

# **SACRED HEART COLLEGE (AUTONOMOUS)**

## **Department of Mathematics**

**BACHELOR OF SCIENCE**

**[MATHEMATICS]**

**Course plan**

**Academic Year 2014 - 15**

**Semester 3**

### COURSE PLAN

PROGRAMME	UG COMMON COURSE 3-Mathematics	SEMESTER	3
COURSE TITLE	REFLECTIONS ON INDIAN POLITY, SECULARISM AND SUSTAINABLE ENVIRONMENT	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	90

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

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
<b>MODULE I - INDIAN POLITY</b>				
1	The Preamble of the Constitution	Lecture		
2	The Preamble of the Constitution	PPT/Lecture		
3	The Preamble of the Constitution	PPT/Lecture		
4	On the Constitution of India	lecture		
5	Rajendra Prasad : “Let Posterity Judge”	PPT/Lecture	video	
6	Rajendra Prasad : “Let Posterity Judge”	PPT/Lecture	PPT	
7	Rajendra Prasad : “Let Posterity Judge”	Lecture		
8	Rajendra Prasad : “Let Posterity Judge”	Lecture		
9	Rajendra Prasad : “Let Posterity Judge”	PPT/Lecture	video	
10	Rajendra Prasad : “Let Posterity Judge”	PPT/Lecture		
11	Sebastian : “Exciting Views”	Discussion		
12	Sebastian : “Exciting Views”	Discussion		
13	Amulal Hingorani : “Brother Abdul Rahman”	Seminar Presentations	PPT	
14	Amulal Hingorani : “Brother Abdul Rahman”	Seminar Presentations	PPT	

15	Amulal Hingorani : “Brother Abdul Rahman”	Seminar Presentations	PPT	
MODULE II				
16	Vallathol : “My Master”	Discussion		
17	Vallathol : “My Master”	Discussion		
18	Louis Fischer : “Gandhi and Western World”	Seminar Presentations	PPT	
19	Louis Fischer : “Gandhi and Western World”	Seminar Presentations	PPT	
20	Louis Fischer : “Gandhi and Western World”	Seminar Presentations	PPT	
21	Louis Fischer : “Gandhi and Western World”	Seminar Presentations	PPT	
22	Raja Rao : “The Cow of the Barricades”	Lecture		
23	Raja Rao : “The Cow of the Barricades”	Lecture		
24	Raja Rao : “The Cow of the Barricades”	Discussion		
25	M.K.Gandhi : “Round Table Conference Speech”	Lecture	Text	
26	M.K.Gandhi : “Round Table Conference Speech”	PPT/Lecture		
27	M.K.Gandhi : “Round Table Conference Speech”	Lecture		
28	M.K.Gandhi : “Round Table Conference Speech”	Lecture		
29	C E M Joad : “The Gandhian Way”	Lecture		
30	C E M Joad : “The Gandhian Way”	PPT/Lecture	PPT	
31	C E M Joad : “The Gandhian Way”	Lecture		
MODULE III				
32	Mohinder Sing Sarna : “Smaller Gandhis”	Lecture	Text	
33	Mohinder Sing Sarna : “Smaller Gandhis”	Lecture		
34	Mohinder Sing Sarna : “Smaller Gandhis”	PPT/Lecture	PPT	
35	Mohinder Sing Sarna : “Smaller Gandhis”	Lecture	video	
36	Kumar Vikal : “Can you Make Out”	Seminar	PPT	
37	Kumar Vikal : “Can you Make Out”	Seminar	PPT	
38	Shashi Tharoor : “The Idea of India: India’s Mosaic of Multiplicities”	Seminar	PPT	
39	Shashi Tharoor : “The Idea of India: India’s Mosaic of Multiplicities”	Seminar	PPT	
40	Shashi Tharoor : “The Idea of India: India’s Mosaic of Multiplicities”	Seminar	PPT	
41	Roots	PPT/Lecture		
42	Roots	Lecture	video	
43	Roots	Lecture		
44	Roots	Lecture		
45	Roots	Lecture	Quiz	
46	Padma Sachdev : “Smoke”	Discussion	PPT	
47	Padma Sachdev : “Smoke”	Discussion	Essay	
48	Padma Sachdev : “Smoke”	Discussion		
MODULE IV				
49	Seminar	Presentation		

