



SEETHALAKSHMI RAMASWAMI COLLEGE

(Autonomous)

Affiliated to Bharathidasan University
Tiruchirappalli

Accredited with A+ by NAAC (4th Cycle)



B.Sc., Physics

CBCS - OBE Curriculum Structure

(For students admitted from 2024 onwards)

SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	EXT/INT	CIA	SE	TOTAL
I	I	Language-I		Course-I	6	3	EXT	25	75	100
	II	English-I		Course-I	6	3	EXT	25	75	100
	III	Core Course-I		Properties of Matter and Acoustics	7	6	EXT	25	75	100
	III	Core Practical-I		Practical-I: Properties of Matter, Heat and Acoustics Experiments	3	-	INT	-	-	-
	III	First Allied Course-I		Offered by the Department of Chemistry	4	3	EXT	25	75	100
	III	First Allied Practical		Offered by the Department of Chemistry	2	-	INT	-	-	-
	IV	VBE		Value Based Education	2	2	EXT	25	75	100
	TOTAL					30	17			
		EXTRA CREDIT COURSE		Communication and Functional English offered by Department of English (MANDATORY)	2	2	INT	25	75	100
SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	EXT/INT	CIA	SE	TOTAL
	I	Language-II		Course-II	6	3	EXT	25	75	100

II	II	English–II		Course–II	6	3	EXT	25	75	100
	III	Core Course–II		Heat and Thermodynamics	7	6	EXT	25	75	100
	III	Core Practical–I		Practical-I:Properties of Matter,Heat and Acoustics Experiments	3	4	INT	40	60	100
	III	First Allied Course–II		Offered by the Department of Chemistry	4	3	EXT	25	75	100
	III	First Allied Practical		Practical:Offered by the Department of Chemistry	2	3	INT	40	60	100
	IV	EVS		Environmental Studies	2	2	EXT	25	75	100
	TOTAL					30	24			
SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	EXT/INT	CIA	SE	TOTAL
III	I	Language–III		Course–III	6	3	EXT	25	75	100
	II	English–III		Course–III	6	3	EXT	25	75	100
	III	Core Course - III		Electricity and Magnetism	6	6	EXT	25	75	100
	III	Core Practical–II		Practical–II:Electricity and Magnetism Experiments	2	-	INT	-	-	-
	III	Second Allied Course–I		Offered by the Department of Mathematics	4	3	EXT	25	75	100
	III	Second Allied Practical		Practical:Offered by the Department of Mathematics	2	-	INT	-	-	-
	IV	NME–I*		Energy Harvesting and Renewable Energy Resources	2	2	EXT	25	75	100
	IV	SBE–I		Instrumentation	2	2	EXT	25	75	100
TOTAL					30	19				600

		EXTRA CREDIT COURSE		Internship-I -(II Semester vacation)Both Online/Offline Certificate, Report & Photo (MANDATORY)	-	1	INT	-	-	100	
				Community Outreach Activity (II Semester vacation – Report, Photo & Feedback) (OPTIONAL)	-	1	INT	-	-	100	
SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	EXT/INT	CIA	SE	TOTAL	
IV	I	Language-IV		Course-IV	6	3	EXT	25	75	100	
	II	English-IV		Course-IV	6	3	EXT	25	75	100	
	III	Core Course-IV		Mechanics and Relativity	6	6	EXT	25	75	100	
	III	Core Practical-II		Practical-II:Electricity and Magnetism Experiments	2	4	INT	40	60	100	
	III	Second Allied Course-II		Offered by the Department of Mathematics	4	3	EXT	25	75	100	
	III	Second Allied Practical		Practical:Offered by the Department of Mathematics	2	3	INT	40	60	100	
	IV	NME-II*		Medical Physics	2	2	EXT	25	75	100	
	IV	SBE-II		Troubleshooting Electronic Equipment	2	2	EXT	25	75	100	
	TOTAL					30	26				800
			EXTRA CREDIT COURSE		Certificate Course (IKS)-Indian Scientists and their Inventions Offered to other Dept. students out of class Hours (MANDATORY)	2	2	INT	25	75	100
				Office Automation (MANDATORY)	2	2	INT	25	75	100	
				Internship-II (III Semester vacation) - Both Online/Offline Certificate, Report & Photo (OPTIONAL)	-	1	INT	-	-	100	
* Offered by the Department to the students of other disciplines											
SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	EXT/INT	CIA	SE	TOTAL	
	III	Core Course-V		Modern Optics	5	5	EXT	25	75	100	
	III	Core Course-VI		Atomic Physics and Spectroscopy	5	5	EXT	25	75	100	

