SACRED HEART COLLEGE (AUTONOMOUS)

Tirupattur – 635 601, Tamil Nadu, S.India

Ready for Every Good Work

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A Don Bosco Institution of Higher Education, Founded in 1951 * Affiliated to Thiruvalluvar University, Vellore * Autonomous since 1987
Accredited by NAAC (4th Cycle – under RAF) with CGPA of 3.31 / 4 at 'A+' Grade

Sacred Heart College (Autonomous), Tirupattur District

1.2.1 List of New Courses

B.Sc. Mathematics

Part	Type	Subject	Paper	Hours	Credits	CIA	Sem	Total
Semester - I
I	Language	Tamil	I	5	3	30	70	100
II	Language	English	I	5	3	30	70	100
		Communicative English	I		1			
III	Main Core	Differential Calculus (MC)	I	5	5	30	70	100
III	Main Core	Algebra& Trigonometry	II	5	5	30	70	100
III	Allied	Physics	I	6	4	30	70	100
IV	FC*	Personal Skills	I	2	1	-	-	100*
IV	ET/RE*	Religion & Ethics	I	2	1	-	-	100*
		Total		**30**	**23**			
Semester - II
I	Language	Tamil	II	5	3	30	70	100
II	Language	English	II	5	3	30	70	100
		Communicative English			1			
III	Main Core	Integral Calculus (SEC)	III	5	5	30	70	100
III	Main Core	Differential Equations (MC)	IV	5	5	30	70	100
III	Allied	Physics	II	6	4	30	70	100
IV	FC*	Social Skills	II	2	1	-	-	100*

IV	ET/RT*	Ethics / Religion	II	2	1	-	-	100*
		Total		**30**	**23**			

Semester - III

I	Language	Tamil	III	5	3	30	70	100
II	Language	English	III	5	3	30	70	100
III	Main Core	Vector Calculus(SEC)	V	5	5	30	70	100
III	Main Core	Solid Geometry and Fourier Series(SEC)	VI	5	5	30	70	100
III	Allied	Chemistry	I	6	4	30	70	100
IV	FC*	Employability Skills – I	III	2	1	-	-	100*
IV	HR	Human Rights	I	2	1	-	-	100*
V		Deeds						
V		Shelters						
		Total		30	22			

*Internal Paper

Part	Type	Subject	Paper	Hours	Credits	CIA	Sem	Total
Semester - IV								
I	Language	Tamil	IV	5	3	30	70	100
II	Language	English	IV	5	3	30	70	100
III	Main Core	Numerical Methods (DSE)	VII	5	5	30	70	100
III	Main Core	Algebraic Structures - I (MC)	VIII	5	5	30	70	100
III	Allied	Chemistry	II	6	4	30	70	100
IV	FC*	Employability Skills - II	IV	2	1	-	-	100*
IV	EVS*	Environmental Science	I	2	1	-	-	100*
V		Deeds			2			
V		Shelters			2			
		Total		30	26			
Semester – V								
III	Main Core	Real Analysis – I (MC)	IX	6	6	30	70	100

III	Main Core	Algebraic Structures – II (MC)	X	6	6	30	70	100
III	Main Core	Mechanics (DSE)	XI	5	5	30	70	100
III	Main Core	Probability and Statistics (SEC)	XII	5	5	30	70	100
III	Main Elective	Number Theory (SEC) Mathematical Modeling (SEC) Graph Theory (SEC)	XIII	6	4	30	70	100
IV	NME	Mathematics for Competitive Examinations-I	I	2	1	30	70	100
VI	SSP	Mathematical Aptitude - I Mathematical Competence Course			1*			
VI	CC	Mathematical Modeling with Spreadsheet	I		2#			
		Total		**30**	**27+1*+ 2#**			
Semester – VI								
III	Main Core	Linear Algebra (DSE)	XIV	6	6	30	70	100
III	Main Core	Real Analysis – II (MC)	XV	6	6	30	70	100
III	Main Core	Complex Analysis (DSE)	XVI	6	6	30	70	100
III	Subject Skill	Resource Management Techniques (DSE)	XVII	5	4	30	70	100
III	Subject Skill	Mathematical Statistics (SEC)	XVIII	5	4	30	70	100
IV	NME	Mathematics for Competitive Examinations - II		2	1	30	70	100
VI	SSP	Mathematical Aptitude –II			1*			
VI	CC	SCILAB for Mathematical Computations	II		2#			

		Total		30	27+1*+ 2#			

*Internal Paper

Part	Course	No of Courses	Total No of Hours	Total No of Credits	Total	
I	Tamil	4	20	12	20 (12)	
II	English	4	20	12	20 (14)	
II	Communicative English	2		2		
III	Main Core	18	80	80	120 (108)	
III	Main Elective	1	6	4		
III	Subject Skills	2	10	8		
III	Allied Physics I	2	12	8		
III	Allied Chemistry II	2	12	8		
IV	Foundation Course	4	8	4	20 (10)	
	ET/RT	2	4	2		
	Environmental Science	1	2	1		
	Human Rights	1	2	1		
	Non Major Elective	2	4	2		
V	Deeds			2	2	
	Shelters			2	2	