	<b>MODULE III- PRAXIS OF GANDHIAN THOUGHT</b>			
50	Fritjof Capra : “Deep Ecology”	Lecture	Video	
51	Fritjof Capra : “Deep Ecology”	Discussion		
52	Fritjof Capra : “Deep Ecology”	Discussion		
53	A K Ramanujan : “Ecology”	Seminar	PPT	
54	A K Ramanujan : “Ecology”	Seminar	PPT	
55	A K Ramanujan : “Ecology”	Seminar	PPT	
56	Sujatha Bhatt : “The First Meeting”	Lecture, discussion		
57	Sujatha Bhatt : “The First Meeting”	Discussion		
58	Ramachandra Guha : “A Gandhian in Garhwal”	Lecture	Notes	
59	Ramachandra Guha : “A Gandhian in Garhwal”	Discussion		
60	Ramachandra Guha : “A Gandhian in Garhwal”	Lecture		
61	Ramachandra Guha : “A Gandhian in Garhwal”	Lecture		
62	Jack London : “The Law of Life”	Seminar	PPT	
63	Jack London : “The Law of Life”	Seminar	PPT	
64	Jack London : “The Law of Life”	Seminar	PPT	
65	Jack London : “The Law of Life”	Seminar	PPT	
66	Elizabeth Bishop : “The Fish”	Discussion	Text	
67	Elizabeth Bishop : “The Fish”	Discussion	Text	
68	Chief Seattle : “The End of Living and the Beginning of Survival”	Presentation	PPT	
69	Chief Seattle : “The End of Living and the Beginning of Survival”	Presentation	PPT	
70	Chief Seattle : “The End of Living and the Beginning of Survival”	PPT/Lecture	PPT	
71	Deep Ecology	Lecture	video	
72	Deep Ecology	Lecture		
73	Robinson Jeffers : “The Last Conservative”	PPT/Lecture	Notes	
74	Robinson Jeffers : “The Last Conservative”	PPT		
75	Review			
76	Review			
77	Review			
78	Review			
79	Review			
80	Seminar Presentation	PPT		
81	Seminar Presentation	PPT		
82	CIA 2			

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

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	2/8/2014	Presentations
2	28/8/2014	Role Plays

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

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
<b>1</b>	12/9/2014	Group Discussions
<b>2</b>	20/9/2014	Performances

**References**

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

## COURSE PLAN

PROGRAMME	BACHELOR OF SCIENCE -MATHEMATICS	SEMESTER	3
COURSE TITLE	POETRY AND FICTION	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	90

### COURSE OBJECTIVES

Describe the various aspects of Hindi poetry in context of socio-cultural and political condition of that period.
Student will be able to recognise the social significance of a literary work in any language.
Develop creative thinking capacity through literature.
Acquire ability to read, appreciate and analyze Novel independently
Develop knowledge of literary forms in Hindi Short story and effective reading skills.

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

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

54	Rani Maa Ka Chabootara	Lecture/ Discussion		
55	Sthriyam, Introduction of the author	Lecture/PPT		
56	Akeli Awaz (Novel)	Lecture		
57	Sthriyam	Lecture		
58	Sthriyam	Lecture/ Discussion		
59	Sthriyam	Discussion	Seminar	
60	Revision	Interaction		
61	Revision	Interaction		
62	<b>CIA II (2 Hrs Exam)</b>			
	<b>MODULE II</b>			
63	Meerabai	Lecture/PPT		
64	Meerabai	Lecture		
65	Akeli Awaz (Novel)	Lecture		
66	Akeli Awaz (Novel)	Lecture		
67	Meerabai	Lecture/Discussion	Seminar	
68	Akeli Awaz (Novel)	Lecture/Discussion		
69	Meerabai	Interaction	Seminar	
70	Akeli Awaz (Novel)	Lecture		
71	Akeli Awaz (Novel)	Lecture/Discussion		
72	Prem Patra, Introduction of the Author	Lecture/PPT		
73	Prem Patra	Lecture/Discussion	Seminar	
74	Akeli Awaz (Novel)	Lecture		
75	Prem Patra	Lecture		
76	Prem Patra	Lecture/ Discussion	Seminar	
77	Aparadh, Introduction of the Author	Lecture/PPT		
78	Revision	Interaction		
79	Revision	Interaction		
80	Aparadh	Lecture		
81	Aparadh	Lecture	Seminar	
82	Aparadh	Lecture/Discussion		
83	Akeli Awaz (Novel)	Lecture/Discussion	Seminar	
84	Aparadh	Lecture		
85	Aparadh	Lecture		
86	Seminar	Discussion	Seminar	
87	Seminar	Discussion		
88	Revision	Interaction		
89	Revision	Interaction		
90	Evaluation of the course			



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

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

## GROUP ASSIGNMENTS/ACTIVITIES – Details & Guidelines

SL NO	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	By October	Exercise activity based on Novel (Group Discussion).
2		Review a Poem from the textbook 1 and reference, Writing (Group Activity).

