

**SACRED HEART COLLEGE (AUTONOMOUS)**

**Department of Mathematics**

**BACHELOR OF SCIENCE**

**[MATHEMATICS]**

**Course plan**

**Academic Year 2018-19**

**Semester 1**

## PROGRAMME OUTCOMES

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

## PROGRAM SPECIFIC OUTCOMES

PSO 1	Understand the basic concepts and tools of mathematical logic, Set theory, Theory of Equations and Number Theory
PSO 2	Understand the concepts of Geometry, Trigonometry, Calculus and Analysis, Abstract structures, Algebra, Methods of proofs and Differential Equations
PSO 3	Translate real world problems into mathematical problems and find its solutions
PSO 4	Understand the application of mathematics in other science, engineering and discuss Human rights and mathematics for environmental studies

## COURSE STRUCTURE

Course Code	Title Of The Course	No. Hrs./Week	Credits	Total Hrs./Sem
U1CCENG 1	COMMUNICATION SKILLS IN ENGLISH	5	4	90
U1CCENG 2	READING LITERATURE IN ENGLISH	4	3	72

U1CCHIN1 A	PROSE AND DRAMA	4	4	72
U1CCFRN1 A	FRENCH LANGUAGE AND COMMUNICATION SKILLS I	4	4	72
U1CCSAN 1A	DRAMA ,POETRY &ALANKARA	4	4	72
U1CCMAL 1A	□□□□□□	4	4	72
U1CRMAT 1	FOUNDATIONS OF MATHEMATICS	4	3	72
U1CPPHY1	PROPERTIES OF MATTER, MECHANICS AND FOURIER ANALYSIS	4	2	72
U1CRSTAO 1	DESCRIPTIVE STATISTICS	4	3	72

### COURSE PLAN- COMMUNICATION SKILLS IN ENGLISH

<b>PROGRAMME</b>	<b>BSC MATHEMATICS</b>	<b>SEMESTER</b>	<b>1</b>
<b>COURSE CODE AND TITLE</b>	<b>15U1CCENG1: COMMUNICATION SKILLS IN ENGLISH</b>	<b>CREDIT</b>	<b>3+1</b>
<b>HOURS/WEEK</b>	<b>5</b>	<b>HOURS/SEM</b>	<b>90</b>
<b>FACULTY NAME</b>			

### COURSE OUTCOMES

CO1	Understand the mechanics of English language and comprehend the plain meaning of simple narrations, announcements and instructions.
CO2	Make inferences about the implications of statements from stress and tone recognise the various registers of speech

CO3	Listen to formal presentations and prepare lecture notes using the appropriate format.
CO4	Use English language for a variety of speaking contexts including conversations, presentations, speeches, discussions and negotiations
CO5	Critically evaluate presentations, narrations, speeches and analyse and evaluate their content and respond to them appropriately
CO6	Creatively respond to one's surroundings in the form of dramatic works, poetry, narrations, and songs, and perform them before an audience.
CO7	Understand the mechanics of English language and comprehend the plain meaning of simple narrations, announcements and instructions

Sessions	Topic	Method	COs	Remarks/Reference
1	Introduction to Communication Skills	Lecture	CO1,	
2	Phonetics: Introduction	PPT presentation	CO5,CO6,	
3	Unit 1 – Write as you speak	Audio presentation & Exercises	CO3, CO4,	
4	Unit 2 – Dip in Deep Sea	Audio presentation & Exercises	CO1, CO3,	
5	Unit 3 – Many Mad Men	Audio presentation & Exercises	CO3, CO4,	
6	Unit 4 – A Cot Caught in a Cart	Audio presentation & Exercises	CO1,CO3,	
7	Unit 5 – Look for Good Food	Audio presentation & Exercises	CO3, CO2,	
8	Unit 6 – Bad Luck, Early Worm and Unit	Audio presentation & Exercises	CO5, CO7	
9	Unit 7 - Again and Again	Audio presentation & Exercises	CO2, CO4	

10	Unit 8 – A China Clay Toy	Audio presentation & Exercises	CO1, CO3	
11	Unit 9 – Holy Cow	Audio presentation & Exercises	CO6,CO7	
12	Unit 10 – Here, There, Everywhere	Audio presentation & Exercises	CO6,CO7	
13	IAT – 1			
14	Discussion on the test paper	Discussion	CO4, CO6	
15	Unit 11 – Bzzing Bees & Hissing Snakes Unit 12 – Pleasure Ships on the sea	Audio presentation & Exercises	CO6, CO7	
16	Unit 13 – A Fine Vine Unit 14 – Thanks Brother!	Audio presentation & Exercises	CO1, CO3	
17	Unit 15 – Jane’s Chain Unit 16 – A Smiling King	Audio presentation & Exercises	CO2, CO3	
18	Unit 17 – Betty’s Bitter Butter Unit 18 – Have Your Way	Audio presentation & Exercises	CO1, CO3	
19	Unit 19 – Right Road, Light Road Revision	Audio presentation & Exercises Drill Exercises	CO1, CO3	
20	Revision Exercises	Drill Exercises	CO5,CO7	
21	Unit 20 - Pronunciation: Syllables	Lecture Session	CO2, CO6	

