			
67	Revision			
68	Revision			
69	Revision			
70 - 72	Revision			
CIA 2				

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	2/2/2016	Presentations
2	28/1/2016	Role Plays

GROUP ASSIGNMENTS/ACTIVITIES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	12/1/2016	Group Discussions
2	20/1/2016	Performances

References

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

COURSE PLAN

PROGRAMME	BACHELOR OF SCIENCE – PHYSICS	SEMESTER	2
COURSE CODE AND TITLE	15U2CCHIN2A - TRANSLATION, CORRESPONDENCE, ESSAYS AND APPLIED GRAMMAR (SEM II)	CREDIT	4
HOURS/WEEK	4	HOURS/SEM	72

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

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	Importance of Grammar in Language learning.	Lecture/Discussion		
2	Part I Vyakaran	Lecture/Discussion		
3	Part I Vyakaran	Lecture/PPT		
4	Part I Vyakaran	Lecture	Exercise	
5	Importance of Translation	Lecture/PPT		
6	Translation	Lecture/PPT		
7	Translation	Lecture	Exercise	
8	Exercise -Translation	Interaction	Exercise	
9	Importance of Letter writing	Lecture/PPT		
10	Part II Patra Lekhan	Lecture/Discussion		
11	Ache Patra Ki Visheshtayen	Lecture/PPT		
12	Importance of Hindi Essays	Interaction	Discussion	
13	Patron Ke Prakar	Lecture		
14	Nibandh Ke Prakar	Lecture		
15	Nibandh Ke Prakar	Lecture/PPT	Exercise	
16	Part I Vyakaran	Lecture		
17	Part I Vyakaran	Interaction	Exercise	
18	Exercise -Translation	Lecture		
19	Revision	Discussion		

20	Patron Ke Prakar	Lecture		
21	Nibandh Ke Ang	Lecture		
22	Nibandh Lekhan Sambandhi Avashyak Batein	Lecture/Discussion		
23	Nibandh1,2	Lecture/PPT		
24	CIA – I (1Hour Exam)			
MODULE II				
25	Exercise Oriented Grammar	Lecture		
26	Exercise Oriented Grammar	Lecture/Discussion	Exercise	
27	Exercise Oriented Grammar	Lecture/ Discussion	Exercise	
28	Part II Patra Lekhan, Parivarik Patra	Lecture/PPT		
29	Part II Patra Lekhan, Parivarik Patra	Interaction		
30	Exercise –Translation	Lecture		
31	Exercise –Translation	Lecture/Discussion		
32	Revision	Interaction		
33	Exercise Oriented Grammar	Lecture		
34	Exercise Oriented Grammar	Lecture/ Discussion	Exercise	
35	Part II Patra Lekhan , Nimantran Patra	Lecture/PPT		
36	Nibandh 3	Lecture		
37	Nibandh 3,Exercise	Lecture/ Discussion		
38	Exercise –Translation	Lecture		
39	Exercise –Translation	Lecture/ Discussion		
40	Part II Patra Lekhan,Vyavasayik Patra	Lecture/PPT		
41	Nibandh 4	Lecture		
42	Nibandh 4,Exercise	Lecture/Discussion	Exercise	
43	Nibandh 5	Lecture/Discussion		
44	Nibandh 6	Lecture		
45	Nibandh 6,Exercise	Lecture/ Discussion	Exercise	
46	Revision	Interaction		
47	CIA – II (2 Hours Exam)			
MODULE III				
48	Exercise Oriented Grammar	Lecture/PPT		
49	Exercise Oriented Grammar	Lecture	Exercise	
50	Nibandh 7	Lecture		
51	Nibandh 7, Exercise	Lecture/Discussion	Exercise	
52	Part II Patra Lekhan, Adhikarik Patra	Lecture/PPT		
53	Part II Patra Lekhan, Adhikarik Patra	Lecture/ Discussion		
54	Exercise –Translation	Lecture		
55	Exercise –Translation	Lecture/Discussion		
56	Nibandh 8	Lecture		
57	Nibandh 8,Exercise	Lecture/ Discussion		
58	Exercise –Translation	Lecture		
59	Exercise Oriented Grammar	Lecture/PPT		
60	Exercise Oriented Grammar	Lecture	Exercise	