### References

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

### Web resource references:

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

## COURSE PLAN

PROGRAMME	BSC MATHEMATICS	SEMESTER	3
COURSE TITLE	AN ADVANCED COURSE IN FRENCH I	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	90

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.
<b>Develop business communication skills</b>
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
<b>MODULE I</b>				
1	Revision of French Basics	Role play, games		
2	French Basics	Chalk n talk		
3	French Basics	Chalk and Talk		
4	French Basics	Chalk and Talk		
5	French Basics	Chalk and Talk		
6	French Basics	Chalk and Talk		
7	French Basics	Chalk and Talk		
8	French Basics	Chalk and Talk		
9	Unit 1 – Le passé compose	Chalk and talk		
10	Past tense	lecture		
11	Past tense –narrate an event	Communication skills		
12	Past tense –narrate an event	Oral		
13	Past tense –narrate an event	Oral		
14	Narrate the life of a person	Communication Skills		
15	Narrate a positive/Negative event	Communication Skills		
16.	To learn the entire life	Role play		

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

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

### INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

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

### References

Version Originale, site web

### COURSE PLAN

PROGRAMME	BACHELOR OF SCIENCE, MATHEMATICS	SEMESTER	3
COURSE TITLE	TRANSLATION AND COMMUNICATION	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	90

### COURSE OBJECTIVES

Learning the art of translation
Understanding translation as a Linguistic activity
Understanding translation as a cultural ,economic and professional activity
familiarizing the technology of Translation
Understand moral values through Drama
Inculcating students with reading and communication skills in Sanskrit
Understand the tools to beautify the literature through Drama and Translation
Students identify the richness of Indian Literature

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
<b>MODULE I</b>				
1	Introducing Translation	Lecture		
2	History of translation	Discussion		
3	History of Bible translation	Lecture		
4	History of Arabic translation	Lecture		
5	History of Indian translation	Lecture		
6	Qualities of translator	Chalk n talk		
7	Tools of Translation	Lecture		
8	Glossaries, Dictionaries	Chalk n talk		
9	News paper style	Lecture		
10	Theories of translation	Lecture		
11	Applied linguistics	Discussion		
12	Morphology	Discussion		
13	Syntax	PPT/Lecture		
14	Revision			
<b>MODULE II</b>				
15	Source language	PPT/Lecture		
16	Target language	Chalk n talk		
17	Transliteration	Lecture		
18	Word to word translation	Lecture		
19	Faithful translation	Lecture		
20	Recreation	Game		
21	Unit of translation	Game		
22	Sentence as the unit	PPT/Lecture		
23	Paragraph as the unit	PPT/Lecture		
24	Science related translation	Lecture		
25	Cultural importance in translation	Lecture		
<b>CIA-1</b>				
26	Poem translation	Lecture		
27	Prose translation	Chalk n talk		
28	Idioms and proverbs	Chalk n talk		
29	Translation in Modern age	Discussion		
30	Limitations of translation	Discussion		
31	Translation of person's name	Lecture		
32	Revision			
<b>MODULE III</b>				
33	Introduction Abhijnanashakunthalam	Lecture		
34	Prathamanga	Lecture		
35	Dushyantha's hunting	Lecture		
36	Dushyanthas meeting with Shakunthala	Lecture		

37	Shakunthala's history	PPT/Lecture		
38	Dvitheeyanga- Samagamam	PPT/Lecture		
39	Dushyantha's talk with Mandavya	PPT/Lecture		
40	Sages meeting with Dushyantha	Lecture		
41	Mandhavya going to palace	Lecture		
42	Thritheeyangam	Chalk n talk		
43	Dushyantha 's talk with shakunthala	Discussion		
44	Durvasa's visiting and curse	Roleplay		
45	Chathurthanga	Discussion		
46	Shakunthala's departure from Ashrama	PPT/Lecture		
47	Kannva's advice to Shakunthala	PPT/ Lecture		
48	Revision			
MODULE IV				
50	Introduction Mrichakatika drama	PPT/Lecture		
51	Charudatha	PPT/Lecture	Video	
52	Vasanthasena	PPT/Lecture		
53	Vasanthasena's visiting	PPT/Lecture		
54	Rajasyala Samsthanaka	Lecture		
55	Vasanthasena 's meeting with Charudatha	Lecture		
56	Matithreya's conversation with Radanika	PPT/Lecture		
57	Rohasena	PPT/Lecture		
58	Dvitheeyanka	PPT/Lecture		
59	Gambling incident	PPT/Lecture		
60	Catching Gambler	PPT/Lecture		
61	Escaping	PPT/Lecture		
CIA - II				
62	Vasanthasena's talk with her servant	Chalk n talk		
63	thritheeyanka	Lecture		
64	Rebhila's music discussion	Lecture	Group discussion	
65	Sharvilaka –the thief	Lecture		
66	Taking gold from Maithreya	PPT/Lecture		
67	Charudatha talk with Maithreya	PPT/Lecture		
68	Dootha's talking	PPT/Lecture		
69	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	13/08/2014	Kalidasa's Dramas
2	21/08/2014	Shakunthal in Mahabharatha