22	Unit 21 - Word stress 1	Audio presentation & Exercises	CO2, CO6	
23	Unit 22 - Word stress 2	Audio presentation & Exercises	CO6, CO7	
24	Unit 22 - Stress and Parts of Speech	Audio presentation & Exercises	CO4, CO5	
25	Unit 23 - Sentence Stress	Audio presentation & Exercises	CO5, CO7	
26	Holiday – SreeNarayana guru samadhi			
27	Holiday - Bakrid			
28	IAT – 2			
29	Performance Analysis _ IAT 2	Discussion	, CO5, CO7	
30	Unit 24 – Weak forms & Strong Forms Unit 25 – Contracted forms	Audio presentation & Exercises	CO2, CO3,	
31	Unit 26 – Intonation	Audio presentation & Exercises	CO1, CO7	
32	Unit 27 – Different accents	Lecture and Drill	CO2, CO3,	
33	Influence of Mother tongue	Lecture and Drill	CO2, CO4	

## ASSIGNMENTS

	<b>Topic of Assignment &amp; Nature of assignment (Individual/ Group – Written/ Presentation – Graded or Non-graded etc)</b>	<b>Course Outcome</b>
1	Write a note on your bus trip the college & present it before the class.	CO6
2	Write a descriptive note on the sights and sounds of the college canteen + presentation before the class	CO5, CO6
3	Write an interesting conversation you listened to recently and present it before the class with your partner.	CO4, CO5
4	Identify a passage from any textbook or magazine, underline a pair of consonant sounds and read the same in the class giving special emphasis to the pair of sounds chosen	CO2
5	Write a description of the Lakeview ground	CO6
6	Describe the college auditorium	CO6
7	Describe the sights and sounds in the portico of the college on any given day	CO6, CO5
8	Describe the aquarium in the portico	CO7
9	Narrate your experiences of any day on the campus	CO5

## REFERENCE

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

### Further Reading

Sl.No	Title	Author	Publisher & Year
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1	A Course in Listening and Speaking I & II	Sasikumar V.,Kiranmai Dutt and Geetha Rajeevan	New Delhi: CUP, 2007
2	Study Listening: A Course in Listening to Lectures and Note-taking	Tony Lynch	New Delhi: CUP, 2008
3	Study Speaking: A Course in Spoken English for Academic Purposes	Anderson, Kenneth, Joan Maclean and Tony Lynch	New Delhi: CUP, 2008
4	Study Reading: A Course in Reading Skills for Academic Purposes	Glendinning, Eric H. and Beverly Holmstrom	New Delhi: CUP, 2008
5	Communication Studies	Sky Massan	Palgrave Macmillan
6	Effective Communication for Arts and Humanities Students	Joan Van Emden and Lucinda Becker	Palgrave Macmillan

#### COURSE PLAN- READING LITERATURE IN ENGLISH

<b>PROGRAMME</b>	<b>BSC MATHEMATICS</b>	<b>SEMESTER</b>	<b>1</b>
<b>COURSE CODE AND TITLE</b>	<b>15U1CCENG2: READING LITERATURE IN ENGLISH</b>	<b>CREDIT</b>	<b>3</b>
<b>HOURS/WEEK</b>	<b>4</b>	<b>HOURS/SEM</b>	<b>72</b>
<b>FACULTY NAME</b>			

#### COURSE OUTCOMES

CO1	Explain the nuances of English Language through literature.
CO2	Compare the Varied parameters of English language.
CO3	Discover comprehensive ability.
CO4	Connect the efficiency of the students with realities of life.



CO5	Evaluate the beauty of literary expression.
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Sessions	Topic	Method	Course Outcome	Remarks/Reference
1	Introducing the text book	Group Discussion	CO3	
2	Bores E V Lucas	Lecture	CO2, CO3	
3	Bores E V Lucas	Lecture	CO2, CO3	
4	A Glory has Departed- Jawaharlal Nehru	Presentation by students, Listening to the speech made by Nehru.	CO1, CO3	
5	A Glory has Departed- Jawaharlal Nehru	Individual presentations	CO1, CO4	
6	Tryst with Destiny- Amartya Sen	Lecture, Discussion	CO1, CO4	
7	Tryst with Destiny- Amartya Sen	Correction of notes	CO1	
8	How to Escape from Intellectual Rubbish- Bertrand Russel	Lecture	CO3	
9	How to Escape from Intellectual Rubbish- Bertrand Russel	Lecture	CO3	
10	Sonnet XXX-William Shakespeare	Discussion on sonnets, its structure, themes	CO5, CO3	
11	Ode to a Nightingale- John Keats	Discussion on romantic poetry	CO5	
12	Ode to a Nightingale- John Keats	Discussion, Lecture	CO5	