61	Part II Patra Lekhan, Shikayati Patra	Lecture/Discussion		
62	Nibandh 9	Lecture		
63	Nibandh 9,Exercise	Lecture/ Discussion		
64	Exercise – Translation	Lecture		
65	Part II Patra Lekhan , Karyalayi Patra	Lecture/PPT		
66	Nibandh 10	Lecture		
67	Nibandh 10,Exercise	Lecture/Discussion		
68	Seminar	Presentation by students		
69	Seminar	Presentation by students		
70	Revision	Interaction		
71	Revision	Interaction		
72	Evaluation of the course			

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

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

References

- Hindi vyakaran by Kamta Prasad Guru , Prabhat Prakashan

Web resource references:

- epustakalay.com
- www.hindikunj.com

COURSE PLAN

PROGRAMME	BSc PHYSICS	SEMESTER	2
COURSE CODE AND TITLE	15U2CCFRN2A - FRENCH LANGUAGE AND COMMUNICATION SKILLS II	CREDIT	4
HOURS/WEEK	4	HOURS/SEM	72

COURSE OBJECTIVES

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

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

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

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

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

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

References

Version Originale, site web

COURSE PLAN

PROGRAMME	BACHELOR OF SCIENCE IN PHYSICS	SEMESTER	2
COURSE CODE AND TITLE	15U2CCSAN2A: COMMUNICATION SKILLS IN SANSKRIT	CREDIT	4
HOURS/WEEK	4	HOURS/SEM	72

COURSE OBJECTIVES

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

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
MODULE I				
1	Introducing Vibhakthi	Lecture		
2	Prathama vibhakthi	Discussion		
3	Dvitheeya vibhakthi	Lecture		
4	Thritheeya vibhakthi	Lecture	e-resource	
5	Chathurthi vibhakthi	Lecture		
6	Panchami vibhakthi	Chalk n talk		
7	Shashti vibhakthi	Lecture		

8	Sapthami vibhakthi	Chalk n talk		
9	Sambhodhanaprathama	Lecture		
10	Akarantha pulinga bala shabha	Lecture		
11	Aakarantha sthreeelinga Latha shabdha	Discussion		
12	Ekarantha pulinga Kavi shabdha	Discussion		
13	Ukarantha pulinga Guru shabdha	PPT/Lecture		
14	Revision			
MODULE II				
15	Structure of sentence- Present tense	PPT/Lecture		
16	Prathama purusha ekavachaam	Chalk n talk		
17	Prathama purusha divivachaam	Lecture		
18	Prathama purusha bahuvachaam	Lecture		
19	Madhyama purusha ekavachaam	Lecture		
20	Madhyam purusha divivachaam	Game		
21	Madhyam purusha bahuvachaam	Game		
22	Uthamapurusha ekavachaam	PPT/Lecture		
23	Uthamapurusha divivachaam	PPT/Lecture		
24	Uthamapurusha bahuvachaam	Lecture		
25	Past tense- Prathamapurusha	Lecture		
26	CIA-1			
27	Past tense -Madhyamapurusha	Lecture		
28	Past tense - Uthamapurusha	Chalk n talk		
29	Future tense - Prathamapurusha	Chalk n talk		
30	Future tense - Madhyamapurusha	Discussion		
31	Future tense - Uthamapurusha	Discussion		
32	Sentence making in Sanskrit-Active voice	Lecture		