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

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	09/09/2014	The modern possibilities for Translation
2	24/09/2014	Shakunthalam and Medias

**References**

- Vivarttanattinte Bhasasatrabhoomika, Prabodhacandran V.R., Kerala Bhasha Instituite, Trivandrum, 1986, pp. 38-39
- Vivarttanam, A group of authors, Kerala Bhasha Instituite, 1990, Chapter, 3&Preface of N.V. Krishna Warriar, pp. 3-7.
- Sakunthalaparakashika, Prof. M.V. Gopalakrishnan
- Mricchakatikakathasamgrham, Prof. P.C. Vasudevan Elayat



**COURSE PLAN-**

PROGRAMME	<b>B.Sc MATHEMATICS</b>	SEMESTER	3
COURSE TITLE	അനുസരണ പൊതുജന	CREDITS	4
HOURS/WEEK	5	HOURS/SEM	90

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

Session	Topic	Learning Resources	Teaching Method	Remarks
<b>Module I</b>				
1	ദൃശ്യകലാ സാഹിത്യം സാമാന്യാവലോകനം,	സാഹിത്യചരിത്രങ്ങൾ	Lecturing	
2	ദൃശ്യകലാ സാഹിത്യം സാമാന്യാവലോകനം-നാടകം	സാഹിത്യചരിത്രങ്ങൾ	Lecturing	
3	ദൃശ്യകലാ സാഹിത്യം സാമാന്യാവലോകനം-നാടകം	സാഹിത്യചരിത്രങ്ങൾ	Discussion	
4	മലയാളശാകുന്തളം(നാടകം)	Text	Lecturing	
5	മലയാളശാകുന്തളം(നാടകം) ആമുഖം	Text	Reading	
6	മലയാളശാകുന്തളം(നാടകം)	Text	Group Discussion	
7	അങ്കം ഒന്ന്- ആമുഖം	Text	Lecturing	
8	അങ്കം ഒന്ന്- ആമുഖം	Text	Reading	
9	അങ്കം ഒന്ന്	Text	Group Discussion	
10	അങ്കം രണ്ട് ആമുഖം	Text	Lecturing	
11	അങ്കം രണ്ട് ആമുഖം	Text	Reading	
12	അങ്കം രണ്ട്	Text	Group Discussion	
13	അങ്കം -	Text	Lecturing	
14	അങ്കം രണ്ട്	Text	Reading	

15	അങ്കം മൂന്ന്	Text	Group Discussion	
16	അങ്കം മൂന്ന്	Text	Group Discussion	
17	അങ്കം മൂന്ന്	Text	Group Discussion	
18	അങ്കം നാല്	Text	Lecturing	
19	അങ്കം നാല്	Text	Reading	
20	അങ്കം നാല്	Text	Group Discussion	
21	അങ്കം നാല്	Text	Lecturing	
22	അങ്കം നാല്	Text	Reading	
23	അങ്കം നാല്	Text	Group Discussion	
		<b>Module II</b>		
24	നളചരിതം രണ്ടാംദിവസം (ആട്ടക്കഥ)	Text	Lecturing	
25	നളചരിതം രണ്ടാംദിവസം (ആട്ടക്കഥ)	Text	Group Discussion	
26	രംഗം അഞ്ച്	Text	Lecturing	
27	രംഗം അഞ്ച്	Text	Reading	
28	രംഗം ആറ്	Text	Group Discussion	
29	രംഗം ആറ്	Text	Group Discussion	
30	Internal Assessment 1	Text		
31	Question paper discussion	Text	Group Discussion	
32	രംഗം ആറ്	Text	Lecturing	
33	രംഗം ഏഴ്	Text	Reading	
34	രംഗം ഏഴ്	Text	Group Discussion	
35	രംഗം എട്ട്	Text	Lecturing	
36	രംഗം എട്ട്	Text	Reading	
37	രംഗം ഒൻപത്	Text	Group Discussion	
38	രംഗം ഒൻപത്		Lecturing	
39	രംഗം പത്ത്	Text	Reading	
40	രംഗം പത്ത്	Text	Group Discussion	
41	നളചരിതം - ഒരു അവലോകനം	Text	Lecturing	
42	നളചരിതം - ഒരു അവലോകനം	Text	Reading	
		<b>Module III</b>		
43	മലയാളനാടകചരിത്രം - അവലോകനം	സാഹിത്യചരി ത്രങ്ങൾ	Lecturing	
44	മലയാളനാടകചരിത്രം - അവലോകനം	സാഹിത്യചരി ത്രങ്ങൾ	Group Discussion	
45	മലയാള നാടകത്തിലെ - നൂതന പ്രവണതകൾ	സാഹിത്യചരി ത്രങ്ങൾ	Lecturing	
46	ഒരു മാധ്യമനൽ പ്രണയരാവ്-ആമുഖം	Text	Group Discussion	
47	ഒരു മാധ്യമനൽ പ്രണയരാവ്-ആമുഖം	Text	Lecturing	
48	നാടകവിശകലനം	Text	Lecturing	
49	നാടകവിശകലനം	Text	Group Discussion	
50	നാടകവിശകലനം	Text	Group Discussion	