13	Mending Wall- Robert Frost	Lecture, Discussion on relationships, barriers	CO3	
14	Mending Wall- Robert Frost	Seminar presentations	CO1, CO4	
15	First Internal Examination	Written Examination		
16	The Bicycle- David Malouf	Lecture, discussion	CO3, CO1	
17	Distribution of answer sheets	Discussion	CO3	
18	Poor Girl- Maya Angelou	Presentation by the students- discussion on gender discrimination	CO1, CO4	
19	The Mask- Kamala Suraiya	Presentation by the students	CO4	
20	Goodbye party for Miss Pushpa T S- Nissim Ezekiel	Presentation by the students	CO4, CO1	
21	Once Upon a Time- Gabriel Okara	Discussion on relationships, African culture	CO1, CO4	
22	The Lottery Ticket- Anton Pavlovich Chekhov	Role play	CO1, CO4	
23	The Lottery Ticket- Anton Pavlovich Chekhov	Presentation based on select topics	CO3, CO1	
24	Retrieved Reformation- O. Henry	Lecture, story reading, Discussion on O Henry endings	CO3, CO4	
25	Retrieved Reformation- O. Henry	Discussion	CO3	

26	A Shadow- R K Narayan	Reading- discussion – presentation by the students	CO1, CO3	
27	A Shadow- R K Narayan	Discussion of questions and answers	CO4	
28	Correction of notebooks	Discussion	CO4	
29	A Devoted Son- Anita Deasi	Lecture	CO3	
30	A Devoted Son- Anita Deasi	Discussion based on questions	CO1,CO4	
31	Two Gentlemen of Verona- A J Cronin	Presentation by students	CO4	
32	Refund- Fritz Karinthy	Role play- discussion on educational system	CO5	
33	Refund- Fritz Karinthy	Role play- discussion on educational system	CO5	
34	Lord Byron's Love Letter-Tennessee Williams	Presentation by the students	CO3	
35	Lord Byron's Love Letter-Tennessee Williams	Presentation by the students	CO3, CO1	
36	The Monkey's Paw- W.W Jacob	Presentation by the students	CO1, CO3	
37	The Monkey's Paw- W.W Jacob	Presentation by the students	CO1	
38	Second Internal Examination	Written Examination		
39	Revision		CO4	
40	Revision		CO3	

### ASSIGNMENT

	<i>Date of submission/ completion</i>	<i>Topic of Assignment&amp; Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)</i>	<i>Weightage</i>
1		Review of a book, article	5marks

### REFERENCE

Dr. Leesa Sadasivan Ed. Reading Literature in English. Foundation Books and Mahatma Gandhi University.

### COURSE PLAN- PROSE AND DRAMA

<b>PROGRAMME</b>	<b>ADDITIONAL LANGUAGE – HINDI</b>	<b>SEMESTER</b>	<b>1</b>
<b>COURSE CODE AND TITLE</b>	<b>U1CCHIN1A- PROSE AND DRAMA</b>	<b>CREDIT</b>	<b>4</b>
<b>HOURS/WEEK</b>	<b>4</b>	<b>HOURS/SEM</b>	<b>72</b>
<b>FACULTY NAME</b>	<b>DR.MINIPRIYA R (ASST.PROFESSOR) SYAMLAL M S (ASST.PROFESSOR)</b>		

### COURSE OBJECTIVES

1. To familiarize the students with various trends in Hindi literature.
2. To create an awareness of Indian Culture.
3. Analyzing various trends in Hindi Drama and get an awareness of theatre in the context of Drama.

**COURSE OUTCOMES:**

	<b>COURSE OUTCOMES</b>	<b>PO/ PSO</b>	<b>CL</b>
CO 1	Understand the Ancient Indian culture through Hindi Prose.		U, An
CO 2	Understand various trends in Hindi Prose.		U, An
CO 3	Understand the Socio – Cultural changes in literature.		U
CO 4	Understand the various trends in Hindi Drama.		U, An
CO 5	Understand Drama and develop communication skills, performance skills.		U, A

CL\* Cognitive Level

**ASSIGNMENTS**

	<b>Date of submission/ completion</b>	<b>Topic of Assignment &amp; Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)</b>	<b>Marks</b>	<b>Corse Outcomes</b>
1	Assignment(December)	Review of a lesson based on the text book and reference- Writing(Individual)	5	CO 4
2	Seminar (January-February)	Presentation on a given topic based on the text book and reference –Oral (Individual)	5	CO 2

**Additional Reading List**

1. Hindi Natak, Bachan Singh, Rajkamal Prakashan, New Delhi.

2. Adhunik Sahitya ki pravruithiyaan, Namvar Sigh, Lokbhrarati Prakashan, New Delhi.

**COURSE PLAN - FRENCH LANGUAGE AND COMMUNICATION SKILLS I**

<b>PROGRAMME</b>		<b>SEMESTER</b>	<b>1</b>
<b>COURSE CODE AND TITLE</b>	<b>19U1CCFRN1A - FRENCH LANGUAGE AND COMMUNICATION SKILLS I</b>	<b>CREDIT</b>	<b>4</b>
<b>HOURS/SEM</b>	<b>72HRS</b>		
<b>FACULTY NAME</b>	<b>DR.SHOBA LIZA JOHN</b>		

<b>COURSE OUTCOMES (COs)</b>	
1	Understand the basic concepts of French language including grammar, vocabulary and sentence structure.
2	Understand the basic communication skills necessary for living in France and French speaking countries.
3	Describe oneself and ones surroundings using a repertory of words and expressions in a simple and structured grammatical manner.
4	Develop business communication skills
5	Express an issue of concern including topics like environmental, social or health issues, enumerate its causes and consequences and suggest solutions
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
7	Understand and appreciate the history of France and Francophone countries and compare it to one's own country
8	Understand the special features of France including gastronomy, social institutions, policis, the present French scenario and compare it to one's own country