33	Sentence making in Sanskrit –Passive voice	Lecture		
34	Revision			
35	Revision			
MODULE III				
36	Introduction Meghadootha	Lecture		
37	Explaining Khandakavyam	Lecture		
38	Yaksha -curse	PPT/Lecture		
39	Yaksha's meeting with cloud	PPT/Lecture		
40	Requesting to cloud	PPT/Lecture		
41	Praising cloud	Lecture		
42	Yaksha directing cloud	Lecture		
43	Meeting with Balaka bird	Chalk n talk		
44	Departure	Discussion		
45	Rajahamsa	Roleplay		
46	Explaining Mountain	Discussion		
47	Directing to Megha	PPT/Lecture		
48	Revision			
49	Revision			
MODULE IV				
50	Introduction Mrichakatika drama	PPT/Lecture		
51	Charudatha	PPT/Lecture	Video	
52	Vasanthasena	PPT/Lecture		
53	Vasanthasena's visiting	PPT/Lecture		
54	Rajasyala Samsthanaka	Lecture		
55	Vasanthasena 's meeting with Charudatha	Lecture	Debate	
56	Matithreya's conversation with Radanika	PPT/Lecture		

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

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

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

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

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

References

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

COURSE PLAN

PROGRAMME	B.Sc PHYSICS	SEMESTER	2
COURSE CODE & TITLE	15U2CCMAL2A കവിത	CREDITS	4
HOURS/WEEK	4	HOURS/SEM	72

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

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

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

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

ASSIGNMENTS

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

SEMINAR

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

Reference :

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

COURSE PLAN (COURSE 7)

PROGRAMME	BSC PHYSICS	SEMESTER	2
COURSE CODE AND TITLE	15U2CRPHY02 Mechanics and Properties of Matter	CREDIT	2+(1Practical)
Theory HOURS/WEEK	2	HOURS/SEM	36

COURSE OBJECTIVES

Understand superposition of waves.

Analyse the theory of oscillation.

Define the basic concepts of angular velocity- angular acceleration- angular momentum.

State parallel and perpendicular axes theorems.

SESSION	TOPIC	LEARNING RESOURCES	REMARKS
MODULE I			
1	Introduction , Velocity- acceleration- force – acceleration due to gravity-weightlessness,	Lect	
2	compound pendulum (symmetric and unsymmetric) radius of gyration- kater's pendulum - centripetal acceleration and force- centrifugal force	Lect + Group Activity	
3	Angular velocity- angular acceleration- angular momentum- conservation-	Lect	
4	torque moment of inertia-	Lect	
5	Parallel and perpendicular axes theorem -	Lect	
6	Problem Solving Session	Lect+PPT	
7	calculation of moment of inertia-	Lect	
8	rod, ring, MI	Lect	
9	Problems with rod, ring, MI	Lect	
10	calculation of moment of inertia- rod, ring, MI	Lect	
11	disc, cylinder, Sphere MI	Lect	
MODULE III			
12	Molecular theory of surface tension- surface energy- excess pressure in a liquid	Lect + Group Activity	

13	Drop transverse waves on the surface of a liquid- effect of gravity-	Lect	
14	effect of surface tension- factors affecting surface tension-	Lect	
15	Applications of ST	Lect	
16	Streamline and turbulent flow-Viscosity	Lect+ppt	
17	Critical Velocity	Lect+activity	
18	Derivation of Poiseuille's Formula	Lect	
19	Stoke's Formulae, Lubricants	Lect+discussion	
20	Stress- strain- Hooke's law- ratio- -	Lect	
21	elastic module- Poisson's	Lect	
22	bending of Beams bending moment	Lect+ppt	
23	bending of Beams bending moment	Lect	
24	Young's modulus (cantilever-mirror and telescope)- microscope)	Lect+discussion	
25	Young's modulus (cantilever-mirror and telescope)- microscope)	Lect	
26	Young's modulus (uniform and non uniform bending-	Lect+discussion	
27	torsional oscillations rigidity modulus- static torsion(mirror and telescope)-	Lect	
28	I section girder.	Lect	
29	Molecular theory of surface tension- surface energy- -	Lect+ppt	
30	excess pressure in a liquid Drop transverse waves on the surface of a liquid	Lect	
31		Lect+discussion	
32	factors affecting surface tension- applications.	Lect	
33	Streamline and turbulent flow- critical velocity-	Lect	
34	derivation of Poiseuille's Formula	Lect+ppt	
35	derivation of Poiseuille's Formula	Lect	
36	Stoke's formula- Lubricants	Lect+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	20/12/2015	Problems associated with MI
2	20/1/2016	Applications of Surface Tension