VI	Certificate Course	2		4#	4#
	Self-Study Paper			2*	2*
	Total		**180**	**(148+2*+4#)**	**180 (148+2*+4#)**

Allied Subjects B.Sc. Maths

Year / Semester	Course	Title of the Paper	Hrs/ Week	Cre	Marks		
					CIA	SE	Total
I Year / I Sem	B.Sc., Physics	Allied Mathematics - I	6	5	30	70	100
I Year / I Semester	B.Sc., Chemistry	Allied Mathematics - I	6	5	30	70	100
I Year / I Semester	B.Sc., Computer Science	Allied Mathematics - I	6	5	30	70	100
I Year / I Semester	BCA	Mathematical Foundations – I	6	5	30	70	100
I Year / II Semester	BBA	Allied Business Statistics	6	5	30	70	100
II Year / IV Sem	B.Com	Allied Business Statistics	6	5	30	70	100
II Year / IV Sem	B.Com (CA)	Allied Business Statistics	5	3	30	70	100
I Yr / II Sem	B.Sc., Physics	Allied Mathematics - II	6	5	30	70	100

I Year / II Sem	B.Sc., Chemistry	Allied Mathematics - II	6	5	30	70	100
I Year / II Sem	B.Sc., Computer Science	Allied Mathematics - II	6	5	30	70	100
I Year / II Sem	BCA	Mathematical Foundations – II	6	5	30	70	100
I Year / I Sem	BBA	Allied Business Mathematics	6	5	30	70	100
II Year / III Sem	B.Com	Allied Business Mathematics	6	5	30	70	100
II Year / III Sem	B.Com (CA)	Allied Business Mathematics	5	3	30	70	100
II Year / III Sem	B.Sc., Biochemistry	Bio Statistics –I	6	5	30	70	100
II Year / IVSEM	B.Sc., Biochemistry	Bio Statistics -II	6	5	30	70	100

Sacred Heart College (Autonomous), Tirupattur District

1.2.1 List of New Courses

Department: B. SC. Mathematics

SYLLABUS

Year/Semester: II Year /III Semester   **Code: M314**

S. No	Course Code	Course Name
1.	M314	Solid Geometry and Fourier Series

Credits: 5   **Hours/Week: 5**

Solid Geometry and Fourier Series

Objective: To make the students understand the basic concepts in two dimensional, three dimensional geometry Fourier series and Fourier transforms and students should be able solve problems in these fields of study.

Unit – I: Plane

First degree equation - Determination of a plane – Plane perpendicular to a given direction - Planes parallel to given lines and through given points – Equation $P + \lambda P' = 0$ - Second degree homogeneous equation - Co planarity of the lines through a point - Perpendicular to a plane – positions of points with reference to a Plane – Sums .(Book 1,Chapter 3: Sections 3.1 to 3.9, 3.12)

Unit – II: Straight lines

Equation of a straight line – Conditions for various situations of a line - Angle between a plane and a line – Projection of a line – Perpendicular drawn to a line - Shortest distance between two skew lines.(Book 1,Chapter 4: Sections 4.1 to 4.6)

Unit – III: Straight lines (Continued)

Lines intersecting a given line – Lines of intersection of three planes – Equation of two given skew lines - Sums. (Book 1,Chapter 4: Sections 4.7 to 4.9, 4.11)

Unit - IV: Fourier Series

Definition- Finding Fourier coefficients for a given periodic function with period 2π-Odd and Even functions- Half range Fourier series.(Book 2 , Volume II, Chapter 2)

Unit - V: Fourier Transforms

Infinite Fourier Transforms: Fourier sine transforms- Fourier cosine transforms-Linear property-Change of scale property-Shifting property-Modulation property-Convolution and Derivative theorems-Problems.(Book-3 , Chapter 2 , Pages 158-185)

Books for Study:

- P. Duraipandian and Kayalal Pachaiyappa, Analytical Geometry 3D, Muhil Publishers, Revised Edition 2009..
- J.K. Goyal and K.P.Gupta, Laplace and Fourier Transforms, Pragati Prakashan Publishers,1995.
- S.Narayanan, R.Hanumantha Rao and T.K Manicavasagam pillay, Ancillary Mathematics S.Viswanathan (printers & publication) Pvt Ltd., 2010.

Books for Reference:

- P.K. Jain and Khalil Ahmed, Analytical Geometry of three dimensions, Wiley Eastern limited, 1991.
- M. Pillai & others, Analytical Geometry, part II 3D, S.Viswanathan & co, Chennai, 1984.

E-learning Source: http://mathworld.wolfram.com