Sl.No	Session	Topic	Method of Teaching	Value Additions	CO	PO/ PSO	Cognitive Level( CL)	Knowledge Category (KC)
	01-Jan	Introducing French Basics	role play, games. Applying to	A french basic comctn	1,2,3		U	C
	2	French basics	chalk n talk	Introducing oneself	1,2,3		U	C
	3	french basics	games,music		1,2,3		U	C
	4	numbers, verbes, greetings	role play		1,2,3		U	C
	5	useful sentences in French	chalk n talk		1,2,3		A	C
	6	French culture	Discussion, ICT		6,7,8		An	C
	7	introducing a third person	game		2,3		A	C
	8	ER verbs	chalk n talk, game		2,3		U	C
	9	grammar articles	role play, listening		2,3		U	C
	10	Profession	chalk n talk		2,3		U	C
	11	French culture- french names and profession	roleplay		5,6,7 ,8		U	C
	12	explaining the objective of learning French	Discussion, ICT		5,6,7 ,8		An	C
	17	describe a locality	oral, description		2,3,		A	C
	18	places vocabulary	games,music		2,3		U	C
	19	adjectives	role play		2,3		U	C
	20	negation	chalk n talk/roleplay		2,3		U	C
	21	Describing ur ideal locality	role play/presentation		2,3		C	M,C
	22	French culture- express preference for city or village	Discussion		5,6,7 ,8		U	C

	23	Corresponding with a friend expressing one's likings	chalk n talk/Role plays		2,3		Ap	C
	24	adjectif possessif	chalk n talk		1,2,3		U	C
	25	activities and sports vocabulary	speaking/role play		1,2,3		U	C
	26	famous french personality	discussion/comprehension		5,6,7,8		An	C
	27	french music and comparison to one's own musical preference	discussion		5,6,7,8		An	C

### ASSIGNMENTS AND SEMINARS

SI No	Module	Topic	Nature of Assignment	CO
	1	preparing a list of basic vocabulary for french tourists on basic communication skills in french and malayalam	project	CO 8
	2	roleplays on various situations pertaining to daily life life		

### TEXTBOOKS AND REFERENCES

VERSION ORIGINALE 2, maison ds langues
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## COURSE PLAN- DRAMA,POETRY & ALANKARA

<b>TITLE OF THE COURSE</b>	<b>DRAMA,POETRY &amp; ALANKARA</b>
<b>SEMESTER IN WHICH THE COURSE IS TO BE TAUGHT</b>	<b>FIRST</b>
<b>NO. OF CREDITS</b>	<b>4</b>
<b>NO. OF CONTACT HOURS</b>	<b>75</b>
<b>FACULTY NAME</b>	

### COURSE OBJECTIVES

1. To make an awareness of Sanskrit literature as a poetic tradition
2. Students can understand the poetic style with special reference to classical literature
3. Students get an awareness about Indian classical poetic tradition

### COURSE OUTCOMES

CO1-The course is intended to provide students the rich Sanskrit tradition of Kavya and Drama

CO2-Through Kalidsa's kumasambava an awareness of Sanskrit literature as a poetic tradition

CO3-Students can understand the poetic style with special reference to classical literature

CO4-Students get awareness about Indian classical poetic tradition

CO5-Students familiarize the figures of speech and their usage

CO6-Students get awareness about aesthetic values

Sessions	Date	Topic	Method	Course Outcome	Remarks/ Reference
1		Introductory Session	Lecturing	CO 1	
2		Kavyas in Sanskrit Literature	Lecturing	CO 1	
3		About Panchamahakavya	Lecturing	CO 1	
4		About Kumarasambava	Lecturing	CO 1	
5		Content of kumarasambava	Lecturing	CO 1	
6		Content of kumarasambava	Lecturing	CO 1	
7		Welcoming brahmachari	Lecturing	CO 1	
8		Brahmachari's comment	Lecturing	CO 1	
9		Brahmachari's comment	writing/Lecturing	CO 1	
10		Brahmachari's comment	Writing/ Lecturing	CO 1	
11		Criticising Siva	Class Discussion	CO 1	
12		SEMINAR PRESENTATIONS		CO 5	
13		CIA -I	1hr; descriptive answers only	CO 5	
14		Introduction session	Lecturing	CO 2	
15		Bhasa's damas	Class Discussion/ Lecturing, writing	CO 2	
16		Swapnavasavadatha content	Discussion, Lecturing, writing	CO 2	
17		Swapnavasavadatha content	Lecturing	CO 2	
18		Swapnavasavadatha content	Lecturing	CO 2	