51	നാടകാവതരണം	Text	Performance	
52	നാടകാവതരണം	Text	Performance	
53	നാടകവിശകലനം	Text	Group Discussion	
54	നാടകവിശകലനം	Text	Group Discussion	
55	നാടകാവതരണം	Text	Performance	
56	നാടകാവതരണം	Text	Performance	
57	നാടകാവതരണം	Text	Performance	
58	നാടകവിശകലനം	Text	Group Discussion	
59	നാടകാവതരണം	Text	Performance	
60	നാടകാവതരണം	Text	Performance	
61	നാടകാവതരണം	Text	Performance	
62	നാടകവിശകലനം	Text	Group Discussion	
63	സംവാദം	Text	Group Discussion	
		<b>Module IV</b>		
64	സിനിമയുടെ ചരിത്രം	Text	Group Discussion	
65	വാക്കും ദൃശ്യവും	Text	Presentation	
66	അധ്യായം 1	Text	Presentation	
67	അധ്യായം2	Text	Presentation	
68	ചെമ്മീൻ	Text	Presentation	
69	സിനിമ പ്രദർശനം	Film	Screening	
70	സിനിമ പ്രദർശനം	Film	Screening	
71	സിനിമ വിശകലനം	Text	Group Discussion	
72	സിനിമ വിശകലനം	Text	Group Discussion	
73	വിയേയൻ	Text	Group Discussion	
74	സിനിമ പ്രദർശനം	Film	Screening	
75	സിനിമ പ്രദർശനം	Film	Screening	
76	സിനിമ വിശകലനം	Text	Group Discussion	
77	പമേർ പാഞ്ചലി	Text	Group Discussion	
78	പമേർ പാഞ്ചലി	Text	Group Discussion	
79	സിനിമ പ്രദർശനം	Film	Screening	
80	സിനിമ പ്രദർശനം	Film	Screening	
81	സിനിമ പ്രദർശനം	Text	Presentation	
82	സിനിമ വിശകലനം	Text	Group Discussion	
83	സിനിമ വിശകലനം	Text	Group Discussion	
84	സിനിമസംവാദം	Text	Group Discussion	
87	സിനിമസംവാദം	Text	Group Discussion	
85	സെമിനാർ	Text	Presentation	
86	സെമിനാർ	Text	Presentation	
87	സെമിനാർ	Text	Presentation	
88	സെമിനാർ	Text	Presentation	
89	Revision	Text	Presentation	
90	Evaluation of the course	Interaction	Group Discussion	

### ASSIGNMENTS

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

### SEMINAR

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

Referance :

- 1.നാടകദർശനം -ജി .ശങ്കരപ്പിള്ള
- 2.സിനിമയുടെ ലോകം - അടൂർ ഗോപാലകൃഷ്ണൻ

PROGRAMME	BACHELOR OF SCIENCE MATHEMATICS	SEMESTER	3
COURSE TITLE	CALCULUS	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	75
FACULTY NAME	JEET KURIAN MATTAM		

<b>COURSE OBJECTIVES</b>	
Understand the concepts of successive differentiation, evolutes, involutes and asymptotes	
Understanding partial differentiation and applications	
Understand the applications of integration	
Understanding multiple integrals	

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
<b>MODULE I</b>				
1	Successive differentiation	PPT		
2	Successive differentiation	Problem solving		
3	Successive differentiation	Lecture		
4	Expansion using Taylors theorem	Problem solving		
5	Expansion using Taylors theorem	Lecture		
6	Expansion using Taylors theorem	Problem solving		
7	Expansion using Maclaurin's theorem	Lecture		
8	Expansion using Maclaurin's theorem	Lecture		
9	Expansion using Maclaurin's theorem	Lecture		
10	Length of an arc	Lecture/Problem solving		
11	Length of an arc	Lecture		
12	Concavity and points of inflection	Lecture/Problem solving		
13	Concavity and points of inflection	Lecture/Problem solving		
14	Radius of curvature	Lecture		
15	Radius of curvature	Lecture/Problem solving		
16	Centre of Curvature	Lecture		
17	Centre of Curvature	Lecture/Problem solving		
18	Evolute and Involute	PPT/Lecture		
19	Evolute and Involute	Lecture		