V	III	Core Course–VII		Solid State Physics	5	5	EXT	25	75	100	
	III	Core Practical–III		Practical–III:General and Basic Electronics Experiments	6	4	INT	40	60	100	
	III	MBE–I		Basic Electronics	5	4	EXT	25	75	100	
	IV	SBE–III		C Programming in Physics	2	2	EXT	25	75	100	
	IV	SSD		Soft Skill Development	2	2	INT	25	75	100	
	TOTAL					30	27				700
			EXTRA CREDIT COURSE		Web Designing (MANDATORY)	2	2	INT	25	75	100
					Value Added Course –Physics for Competitive Exams offered to our students – Out of class Hrs. (MANDATORY)	2	2	INT	25	75	100
					Online Course(MOOC/Swayam/ NPTEL) – Before V th Semester (OPTIONAL)	-	2	INT	-	-	100
					Internship–III (IV Semester vacation) – Both Online/Offline Certificate, Report & Photo (OPTIONAL)	-	1	INT	-	-	100
SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	EXT/ I NT	CIA	SE	TOTAL	
VI	III	Core Course–VIII		Basic Quantum Mechanics	5	5	EXT	25	75	100	
	III	Core Course–IX		Nuclear Physics	5	5	EXT	25	75	100	
	III	Core Practical–IV		Practical–IV:General and Digital Electronics Experiments	6	4	INT	40	60	100	
	III	MBE–II		Digital Electronics	5	4	EXT	25	75	100	
	III	MBE–III		Microprocessor 8085 and its Applications	5	4	EXT	25	75	100	
	III	Project		Group project	3	3	EXT	20	80	100	

	V	GS		Gender Studies	1	1	INT	25	75	100
	V	Extension		Extension Activities (NSS/NCC/YRC/Sports and Exnora)	-	1	INT	--	--	100
				TOTAL	30	27				800
				GRAND TOTAL	180	140				4100
		EXTRA CREDIT COURSE		Capacity Building for Enhancing Professional Skills –Offered by the Dept. – 15 Hrs. Duration – for a week (2Hrs./Day) (MANDATORY)	2	2	INT	--	--	100
				Internet Concepts (MANDATORY)	2	2	INT	25	75	100

TOTAL DISTRIBUTION OF HOURS, CREDITS & MARKS FOR UG			
SEMESTER	HOURS	CREDITS	TOTALMARKS
I	30	17	500
II	30	24	700
III	30	19	600
IV	30	26	800
V	30	27	700
VI	30	27	800
TOTAL	180	140	4100

NON MAJOR ELECTIVES Offered by the Department to other Department Students

SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	EXT/INT	CIA	SE	TOTAL
III	IV	NME-I*		Energy Harvesting and Renewable Energy Resources	2	2	EXT	25	75	100
IV	IV	NME-II*		Medical Physics	2	2	EXT	25	75	100

Allied Offered by the Department to other Department Students-Chemistry and Mathematics

SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	EXT/INT	CIA	SE	TOTAL
I	III	First Allied Course-I		Foundation Physics-I	4	3	EXT	25	75	100
II	III	First Allied Course-II		Foundation Physics-II	4	3	EXT	25	75	100
II	III	First Allied Practical		Practical: Foundation Physics Experiments	2	3	INT	40	60	100

Allied Offered by the Department to other Department Students-Computer Science

SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	EXT/INT	CIA	SE	TOTAL
I	III	First Allied Course-I		Applied Physics-I	4	3	EXT	25	75	100
II	III	First Allied Course-II		Applied Physics-II	4	3	EXT	25	75	100
II	III	First Allied Practical		Practical:Applied Physics Experiments	2	3	INT	40	60	100

Optional Courses

LIST OF MAJOR BASED ELECTIVE COURSES

SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	EXT/INT	CIA	SE	TOTAL
V	III	MBE-I		A) Basic Electronics B) Mathematical Physics(Optional)	5	4	EXT	25	75	100
VI	III	MBE-II		A) Digital Electronics B) Embedded System(Optional)	5	4	EXT	25	75	100
VI	III	MBE-III		A) Microprocessor 8085 and its Applications B) Statistical Physics(Optional)	5	4	EXT	25	75	100