19		Swapnavasavadatha content	Lecturing	CO 2	
20		Swapnavasavadatha content	Lecturing / writing	CO 2	
21		Swapnavasavadatha content	Lecturing	CO 3	
22		Swapnavasavadatha content	Lecturing/ writing	CO 3	
23		Swapnavasavadatha content	Independent Reading/ Discussion/ Lecturing	CO 3	
24		Book Reading	Reading/	CO 3	
25		Vasavadatha	Class Discussion	CO 3	
26		Vasavadatha's missing	Lecturing	CO 3	
27		Yougandarayanna	Lecturing	CO 3	
28		King's marriage	writing//Group Discussion	CO 3	
29		Vasavadatha -servent	Lecturing/ Discussion	CO 3	
30		King's dream		CO 3	
31		Class test	Writing	CO 5	
32		Book reading	Group Discussion	CO 6	
33		Book Reading	Independent Reading/ Discussion	CO 6	
33		Critical appreciation of Swapnavasavadatha	Lecturing	CO 4	
34		Critical appreciation of Swapnavasavadatha	Lecturing	CO 4	

35		Critical appreciation of Swapnavasavadatha	Lecturing/ Group Discussion	CO 4	
36		Critical appreciation of Swapnavasavadatha	Lecturing	CO 4	
37		Critical appreciation of Swapnavasavadatha	Independent Reading/ Discussion/Lecturing	CO 4	
38		Literary aspects of Swapnavasavadattam	Lecturing/ Reading/ Discussion	CO 4	
39		Social aspects of Pratinjayaugandharayana	Lecturing/ Reading	CO 4	
40		Ecological aspects of Pratinjayaugandharayana	Lecturing /Reading	CO 4	
41		Literary aspects of Pratinjayaugandharayana	Lecturing/ Discussion/ Reading	CO 4	
42		Social aspects of Kumarasambava	Lecturing/ Reading	CO 4	
43		Ecological aspects of Kumarasambava	Discussion	CO 4	
44		Literary aspects of Kumarasambava	Lecturing	CO 4	
45		Critical appreciation of kumarasambava	Lecturing / Discussion	CO 4	
46		Critical appreciation of Swapnavasavadatha	Independent Reading/ Discussion	CO 4	
47		Critical appreciation of Swapnavasavadatha	Lecturing/ Reading	CO 4	

48		Critical appreciation of Kumarasambava	Lecturing/ Reading	CO 4	
49		Critical appreciation of Swapnavasavadatha	writing	CO 4	
50		Critical appreciation of Swapnavasavadatha	Lecturing / writing	CO 4	
51		Introduction -alankara	Lecturing	CO 4	
52		Upama	Lecturing	CO 4	
53		Ullekha	Lecturing	CO 4	
54		dvitheeyollekha	Lecturing	CO 5	
55		dipaka	Lecturing	CO 5	
56		Vyathireka	Lecturing	CO 5	
57		Aprasthuthahprashamsa	Lecturing	CO 5	
58		Swabhavokthi	Group Discussion	CO 5	
59		Drushtantha	Independent Reading/ Discussion	CO 5	
60		arthantharanyasa	Lecturing	CO 5	
61		arthantharanyasa	Discussion	CO 5	
62		Explaing with Example	Lecturing	CO 5	
63		Explaing with Example	Lecturing	CO 5	
64		Reading	Discussion	CO 5	
65		Class test	Lecturing	CO 5	
66		REVISION	Lecturing	CO 5	
67		REVISION	Questioning	CO 5	
68		SEMINAR PRESENTATIONS 1	Lecturing/ writing	CO 5	

69		SEMINAR PRESENTATIONS 2		CO 5	
70		CIA II	2hr	CO 6	
71		Discussion on the CIA II	Class Discussion	CO 6	
72		REVISION	Lecturing	CO 6	
73		REVISION	questioning	CO 6	
74		Evaluation of the Course		CO 6	
75		Question Paper Discussion	Class Discussion	CO 6	

### ASSIGNMENTS

	<b>Date of submission/completion</b>	<b>Topic of Assignment &amp; Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)</b>	<b>Weightage</b>
1		The aesthetic aspects of Kumarasambava	
2		Merits and Demerits of Bhasa's Swapnavasavadatha	

### BASIC REFERENCE

1. Bhasanatakachakram, O.R.I & Manuscript Library
2. Swapnavasavadatham, A.R Rajarajavarma
3. Kumarasambavam translation Kuttikrishna Marrar









24	Discussin of question paper	Questio ning	3,4
25	□□□□□□□□□□□□□□□□□□□□□□□□	Group Discussi on	1,3,4
26	□□□□□□□□□□□□□□□□□□□□□□□□ □□	discussi on	3,4
27	□□□□□□□□□□□□□□□□□□□□□□□□	Indepe ndent Reading /Lecturi ng	1,2,3,
28	□□□□□□□□□□	discussi on	3,4
29	□□.□□□□□□□□□□□□□□□□□□□□□□□□	Lecturi ng	2,3
30	□□□□□□□□□□□□□□□□□□	discussi on	3,4
31	□□□□□□□□□□□□□□□□□□ -□□□□□□	Lecturi ng	1,2,3,
32	□□□□-□□□□□□□□	Indepe ndent Reading /Lecturi ng	1,3,4
			2,3
33	□□□□□□□□□□□□□□	Lecturi ng	1,3,4
34	□□□□□□□□□□□□□□□□	discussi on	2,3
35	□□□□□□□□□□□- □□□□□□□□□□□□□□□□□□□□□□□□□□	Semina r	2,3