20	Properties of Evolutes			
21	Asymptotes and envelopes	Lecture		
22	Partial derivatives	Lecture		
23	Partial derivatives	Lecture/Problem solving		
24	The Chain Rule	Lecture/Problem solving		
25	The Chain Rule	Lecture/Problem solving		
26	Extreme Values and Saddle Points	Lecture/Problem solving		
27	Extreme Values and Saddle Points	Lecture/Problem solving		
28	Langrange Multiplier method	Lecture/Problem solving		
29	Lagrange Multiplier method	Lecture/Problem solving		
30	Lagrange Multiplier method	Lecture/Problem solving		
31	Constrained Variables	Lecture		
32	Constrained Variables	Lecture/Problem solving		
33	Substitution and area between curves	Lecture/Problem solving		
34	Substitution and area between curves	Lecture/Problem solving		
35	Substitution and area between curves	Lecture		
36	volumes by Slicing and rotation about an axis.	Lecture/Problem solving		
37	volumes by Slicing and rotation about an axis.	Lecture/Problem solving		
38	volumes by Slicing and rotation about an axis.	Lecture/Problem solving		
39	volumes by Slicing and rotation about an axis.	Lecture/Problem solving		
40	Volumes by cylindrical shells	Lecture/Problem solving		
41	Volumes by cylindrical shells	Lecture/Problem solving		
42	Volumes by cylindrical shells	Lecture/Problem solving		
43	Lengths of Plane Curves	Lecture/Problem solving		
44	Lengths of Plane Curves	Lecture/Problem solving		
45	Lengths of Plane Curves	Lecture/Problem solving		
46	Areas of surfaces of Revolution and the theorems of Pappus.	Lecture/Problem solving		
47	Areas of surfaces of Revolution and the theorems of Pappus.	Lecture/Problem solving		

48	Areas of surfaces of Revolution and the theorems of Pappus.	Lecture/Problem solving		
49	Areas of surfaces of Revolution and the theorems of Pappus.	Lecture/Problem solving		
50	Areas of surfaces of Revolution and the theorems of Pappus.	Lecture/Problem solving		
51	Double integrals,	Lecture/Problem solving		
52	Double integrals,	Lecture/Problem solving		
53	Double integrals,	Lecture/Problem solving		
54	Double integrals,	Lecture/Problem solving		
55	Areas	Lecture/Problem solving		
56	Areas	Lecture/Problem solving		
57	Areas	Lecture/Problem solving		
58	Areas	Lecture/Problem solving		
59	Double integrals in polar form,	Lecture/Problem solving		
60	Double integrals in polar form,	Lecture/Problem solving		
61	Double integrals in polar form,	Lecture/Problem solving		
62	Double integrals in polar form,	Lecture/Problem solving		
63	Triple integrals in rectangular coordinates,	Lecture/Problem solving		
64	Triple integrals in rectangular coordinates,	Lecture/Problem solving		
<b>CIA - II</b>				
65	Triple integrals in rectangular coordinates,	Lecture/Problem solving		
66	Triple integrals in rectangular coordinates,	Lecture/Problem solving		
67	Triple integrals in cylindrical and spherical coordinates,	Lecture/Problem solving		
68	Triple integrals in cylindrical and spherical coordinates,	Lecture/Problem solving		
69	Triple integrals in cylindrical and spherical coordinates,	Lecture/Problem solving		
70	Triple integrals in cylindrical and spherical coordinates,	Lecture/Problem solving		
71	substitutions in multiple integrals.	Lecture/Problem solving		

72	substitutions in multiple integrals.	Lecture/Problem solving		
73	substitutions in multiple integrals.	Lecture/Problem solving		
74	substitutions in multiple integrals.	Lecture/Problem solving		

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

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	12/9/2014	Lagrange Multiplier problems
2	15/10/2014	Area and Volume Problems

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

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
<b>1</b>	13/09/2014	Areas of surfaces of Revolution and the theorems of Pappus

**Text Books: 1. George B. Thomas Jr. ( Eleventh Edition ) – Thomas’ Calculus, Pearson, 2008. 2. Shanti Narayan and P. K. Mittal– Differential Calculus ( S. Chand & Co.) 2008.**



PROGRAMME	COMPLEMENTARY PHYSICS FOR BACHELORS OF SCIENCE IN MATHEMATICS	SEMESTER	3
COURSE TITLE	Quantum mechanics, Spectroscopy, Nuclear Physics, Basic Electronics	CREDIT	3
Theory HOURS/WEEK	3	HOURS/SEM M	54

<b>COURSE OBJECTIVES</b>	
Define the postulates of Quantum mechanics	
Explain the theorems of quantum mechanics	
Apply non relativistic quantum theory to quantum mechanical systems.	
Solve specific problems in non-relativistic quantum mechanics.	

