



SEETHALAKSHMI RAMASWAMI COLLEGE

(Autonomous)

Affiliated to Bharathidasan University
Tiruchirappalli

Accredited with A+ by NAAC (4th Cycle)



M.Sc. Physics

Revised CBCS - OBE Based Curriculum Structure

(For Students admitted from 2024 onwards)

SEM	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	INT/ EXT	CIA	SE	TOTAL
I	Core course-I		Classical Mechanics and Relativity	6	5	EXT	25	75	100
	Core course-II		Mathematical Physics	6	5	EXT	25	75	100
	Core course-III		Condensed Matter Physics	6	5	EXT	25	75	100
	Core Practical-I		Practical-I : General Experiments and Programming in C++	3	-	-	-	-	-
	Core Practical-II		Practical-II : Electronics Experiments	3	-	-	-	-	-
	MBE-I		Analog and Digital Electronics	6	4	EXT	25	75	100
			Total credits and marks		30	19			
II	Core course-IV		Quantum Mechanics-I	6	5	EXT	25	75	100
	Core course-V		Statistical Mechanics	6	5	EXT	25	75	100
	Core Practical-I		Practical-I : General Experiments and Programming in C++	3	4	EXT	40	60	100
	Core Practical-II		Practical-II : Electronics Experiments	3	4	EXT	40	60	100
	MBE-II		Numerical Methods and Programming in C++	6	4	EXT	25	75	100
	NME		OFFERED TO OTHER DEPARTMENTS	6	4	EXT	25	75	100
			Total credits and marks		30	26			

	EXTRA CREDIT COURSE		COMMUNITY OUTREACH ACTIVITY (during I Semester vacation- Report, Photo & Feedback from beneficiaries) (MANDATORY)		1	INT			100
SEM	COURSE		COURSE TITLE	HRS	CRD	INT/EXT	INT	EXT	TOTAL
III	Core course-VI		Electromagnetic Theory	6	5	EXT	25	75	100
	Core course-VII		Quantum Mechanics-II	6	5	EXT	25	75	100
	Core course-VIII		Atomic and Molecular Spectroscopy	6	5	EXT	25	75	100
	Core Practical-III		Practical-III : Advanced Experiments	3	-	-	-	-	-
	Core Practical-IV		Practical-IV : Digital Electronics and Microprocessor Experiments	3	-	-	-	-	-
	MBE-III		Microprocessor and Microcontroller	6	4	EXT	25	75	100
			Total credits and marks	30	19				400
	EXTRA CREDIT COURSE		INTERNSHIP-I (during II Semester vacation) Both online/offline certificate, Report & Photo (MANDATORY)		2	INT			100
	EXTRA CREDIT COURSE		VALUE ADDED COURSE- RESEARCH METHODOLOGY offered to the same department -Beyond class hours (MANDATORY)	2	2	INT	25	75	100
	EXTRA CREDIT COURSE		ONLINE COURSE(MOOC/SWAYAM/NPTEL)- Before III Semester (OPTIONAL)	-	2	INT	-	-	100
IV	Core course-IX		Nuclear and Particle Physics	6	5	EXT	25	75	100
	Core course-X		Crystal Growth, Thin Films and Nanomaterials	6	5	EXT	25	75	100
	Industry Based course		A) Communication Electronics	6	4	EXT	25	75	100

		B) Solar Energy and its Utilization (Optional)							
Core Practical-III		Practical-III : Advanced Experiments	3	4	EXT	40	60	100	
Core Practical-IV		Practical-IV : Digital Electronics and Microprocessor Experiments	3	4	EXT	40	60	100	
Project		Project	6	4	EXT	20	80	100	
		Total credits and marks	30	26				600	
		GRAND TOTAL	120	90				2000	
EXTRA CREDIT COURSE		CERTIFICATE COURSE-ASTROPHYSICS(IKS) offered to other departments (beyond class hours) (MANDATORY)	2	2	INT	25	75	100	
EXTRA CREDIT COURSE		INTERNSHIP-II (during III Semester vacation) Both online/offline certificate, Report & Photo (OPTIONAL)	-	2	INT	-	-	100	

NON MAJOR ELECTIVE COURSE OFFERED BY THE DEPARTMENT TO OTHER DEPARTMENT STUDENTS

II	NME		Modern Communication Systems	6	4	EXT	25	75	100
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LIST OF MAJOR BASED ELECTIVE COURSES

MBE	SEMESTER	TITLE OF THE COURSE
I	I	A) Analog and Digital Electronics B) Non-Destructive Testing (Optional)
II	II	A) Numerical Methods and Programming in C++ B) Ultrasonic Study (Optional)
III	III	A) Microprocessor and Microcontroller B) Mathematical Analysis (Optional)