36	□□□□□□□□□□- □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□	Seminar	1,2,3,
37	□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□□□□ .	Lecturing	2,3
38	□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ .	Independent Reading /Lecturing	1,2,3,
39	□□□□□□□□□□	Group Discussion	1,2,3,
40	□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□□□□□□	Lecturing	3,4
41	□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□	Lecturing	3,4
42	□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□	Lecturing/ Discussion	3,4
43	□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□	Lecturing/ Discussion	1,2,3,
44	□□ .□□□□ .□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□	Lecturing/ Discussion	3,4
45	□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ □□□□□□□□	Lecturing/ Discussion/ Reading	3,4

46	□□□□□□□□	Group Discussion	1,3,4
47	□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□	Lecturing	2,3
48	□□□□□□□□	Group Discussion	1,3,4
49	□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ .	Lecturing/ Discussion	1,2,3,
50	Seminar presentations- Novel		3,4
51	Seminar presentations- Novel		3,4
52	Seminar presentations- Novel		3,4
53	Seminar presentations- Novel		3,4
54	Seminar presentations of shortstory		1,2,3,
55	Seminar presentations of shortstory		3,4
56	Seminar presentations of shortstory		3,4
57	Seminar presentations of shortstory		3,4
58	REVISION		3,4
59	REVISION		1,2,3,
60	Previous Question paper discussion	Discussion	
61	CIA II	2 HOURS	3,4
62	□□□□□□□□□□□□□□□□□□□□□□	Group discussion	2,3
63		Reading	3,4



**COURSE PLAN - FOUNDATIONS OF MATHEMATICS**

<b>PROGRAMME</b>	<b>BSC MATHEMATICS</b>	<b>SEMESTER</b>	<b>1</b>
<b>COURSE CODE AND TITLE</b>	<b>15U1CRMAT01-FOUNDATIONS OF MATHEMATICS</b>	<b>CREDIT</b>	<b>4</b>
<b>HOURS/WEEK</b>	<b>4</b>	<b>HOURS/SEM</b>	<b>72</b>
<b>FACULTY NAME</b>	<b>SANIL JOSE, JINESH P JOSEPH</b>		

**COURSE OUTCOMES**

CO1: To explain the fundamental ideas of sets and function

CO2: To analyze basic logic and prove statements about sets and functions

CO3: To introduce basic number theory

CO4: Comprehend various theorems in number theory

<b>Sessions</b>	<b>Topic</b>	<b>Method</b>	<b>co</b>	<b>Remarks/R eference</b>
1	Introductory Session			
2	Introduction of sets- definition examples	Interactive session	CO1	
3	Properties of sets1	Lecturing	CO1	
4	Properties of sets2		CO1	
5	Problems		CO1	
6	Set operations	Lecturing and interaction with students	CO1	

7	Problems		CO1	
8	Functions introduction examples	Group discussion	CO1	
9	Functions Operations	Group discussion	CO1	
10	Problems		CO1	
11	Tutorial		CO1	
12	Sequence & Summation Definition examples	Lecturing	CO1	
13	Problems		CO1	
14	Revision		CO1	
15	Relations Introduction	Interactive session	CO1	
16	Examples of relation		CO1	
17	Properties of relations	Lecturing	CO1	
18	Problems		CO1	
19	Tutorial		CO1	
20	n-array relations	Group discussion	CO1	
21	Examples		CO1	
22	Applications		CO1	
23	Problems		CO1	
24	Tutorial			
25	Representation of Relations	Group discussion	CO2	
26	Examples and problems		CO2	
27	Equivalence relation	Lecturing and interaction	CO2	
28	Examples		CO2	
29	Problems		CO2	
30	Partial ordering Introduction		CO2	



31	Examples		CO2	
32	Tutorial and revision		CO2	
33	Propositional logic	Interactive session	CO2	
34	Logical Operators	Lecturing	CO2	
35	Conditional Statements	Lecturing	CO2	
36	Truth tables	Lecturing	CO2	
37	Propositional Equivalences	Lecturing	CO2	
38	Predicates and Quantifiers	Lecturing	CO2	
39	Nested Quantifiers	Lecturing	CO2	
40	Rules of inference	Lecturing	CO2	
41	Introduction to Proofs	Lecturing	CO2	
42	Proof methods and strategy	Lecturing	CO2	
43	Exercise Problems		CO2	
44	Test Paper			
45	Divisibility theory in the integers	Lecturing	CO3	
46	The greatest common divisor	Problem solving	CO3	
47	The Euclidean algorithm (division algorithm)	Lecturing	CO3	
48	The Euclidean algorithm (division algorithm)	Lecturing	CO3	
49	Tutorial		CO3	
50	Primes and famous numbers	Lecturing	CO3	
51	The fundamental theorem of arithmetic	Lecturing	CO3	
52	The theory of congruence	Lecturing	CO3	

53	Basic properties of congruence	Lecturing	CO3	
54	Theorems	Lecturing	CO4	
55	Fermat's little theorem	Lecturing	CO4	
56	Wilson's theorem	Lecturing	CO4	
57	Euler's phi function	Lecturing	CO4	
58	Euler's generalization of Fermat's theorem	Lecturing	CO4	
59	Revision			
60	Test Paper			

### ASSIGNMENTS

	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)	Weightage
1	n-array relations and applications	
2	Introduction to functions and function operations	

### Textbook

1. K.H. Rosen: Discrete Mathematics and its application, Tata McGraw Hill Publishing Company, New Delhi
2. S. Bernard and J.M Child: Higher Algebra, AITBS Publishers, India, 2009

### REFERENCES :

- 1, Lipschutz: Set Theory and related topics (Second Edition), Schaum Outline Series, Tata McGraw-Hill Publishing Company, New Delhi. (Reprint 2009).