LIST OF SKILL BASED ELECTIVE COURSES										
SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	EXT/INT	CIA	SE	TOTAL
III	IV	SBE-I		A) Instrumentation B) Weather Forecasting (Optional)	2	2	EXT	25	75	100
IV	IV	SBE-II		A) Troubleshooting Electronic Equipment B) Acoustics (Optional)	2	2	EXT	25	75	100
V	IV	SBE-III		A) C Programming in Physics B) Biophysics (Optional)	2	2	EXT	25	75	100

VALUE ADDED COURSE										
SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	EXT/INT	CIA	SE	TOTAL
V		VAC		Physics for Competitive Exams	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)		Indian Scientists and their Inventions	2	2	INT	25	75	100

B.Sc., Physics (CBCS System)
(For Students admitted from June 2024 onwards)

PART	Subject	Number of Courses	Hours	Credit
I	Language	4	24	12
II	English	4	24	12
III	Core Course(4*6=24)+(5*5=25)	9	51	49
	Core Practical	4	22	16
	Allied Course	4	16	12
	Allied Practical	2	8	6
	Major Based Elective	3	15	12
	Group Project	1	3	3
IV	Skill Based Course	3	6	6
	Non Major Elective	2	4	4
	Value Based Education	1	2	2
	Environmental Studies	1	2	2
	Soft Skill Development	1	2	2
V	Gender Studies	1	1	1
	Extension Activities	1	-	1
	Total	41	180	140

**B.Sc. Physics
(CBCS System)**

(For Students admitted from June 2024 onwards)

EXTRA CREDIT COURSES FOR SKILL DEVELOPMENT*

Subject	Common/Subject Specific	Number of Courses	Credits
**Office Automation (MANDATORY)	Common to All	1	2
**Web Designing (MANDATORY)	Common to All	1	2
**Internet Concepts (MANDATORY)	Common to All	1	2
**Online Course (MOOC/SWAYAM/NPTEL) (OPTIONAL)	Subject Specific	1	2
Communicative and Functional English (MANDATORY)	Common to All	1	2
Community outreach activity (OPTIONAL)	Subject Specific	1	1
Certificate Course (IKS - Indian Knowledge System) (MANDATORY)	Subject Specific (offered to other departments)	1	2
Value Added Course (MANDATORY)	Subject Specific	1	2
Internship – I To be completed during II Semester Vacation (MANDATORY) Internship – II & III (OPTIONAL)	Subject Specific	3	3
Capacity Building for Enhancing Professional Skills (MANDATORY)	50% Common to All (Placement Training) 50% Subject Specific (Career Guidance Workshop by the respective Departments)	1	2
TOTAL		12	20

*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 TANSCHÉ, UGC, Bharathidasan University (Parent University), NAAC in lieu of the National Education Policy.

**B.Sc. Physics
(CBCS System)**

MANDATORY EXTRA CREDIT COURSE FOR SKILL DEVELOPMENT*

SEM	COURSE CODE	COURSE TITLE	HRS	CRD	INT/EXT	CIA	SE	TOT
I		Communicative and Functional English offered by Department of English	2	2	INT	25	75	100
III		Internship – I - (II Semester vacation) Online/Offline - Certificate, Report & Photo	-	1	INT	-	-	100
IV		Certificate Course (IKS) – Offered to other Department (beyond class hours)	2	2	INT	25	75	100
IV		Office Automation	2	2	INT	25	75	100
V		Value Added Course – Offered to the same department (beyond class hours)	2	2	INT	25	75	100
V		Web Designing	2	2	INT	25	75	100
VI		Capacity Building for Enhancing Professional Skills – Offered by the Department	2	2	INT	-	-	100
VI		Internet Concepts	2	2	INT	25	75	100
		TOTAL NO OF COURSES 8	14	15				800

B.Sc. Physics
(CBCS System)
OPTIONAL EXTRA CREDIT COURSE FOR SKILL DEVELOPMENT*

SEM	COURSE CODE	COURSE TITLE	HRS	CRD	INT/EXT	CIA	SE	TOT
III		Community outreach activity (II Semester vacation – Report, Photo & Feedback)	-	1	INT	-	-	100
IV		Internship – II (III Semester vacation) - Online/Offline -Certificate, Report & Photo	-	1	INT	-	-	100
V		Internship – III (IV Semester vacation) – Online/Offline - Certificate, Report & Photo	-	1	INT	-	-	100
V		Online – Course (MOOC/Swayam/NPTEL) – Before V Semester	-	2	INT	-	-	100
		TOTAL NO OF COURSES 4		5				400