GROUP ASSIGNMENTS– Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	Class activity in Feb 2016	Scope of Properties of matter in practical applications (Group Discussion)

References

1. Fundamentals of Physics - Halliday and Resnik (John Wiley)
2. Principles of Mechanics - John. L. Synge and Byron A Griffith (Mc- Graw Hill)
3. Advanced Physics - Materials and Mechanics - Tom Duncan (John Murray London)
4. Mechanics - D.S.Mathur (S.Chand)
5. Classical Mechanics - Goldstein
6. Classical Mechanics - K. SankaraRao (Prentice. Hall of India- N.Delhi)
7. Text Book of Sound - Brijlal and Subramaniam (S.Chand)
8. Refresher Course in Physics - Vol1- C.L.Arora
9. Vibration, Waves and Acoustics - D.Chattopadhyay (Books and Allied Pvt Ltd)
10. Properties of Matter - Brijlal and Subramaniam (S.Chand)
11. Properties of Matter - -D.S.Mathur (S.Chand)
12. Mechanics- H.S.Hans and S.P.Puri. (Tata McGraw-Hill)
13. Properties of Matter- Brijlal and N. Subrahmanyam (S. Chand and Co.)
14. Mechanics- J.C. Upadhyaya (Ram Prasad and Sons)

COURSE PLAN (COURSE 8)

PROGRAMME	COMPLEMENTARY CHEMISTRY FOR BACHELOR OF SCIENCE IN PHYSICS	SEMESTER	2
COURSE CODE AND TITLE	15U2CPCHE2: BASIC ORGANIC CHEMISTRY	CREDIT	2
HOURS/WEEK	2	HOURS/SEM	36

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

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

MODULE III: Mechanisms of Organic Reactions: Dr.Ragi A.S (15h)				
15	Hybridization and shape of molecules - sp^3 , sp^2 and sp , (ethane, ethene, ethyne)	Chalk & Board	quiz	
16	Types of reagents - electrophiles, nucleophiles.	Chalk & Board		
17	Types of electron displacement in organic molecules	Chalk & Board		
18	Explanation of the strength of carboxylic and halogen substituted acids,	Chalk & Board		
19	Basic strength of primary, secondary and tertiary amines.	Chalk & Board	Q & A Session	
20	Types of bond fission- homolytic and heterolytic fission.	Chalk & Board		
21	Reactive intermediates-carbocations-Their formation and stability.	Chalk & Board		
22	Substitution reactions: Nucleophilic substitution of alkyl halides- S_N1 and S_N2 mechanisms. Factors affecting rate of Substitution reaction of alkyl halide. Nature of alkyl halide, Effect of solvent. Stereochemistry of S_N1 and S_N2 reactions.	Chalk & Board		
23	Electrophilic substitution in benzene-reaction mechanism. Halogenation, Nitration and Sulphonation	Chalk & Board		
24	Addition reactions: electrophilic addition. Addition of Bromine and Hydrogen halides to ethane, propene and ethyne-the Markwonikoff's rule, Peroxide effect.	Chalk & Board		
25	Reactive intermediates- free radicals. Their formation and stability.	Chalk & Board		
26	Substitution reactions: Nucleophilic substitution of alkyl halides- S_N1 and S_N2 mechanisms. Factors affecting rate of Substitution reaction of alkyl halide. Nature of alkyl halide, Effect of solvent. Stereochemistry of S_N1 and S_N2 reactions.	Chalk & Board		
27	Electrophilic substitution in benzene-reaction mechanism. Halogenation, Nitration and Sulphonation	Chalk & Board		
28	Addition reactions: electrophilic addition. Addition of Bromine and Hydrogen halides to ethane, propene and ethyne-the Markwonikoff's rule, Peroxide effect.	Chalk & Board		
29	Elimination reactions: E1 and E2 mechanisms. Saytzeff and Hofmann elimination	Chalk & Board		
MODULE IV: Natural and Synthetic Polymers: Dr.Ramakrishnan S (7h)				
30	Classification of polymers: Natural, synthetic; linear, cross-linked and network; plastics,	Chalk & Board	Quiz	