2. P.R. Halmos : Naive Set Theory, Springer.
3. Richard Johnsonbaugh – Discrete Mathematics (Pearsons )

**COURSE PLAN- PROPERTIES OF MATTER, MECHANICS AND FOURIER ANALYSIS**

<b>PROGRAMME</b>	<b>BSC MATHEMATICS</b>	<b>SEMESTER</b>	<b>1</b>
<b>COURSE CODE AND TITLE</b>	<b>U1CPPHY1: PROPERTIES OF MATTER, MECHANICS AND FOURIER ANALYSIS</b>	<b>CREDIT</b>	<b>2</b>
<b>THEORY HOURS/WEEK</b>	<b>2</b>	<b>HOURS/SEM</b>	<b>36</b>
<b>FACULTY NAME</b>	<b>DR. ROBY CHERIAN &amp;MALINI ABRAHAM</b>		

	<b>COURSE OUTCOMES</b>	<b>PO/ PSO</b>	<b>CL</b>
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	Role of Fourier analysis in Physics – Basic Introduction	PO1, PSO1	U/An

CL\* Cognitive Level

SESSION	TOPIC	LEARNING RESOURCES	COURSE OUTCOME
<b>MODULE I</b>			
1	Introduction – to Elasticity	Lect	CO 1
2	Elastic moduli	Lect	CO 1
3	Poissons ratio and class activity	Class Activity in Groups	CO 1
4	Twisting couple	Lect+PPT	CO 1
5	Determination of rigidity modulus	Lect	CO 1
6	Determination of rigidity modulus Contd	Lect	CO 1
7	Problems	Lect	CO 1
8	Static torsion	Lect	CO 1
9	Torsion pendulum	Lect	CO 1
10	Bending of beams and Cantilever	Lect	CO 1
11	Problems	Class Activity in Groups	CO 1
12	Uniform Bending	Lect	CO 1
13	Non-Uniform bending	Lect+Video	CO 1
<b>MODULE II</b>			
14	Angular velocity- angular momentum	Lect	CO 2
15	torque- conservation of angular momentum	Lect	CO 2
16	angular acceleration	Lect	CO 2
17	moment of inertia- parallel axes theorems	Lect	CO 2
18	moment of inertia - perpendicular axes theorems	Lect	CO 2
19	moment of inertia of rod, ring, disc, cylinder	Lect	CO 2
20	moment of inertia of sphere and Problem solving session	Lect + Group Activity	CO 2
21	Problem Solving Sessions	Group Activity	CO 2
22	Understanding flywheel	Lect	CO 2
<b>MODULE III</b>			
23	Periodic and oscillatory motion- simple harmonic motion	Lect	CO 3
24	differential equation- expression for displacement and its graphical representation	Lect	CO 3
	differential equation- expression for velocity and its graphical representation	Lect	CO 3
26	differential equation- expression for acceleration and its graphical representation	Lect+PPT	CO 3
27	energy of a particle executing simple harmonic motion damped oscillation – part 1	Lect+Video	CO 4
28	energy of a particle executing simple harmonic motion damped oscillation – part 2	Lect+Video	CO 3

29	energy of a particle executing simple harmonic motion forced oscillation – part 1	Lect+Video	CO 3
30	energy of a particle executing simple harmonic motion forced oscillation – part 2	Lect+Video	CO 3
31	Understanding Resonance	Lect+ Video	CO 3
32	Problems	Group Activity	CO 3
33	Fourier Series Introduction	PPT	CO 4
34	Group Assignment to analyze various wave forms	Group Activity	CO 4
35	Group Assignment to analyze various wave forms	Group Activity	CO 4
36	Group Assignment to analyze various wave forms	Group Activity	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	15/7/2018	Designing of flyovers – Role of elasticity	CO 1
2	20/8/2019	Understanding Oscillations in various daily life problems	CO2

#### GROUP ASSIGNMENTS– Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)	Course Outcome
1	3 days Class Assignment	Fourier Analysis of various functions and its applications (Group Discussion)	CO 4

#### 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.)

#### COURSE PLAN- DESCRIPTIVE STATISTICS

<b>PROGRAMME</b>	<b>BACHELOR OF MATHEMATICS</b>	<b>SEMESTER</b>	<b>1</b>
<b>COURSE CODE AND TITLE</b>	<b>U1CRSTA01 : DESCRIPTIVE STATISTICS</b>	<b>CREDIT</b>	
<b>HOURS/ WEEK</b>	<b>5</b>	<b>HOURS/SEM</b>	<b>60</b>