Sessions	Teacher	Topic	Learning Resources	Remarks
1	JS	The need for quantum mechanics (QM)	Lecture + Interaction	
2	JS	Introduction to QM	Lecture + Interaction	
3	JS	Black body radiation	Lecture + Interaction	
4	JS	Black body radiation (planks quantum hypothesis)	Lecture + Interaction	
5	JS	Photoelectric effect.	Lecture + Interaction	
6	JS	de Broglie hypothesis - matter wave	Lecture + Interaction	
7	JS	Davisson - Germer experiment	Lecture + Interaction	
8	JS	uncertainty principle	Lecture + Interaction	
9	JS	Wave function – properties and normalization	Lecture + Interaction	
10	JS	Schrodinger equation stationary states	Lecture + Interaction	
11	JS	non-normalizable wavefunctions + problems	Lecture + Interaction	
12	JS	box normalization – particle in a box problem	Lecture + Interaction	
13	JS	Concept of an atom	Lecture + Interaction	
14	JS	Thomson’s model-Rutherford’s nuclear atom model	Lecture + Interaction	
15	JS	Bohr atom model description	Lecture + Interaction	
16	JS	Bohr atom model derivation of r and E	Lecture + Interaction	
17	JS	Somerfield’s relativistic atom model	Lecture + Interaction	
18	JS	Problem solving session	Lecture + Interaction	
19	C	vector atom model	Lecture + Interaction	
20	C	Fine structure of Hydrogen atom	Lecture + Interaction	
21	C	Rotational spectra of rigid diatomic molecules	Lecture + Interaction	

22	C	Vibrational spectra of rigid diatomic molecules	Lecture + Interaction.	
23	C	Raman effect - quantum theory	Lecture + Interaction.	
24	PA	Introduction of nucleus. Nuclear constituents, different nuclear types	Lecture + Interaction	
25	PA	Properties of nuclei – size, mass, charge, density	Lecture + Interaction	
26	PA	Binding energy, packing fraction, nuclear stability, spin and magnetic dipole moment, electric quadrupole moment.	Lecture + Interaction	
27	PA	Properties of nuclear forces, radioactivity, radiations and laws of radioactive decay.	Lecture + Interaction	
28	PA	Revision	Lecture + Interaction	
29	PA	Half-life, mean life, radioactivity units, radioactive series, radioactive dating, carbon dating and artificial radioactivity	Lecture + Interaction	
30	PA	Revision for first unit	Lecture + Interaction	
31	C	Semiconductors- doping- band structure	Lecture + Interaction	
32	C	PN junction	Lecture + Interaction	
33	C	Biasing	Lecture + Interaction	
34	C	Diode equation (derivation not expected)	Lecture + Interaction	
35	C	diode characteristics	Lecture + Interaction	
36	C	Zener diode	Lecture + Interaction	
37	C	Zener diode – voltage regulation	Lecture + Interaction	
38	C	diode circuits	Lecture + Interaction	
39	C	rectification- half wave	Lecture + Interaction	
40	C	full wave and bridge rectifiers	Lecture + Interaction	
41	C	transistors- different configurations	Lecture + Interaction	
42	C	Transistor characteristics	Lecture + Interaction	
43	C	biasing transistor	Lecture + Interaction	
44	C	amplifiers- feedback in amplifiers	Lecture + Interaction	
45	PA	Digital Electronics – Decimal, Binary	Lecture + Interaction	
46	PA	Octal, Hexa decimal number systems	Lecture + Interaction	

47	PA	Conversion between different number systems	Lecture + Interaction	
48	PA	Revision	Lecture + Interaction	
49	PA	Binary mathematics – addition and subtraction.	Lecture + Interaction	
50	PA	Basic theorems of Boolean algebra	Lecture + Interaction	
51	PA	DeMorgan's theorems, AND, OR, NOT, NAND gates.	Lecture + Interaction	
52	JS	Recap of quantum mechanics	Lecture + Interaction	
53	JS+PA+C	40 percent of portion	1 <sup>st</sup> CIA	
54	JS+PA+C	100 percent of portion	2 <sup>nd</sup> CIA	

JS = Jimmy Sebastian, PA = Pius Augustine, C = Celine

### INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	Before 1 <sup>st</sup> Internal	Individual- Graded – Best of 2 sets
2	Before 2 <sup>nd</sup> Internal	Individual- Graded – Best of 2 sets

**ASSIGNMENTS**– Details & Guidelines – Will be notified prior to the announcement of the assignment – marks will be scaled to 5.