	elastomers, fibres; homopolymers and copolymers.			
31	Polymerization reactions, Addition Polymerization,	Chalk & Board		
32	Condensation polymerization,	Chalk & Board		
33	Polyethene, polypropylene, PVC, phenol-formaldehyde resins, polyamides (nylons) and polyester.	Chalk & Board		
34	Natural rubber: structure, vulcanization.	Chalk & Board		
35	Synthetic rubbers- SBR, nitrile rubber, neoprene.	Chalk & Board		
36	Biodegradable polymers, environmental hazards caused by polymers, Health problem due to burning plastics.	Chalk & Board		

INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	04/12/2015	Conformations
2	28/01/2016	SN1 and SN2 reactions

GROUP ASSIGNMENTS/ACTIVITIES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	02/02/2016	Biodegradable Polymers

References

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

COURSE PLAN (COURSE 9)

PROGRAMME	BSC PHYSICS	SEMESTER	2
COURSE CODE AND TITLE	15U2CPMAT 02 : INTEGRAL CALCULUS AND MATRICES	CREDIT	.3
HOURS/WEEK	4	HOURS/SEM	60

COURSE OBJECTIVES
Understand definite integrals and The fundamental theorem of Calculus
Determine the area and volume of surfaces in space .
Understand the concepts of Double Integrals
Apply the concepts of multiple integrals to find the area and volume of regions in space
Understand the concepts of matrices
Apply the concepts of matrices to solve system of linear equations and characteristic roots

Sessions	Topic	Method	VALUE ADDITIONS	REMARKS
1	Introductory Session			
2	A quick review of indefinite integral as anti derivative.	Lecture, Discussion, Solving Group Problem		
3	A quick review of indefinite integral as anti derivative.	Lecture, Discussion, Solving Group Problem		
4	The Definite integral.	Lecture, Discussion, Solving Group Problem		

5	The Definite integral.	Lecture, Discussion, Solving	Group Problem		
6	The Definite integral.	Lecture, Discussion, Solving	Group Problem		
7	The Definite integral.	Lecture, Discussion, Solving	Group Problem		
8	The fundamental theorem of Calculus	Lecture, Discussion, Solving	Group Problem		
9	The fundamental theorem of Calculus	Lecture, Discussion, Solving	Group Problem		
10	The fundamental theorem of Calculus	Lecture, Discussion, Solving	Group Problem		
11	The fundamental theorem of Calculus	Lecture, Discussion, Solving	Group Problem		
12	The fundamental theorem of Calculus	Lecture, Discussion, Solving	Group Problem		

13	Substitution and area between curves	Lecture, Discussion, Solving	Group Problem		
14	Substitution and area between curves	Lecture, Discussion, Solving	Group Problem		
15	Substitution and area between curves	Lecture, Discussion, Solving	Group Problem		
16	Substitution and area between curves	Lecture, Discussion, Solving	Group Problem		
17	Volumes by slicing and rotation about an axis (disc method only)	Lecture, Discussion, Solving	Group Problem		
18	Volumes by slicing and rotation about an axis (disc method only)	Lecture, Discussion, Solving	Group Problem		
19	Volumes by slicing and rotation about an axis (disc method only)	Lecture, Discussion, Solving	Group Problem		
20	Volumes by slicing and rotation about an axis (disc method only)	Lecture, Discussion, Solving	Group Problem		