<b>FACULTY NAME</b>	<b>MS. DEEPTHI K DASAN</b>	
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	<b>COURSE OUTCOMES</b>	<b>PO/ PSO</b>	<b>CL</b>
CO 1	Understand different measures of central tendency, their properties and different measures of positional averages.	PO1,PO2, PO6, PSO2	U
CO 2	Understand different measures of dispersions – absolute and relative measures of dispersion.	PO1, PSO2	A
CO 3	Understand the concepts of Box plots and Lorenz curve.	PO1, PO2, PSO1	U
CO 4	Understand moments – raw and central moments – inter relations.	PO1, PO2, PSO1, PSO	An
CO 5	Understand the concepts of skewness and kurtosis, scatter diagram, curve fitting – method of least squares.	PO1, PO2, PO3, PO4, PO5, PSO2	U
CO6	Understand and apply the concepts of fitting of straight line, second degree curve, exponential curve, power curve.	PO2, PSO1, PSO2,	
CO7	Understand different types of index numbers, tests to be satisfied by the index numbers, cost of living index numbers and their constructions.	PO3, PSO2	
CO8	Understand the concepts of time series data, determination of trend, computation of seasonal indices.	PO4, PSO2	

CL\* Cognitive Level

<b>SESSION</b>	<b>TOPIC</b>	<b>LEARNING RESOURCES</b>	<b>VALUE ADDITIONS</b>	<b>COURSE OUTCOME</b>
1	Bridge course	PPT	video	CO 1
2	Bridge course	PPT/Lecture		CO 1
3	Measures of central tendency	PPT/Lecture		CO 1

4	Mean	PPT/Lecture	e-resource	CO 1
5	median	PPT/Lecture		CO 1
6	Mode	PPT/Lecture		CO 1
7	Geometric mean and Harmonic mean, problems	Lecture		CO 1
8	Absolute and relative measures of dispersion	Lecture		CO 1
9	Range, Quartile Deviation	Lecture		CO 1
10	Mean Deviation	Lecture		CO 1
11	Standard Deviation	PPT/Lecture		CO 1
12	Standard Deviation	PPT/Lecture		CO 1
13	Properties, Problems	PPT/Lecture		CO 1
14	deciles, percentiles			
15	deciles, percentiles	PPT/Lecture		CO 2
16	Coefficient of Variation	Lecture		CO 2
17	Problems graphical method	Lecture		CO 2
18	Box plots	Lecture		CO 2
19	Box plots	Lecture		CO 2
20	Quantiles –quintiles	PPT/Lecture		CO 2
21	Lorenz Curve	PPT/Lecture		CO 2
22	Revision			
23	CIA – I			
24	Index numbers	Lecture		CO 2
25	Simple and Weighted index numbers	Lecture		CO 2
26	Laspeyre's			
27	Paasche's	Lecture		CO 2
28	Bowley's	Lecture		CO 2
29	Fisher's index numbers	PPT/Lecture		CO 2
30	Test for index numbers	PPT/Lecture		CO2

31	Test for index numbers	PPT/Lecture		CO 2
32	Cost of living index numbers			
	Constructions of Cost of living index numbers			
33	Time series- Components of a time series data	PPT/Lecture		CO 3
34	Determination of trend- Moving average	PPT/Lecture		CO 3
35	curve fitting methods	PPT/Lecture		CO 3
36	Computation of and seasonal indices	Lecture	Quiz	CO 3
37	Method of simple averages	Lecture	Q & Ans Session	CO 4
38	Moments – Raw moments	PPT/Lecture		CO 4
39	Central moments	PPT/Lecture		CO 4
40	Absolute moments- Inter Relations	PPT/Lecture		CO 4
41	Skewness	PPT/Lecture		CO 4
42	Pearson, Bowley and Moment measure	Lecture		CO 4
43	Revision			
44	CIA II	PPT/Lecture		CO 4
45	Kurtosis – Moment measure of kurtosis	PPT/Lecture		CO 4
46	Kurtosis – Moment measure of kurtosis	PPT/Lecture		CO 4
47	Scatter diagram	PPT/Lecture		CO 4
48	Curve fitting	PPT/Lecture		CO 4
49	Method of least squares	PPT/Lecture		CO 4
50	fitting of a straight line	PPT/Lecture		CO 4
51	second degree curve	PPT/Lecture		CO 4



52	exponential curve	PPT/Lecture	Video	CO 4
53	power curve	PPT/Lecture		CO 4
54	exponential curve	PPT/Lecture		CO 4
55	power curve			
56	Revision			
57	Question paper detecting			

#### ASSIGNMENTS

	<b>Topic of Assignment &amp; Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)</b>	<b>Weighttage</b>
1	Introduction, Application of statistics in different fields – In Economics, Medical Field, Industries, In Business ...	5 Marks
2	Practical Sheet -1- Measures of Central tendency and Measures of Dispersion	5 Marks
3	Practical Sheet -2- Skewness and Kurtosis	5 Marks
4	Practical Sheet -3 – Using Excel Sheet	5 Marks

#### ASSIGNMENTS/EXERCISES – Details & Guidelines

1. Collection of data from medias such as Newspaper.
2. Perusal of various books available in library etc.
3. Prepration of powerpoint presentation on various topics by the students
4. Personal discussion interacting with each student about the topic