**SEMINARS will be given to each student (20 mins duration) – 5 marks (CO 2, CO 3)**

### REFERENCE

1. Introduction to Modern Physics- H.S. Mani and G.K. Mehta (Affiliated East West press Pvt. Ltd)
2. Concepts of Modern Physics- A. Beiser (Tata McGraw-Hill, 5th Edn.)
3. Modern Physics- R. Murugesan (S. Chand and Co.)
4. Quantum Physics- S. Gasiorowicz ( John Wiley & Sons)
5. Basic electronics- B. L. Theraja (S. Chand and Co.)
6. Elements of electronics- M.K. Bagde, S.P. Singh and K. Singh (S. Chand andCo.)
7. Modern Physics- G.Aruldas and P.Rajagopal (PHI Pub)
8. Digital principles and applications- A. P. Malvino and P.Leach

PROGRAMME	BACHELOR OF SCIENCE (MATHEMATICS)	SEMESTER	3
COURSE TITLE	PROBABILITY DISTRIBUTIONS	CREDIT	4
HOURS/WEEK	5	HOURS/SEM	90

COURSE OBJECTIVES
Understand and apply mathematical expectations-moments,moment generating functions
Understand conditional expectation ,Cauchy Schwartz inequality
Understand the concepts of probability distributions and their properties
Understand -Normal,Standard normal and Lognormal distributions
Understand lack of memory property ,Normal distributions
Understand Tchedycheff'sinequality,Bernoulli's law of large numbers
Methods of sampling
Understand sampling distributions,standard error

SESSIO N	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
1	Bridge course	Lecture		
2	Introduction to mathematical expectation	Lecture	e-resource	
3	Mathematical Expectation-, and its properties,	Lecture		
4	Moment generating functions(m.g.f.)	PPT/Lecture		
5	Properties of Moment generating functions(m.g.f.)	PPT/Lecture		
6	Characteristic function	PPT/Lecture		
7	Conditional expectation	Lecture		
8	Cauchy Schwartz inequality	PPT/Lecture		
9	Bivariate moments,	PPT/Lecture		
10	Correlation between two random variables	Lecture		
11	Class test	Lecture		
12	Introduction to probability	Lecture		
13	Uniform distribution (Discrete )	PPT/Lecture		
14	Bernoulli Distribution	Lecture		
15	Example problems on Bernoulli distribution	PPT/Lecture		
16	Geometric distribution	Lecture		
17	Properties of Geometric distribution	Lecture		

18	Exponential distribution	Lecture		
19	characteristics	Lecture		
20	problems	Lecture		
21	Gamma distribution	PPT/Lecture		
22	Properties	PPT/Lecture		
23	problems	Lecture		
24	CIA I			
25	Beta distribution	Lecture		
26	Extra problems	PPT/Lecture		
27	Binomial distribution	PPT/Lecture		
28	Poisson distribution	PPT/Lecture		
29	Lack of memory property(LMP	Lecture	Quiz	
30	fitting of binomial distributions	PPT/Lecture		
31	Fitting problems	PPT/Lecture		
32	Fitting of Poission Distribution	PPT/Lecture		
33	Fitting problems	PPT/Lecture		
34	Normal distribution	Lecture		
35	properties	Lecture		
36	Mean , median, mode of normal	PPT/Lecture		
37	Moment generating function of normal distribution	PPT/Lecture		
38	Standard normal distribution	PPT/Lecture		
39	Fitting of Normal distribution	PPT/Lecture		
40	problems	Lecture		
41	problems	Lecture		
42	Class test			
43	Tchebycheff's inequality	PPT/Lecture		
44	Bernoulli's law of large numbers,	Lecture		
45	Weak law of large numbers	Lecture		
46	Central limit theorem (Lindberg Levy form with proof)	Lecture		
47	Limiting distributions of binomial and Poisson distributions	Lecture		
48	Methods of sampling – Simple random sampling	Lecture		
49	systematic sampling and stratified sampling	Lecture		
50	Statistic and Parameter	Lecture		
51	problems	Lecture		
52	CIA II			
53	Sampling distributions, standard error	Lecture		
54	Sampling distribution of mean and Variance	Lecture		

55	Chi-square	Lecture		
56	Properties and problems	Lecture		
57	Student's t distribution	Lecture		
58	properties	Lecture		
59	F distribution	Lecture		
60	properties	Lecture		
61	Interrelations	Lecture		
62	problems	Lecture		
63	Revision	Lecture		
64	Question paper discussion	Lecture		
65	Test paper	Lecture		

### INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

Module	Topic	Nature of Assignment
1	Mathematical expectation-Exercise	MOODLE
2	Standard distributions	MOODLE
3	Sampling distributions	WRITTEN

### REFERENCES:

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