VALUE ADDED COURSE										
SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	EXT/INT	CIA	SE	TOTAL
III		VAC		Research Methodology	2	2	INT	25	75	100

CERTIFICATE COURSE (IKS)										
SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	EXT/INT	CIA	SE	TOTAL
IV		CC (IKS)		Astrophysics	2	2	INT	25	75	100

TOTAL DISTRIBUTION OF HOURS, CREDITS & MARKS FOR PG PROGRAMME			
SEMESTER	HOURS	CREDITS	TOTAL MARKS
I	30	19	400
II	30	26	600
III	30	19	400
IV	30	26	600
TOTAL	120	90	2000

SUBJECT	NO. OF COURSES	HOURS	CREDIT
CORE COURSE THEORY	10	60	50
CORE PRACTICAL	4	24	16
MBE	3	18	12
ENTREPRENEURSHIP/INDUSTRY BASED COURSE	1	6	4
NME	1	6	4
PROJECT	1	6	4
TOTAL	20	120	90

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EXTRA CREDIT COURSES FOR SKILL DEVELOPMENT*

EXTRA CREDIT COURSES

SUBJECT	Common/Subject Specific	NO. OF COURSES	CREDIT
COMMUNITY OUTREACH ACTIVITY (During I semester vacation)(MANDATORY)	Subject Specific	1	1
INTERNSHIP-I (During II semester vacation)(MANDATORY)	Subject Specific	2	4
INTERNSHIP-II (During III semester vacation) (OPTIONAL)	Subject Specific	1	2
ONLINE COURSE MOOC/SWAYAM/NPTEL (OPTIONAL)	Subject Specific	1	2
VALUE ADDED COURSE(MANDATORY)	Subject Specific	1	2
CERTIFICATE COURSE (IKS) (MANDATORY)	Subject Specific (offered to other Departments)	1	2
TOTAL		6	11

*The extra credit courses have been introduced in the OBE-CBCS Curriculum pattern to be implemented from 2024 onwards based on the recommendations of the apex bodies namely TANSICHE, UGC, Bharathidasan University (Parent University),NAAC in lieu to the National Education Policy.

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EXTRA CREDIT COURSES FOR SKILL DEVELOPMENT

SEM	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	INT/ EXT	CIA	SE	TOT
II	EXTRA CREDIT COURSES		Community Outreach activity (I Semester vacation) – Report, Photo & Feedback from beneficiaries (MANDATORY)	-	1	INT	-	-	100
III			Internship – I - (II Semester vacation) Online/Offline - Certificate, Report & Photo (MANDATORY)	-	2	INT	-	-	100
III			Value Added Course – Offered to the same department – (beyond Class hours) (MANDATORY)	2	2	INT	25	75	100
III			Online Course(MOOC/SWAYAM/NPTEL) – Before III Semester (OPTIONAL)	-	2	INT	-	-	100
IV			Internship –II (III Semester vacation) - Online/Offline -Certificate, Report & Photo (OPTIONAL)	-	2	INT	-	-	100
IV			Certificate Course (IKS) – offered to other departments(beyond class hours) (MANDATORY)	2	2	INT	25	75	100
				TOTAL		11			

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MANDATORY EXTRA CREDIT COURSES FOR SKILL DEVELOPMENT

SEM	COURSE CODE	COURSE TITLE	HRS	CRD	INT/ EXT	CIA	SE	TOT
II		Community Outreach activity (I Semester vacation) – Report, Photo & Feedback from beneficiaries	-	1	INT	-	-	100
III		Internship – I - (II Semester vacation) Online/Offline - Certificate, Report & Photo	-	2	INT	-	-	100
III		Value Added Course – Offered to the same department – (beyond Class hours)	2	2	INT	25	75	100
IV		Certificate Course (IKS) – offered to other departments(beyond class hours)	2	2	INT	25	75	100
		TOTAL NO OF COURSES 4	4	7				400

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OPTIONAL EXTRA CREDIT COURSES FOR SKILL DEVELOPMENT

SEM	COURSE CODE	COURSE TITLE	HRS	CRD	INT/ EXT	CIA	SE	TOT
III		Online Course(MOOC/SWAYAM/NPTEL) – Before III Semester	-	2	INT	-	-	100
IV		Internship –II (III Semester vacation) - Online/Offline -Certificate, Report & Photo	-	2	INT	-	-	100
		TOTAL NO OF COURSES 2		4				200