21	Volumes by slicing and rotation about an axis (disc method only)	Lecture, Discussion, Solving	Group Problem		
22	Areas of surfaces of revolution and the theorem of Pappus (excluding theorem of Pappus)	Lecture, Discussion, Solving	Group Problem		
23	Areas of surfaces of revolution and the theorem of Pappus (excluding theorem of Pappus)	Lecture, Discussion, Solving	Group Problem		
24	Areas of surfaces of revolution and the theorem of Pappus (excluding theorem of Pappus)	Lecture, Discussion, Solving	Group Problem		
25	Areas of surfaces of revolution and the theorem of Pappus (excluding theorem of Pappus)	Lecture, Discussion, Solving	Group Problem		
26	Double Integrals	Lecture, Discussion, Solving	Group Problem		
27	Double Integrals	Lecture, Discussion, Solving	Group Problem		
28	Area of bounded region in plane only	Lecture, Discussion, Solving	Group Problem		

29	Area of bounded region in plane only	Lecture, Discussion, Solving	Group Problem		
30	Area of bounded region in plane only	Lecture, Discussion, Solving	Group Problem		
31	Area of bounded region in plane only	Lecture, Discussion, Solving	Group Problem		
32	Double Integrals in Polar form,	Lecture, Discussion, Solving	Group Problem		
33	Double Integrals in Polar form,	Lecture, Discussion, Solving	Group Problem		
34	Double Integrals in Polar form,	Introduction			
35	Triple integrals in rectangular co-ordinates	Lecture, Discussion, Solving	Group Problem		
36	Triple integrals in rectangular co-ordinates	Lecture, Discussion, Solving	Group Problem		
37	Volume of a region in space	Lecture, Discussion, Solving	Group Problem		

38	Volume of a region in space	Lecture, Discussion, Solving	Group Problem		
39	Volume of a region in space	Lecture, Discussion, Solving	Group Problem		
40	Rank of a Matrix	Lecture, Discussion, Solving	Group Problem		
41	Non-Singular and Singular matrices	Lecture, Discussion, Solving	Group Problem		
42	Elementary Transformations	Lecture, Discussion, Solving	Group Problem		
43	Elementary Transformations	Lecture, Discussion, Solving	Group Problem		
44	Inverse of an elementary Transformations	Lecture, Discussion, Solving	Group Problem		
45	Equivalent matrices,	Lecture, Discussion, Solving	Group Problem		
46	Row Canonical form	Lecture, Discussion, Solving	Group Problem		

47	Row Canonical form	Lecture, Discussion, Solving	Group Problem		
48	Normal form	Lecture, Discussion, Solving	Group Problem		
49	Normal form	Lecture, Discussion, Solving	Group Problem		
50	System of non homogeneous	Lecture, Discussion, Solving	Group Problem		
51	Solution using matrices	Lecture, Discussion, Solving	Group Problem		
52	Solution using matrices	Lecture, Discussion, Solving	Group Problem		
53	Cramer's rule	Lecture, Discussion, Solving	Group Problem		
54	Cramer's rule	Lecture, Discussion, Solving	Group Problem		
55	System of homogeneous equations	Lecture, Discussion, Solving	Group Problem		
56	Characteristic equation of a matrix; Characteristic roots and characteristic vectors	Lecture, Discussion, Solving	Group Problem		
57	Cayley-Hamilton theorem and simple applications	Lecture, Discussion, Solving	Group Problem		
58	Cayley-Hamilton theorem and simple applications	Lecture, Discussion, Solving	Group Problem		

59	Revision			
60	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	4/1/2016	INTEGRATION PROBLEMS
2	28/1/2016	PROBLEMS IN MATRICES

GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	2/2/2016	PROBLEMS IN MULTIPLE INTEGRATION

Text Books

1. George B. Thomas, Jr: Thomas' Calculus Eleventh Edition, Pearson, 2008.
2. Frank Ayres Jr : Matrices, Schaum's Outline Series, TMH Edition.

Reference Books :

1. Shanti Narayan , P .K . Mittal :Integral Calculus (S. Chand & Company)
2. Shanthi Narayanan & P.K. Mittal, A Text Book of Matrices, S. Chand.
3. David W. Lewis - Matrix Theory (Allied)