#### SEETHALAKSHMI RAMASWAMI COLLEGE



#### (Autonomous)

#### Affiliated to Bharathidasan University Tiruchirappalli

Accredited with A+ by NAAC (4<sup>th</sup>Cycle)



## B.Sc. Chemistry CBCS-OBE-LOCF Curriculum Structure

(For students admitted from 2024 onwards)

SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	INT/ EXT	CIA	SE	TOT
	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		Inorganic, Organic and Physical Chemistry-I	7	5	EXT	25	75	100
	III	Core Practical-I		Practical-I:Volumetric Analysis	3	-	INT	-	-	_
	III	First Allied Course-I		Offered by the Department of Physics	4	3	EXT	25	75	100
	III	First Allied Practical		Offered by the Department of Physics	2	-	INT	-	-	-
I	IV	VBE		Value Based Education	2	2	EXT	25	75	100
				Total	30	16				500
	I	Language-II		Course-II	6	3	EXT	25	75	100
	II	English-II		Course-II	6	3	EXT	25	75	100
	III	Core Course-II		Inorganic, Organic and Physical Chemistry-II	7	6	EXT	25	75	100
II	III	Core Practical-I		Practical-I:Volumetric Analysis	3	4	INT	40	60	100
11	III	First Allied Course-II		Offered by the Department of Physics	4	3	EXT	25	75	100
	III	First Allied Practical		Offered by the Department of Physics	2	3	INT	40	60	100
	IV	EVS		Environmental Studies	2	2	EXT	25	75	100
				Total	30	24				700
		EXTRA CREDIT COURSE		Communicative and Functional English offered by Department of English (MANDATORY)	2	2	INT	25	75	100

SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	INT/ EXT	CIA	SE	тот
	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		Inorganic, Organic and Physical Chemistry-III	6	6	EXT	25	75	100
***	III	Core Practical-II		Practical-II:Semimicro Analysis	2	-	INT	-	-	-
III	III	Second Allied Course-I		Offered by the Department of Mathematics/Botany	4+2 / 4	3	EXT	25	75	100
	III	Second Allied Practical		Offered by the Department of Botany	2	-	INT	-	-	-
	IV	NME-I*		Offered by other Departments	2	2	EXT	25	75	100
	IV	SBE-I		Chemistry of Commercial products	2	2	EXT	25	75	100
				Total	30	19				600
		EXTRA CREDIT COURSE		Internship-I(II Semester vacation) 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	INT/ EXT	CIA	SE	тот
	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		Inorganic, Organic and Physical Chemistry-IV	6	6	EXT	25	75	100
	III	Core Practical-II		Practical-II:Semimicro Analysis	2	4	INT	40	60	100
	III	Second Allied Course-II		Offered by the Department of Mathematics/Botany	4	3	EXT	25	75	100
	Practical of Mathematics/Botany			Offered by the Department of Mathematics/Botany	2/2	3/3	INT	40	60	100
	IV	NME-II*		Offered by other Departments	2	2	EXT	25	75	100
IV	IV	SBE-II		Phytochemistry	2	2	EXT	25	75	100
				Total	30	26				800
				Certificate Course (IKS)-						
				Offered by other	2	2	INT	25	75	100
				Departments (beyond class	2	2	INI	23	/3	100
		EXTRA CREDIT		hours) (MANDATORY)						
		COURSE		Office Automation	2	2	INIT	25	75	100
		COCKSE		(MANDATORY)	2	2	INT	25	75	100
				Internship-II(III Semester						
				vacation) Online/Offline		1	INIT			100
				-Certificate, Report &	-	1	INT	25 40 25 40 25	-	100
				Photo (OPTIONAL)						
* Off	ered by	* Offered by the Department to the students of other disciplines								

SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	INT/ EXT	CIA	SE	тот	
	III	Core Course-V		Inorganic Chemistry	5	5	EXT	25	75	100	
	III	Core Course-VI		Organic Chemistry-I	5	5	EXT	25	75	100	
	III	Core Course-VII		Physical Chemistry-I	5	5	EXT	25	75	100	
	III	Core Practical-III		Practical-III:Gravimetric							
				Estimation and Organic	6	5	INT	40	60	100	
				Analysis							
	III	MBE-I		C and C++ Languages in	5	4	EXT	25	75	100	
				Chemistry				_			
	IV	SBE-III		Polymer Chemistry	2	2	EXT	25	75	100	
	IV	SSD		Soft Skill Development	2	2	INT	25	75	100	
			Total	30	28				700		
$\mathbf{v}$			Value Added Course-								
V				Offered to the same	2	2	2	INT	25	75	100
				department (beyond class			2	1111	2.5		100
				hours) (MANDATORY)							
				Web Designing	2	2	INT	25	75	100	
				(MANDATORY)	2	<u> </u>	1111	23	73	100	
		EXTRA CREDIT		Internship-III (IV Semester							
		COURSE		vacation) Online/Offline-	_	1	INT	_	_	100	
				Certificate, Report &	-	1	1111	_	_	100	
				Photo (OPTIONAL)							
				Online Course (MOOC/							
				Swayam / NPTEL)- <b>Before V</b>	-	2	INT	-	-	100	
				Semester (OPTIONAL)							

SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	INT/ EXT	CIA	SE	тот
	III	Core Course-VIII		Organic Chemistry-II	5	5	EXT	25	75	100
	III	Core Course-IX		Physical Chemistry-II	5	5	EXT	25	75	100
	III	Core Practical-IV		Practical-IV:Experimental						
				Techniques in Physical	6	4	INT	40	60	100
				Chemistry						
	III	III MBE-II		Selected Topics in	5	4	EXT	25	75	100
				Inorganic Chemistry	3		127.1	23	75	100
	III	MBE-III		Biochemistry/	5	4	EXT	25	75	100
				Pharmaceutical Chemistry						
	III	Project		Group project	3	3	EXT	20	80	100
	V GS		Gender Studies	1	1	INT	25	75	100	
VI	V	Extension		Extension Activities						
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				(NSS/NCC/YRC/Sports	-	1	INT	-	-	100
				and Exnora)						
				Total	30	27				800
				Grand Total	180	140				4100
				Capacity Building for						
				Enhancing Professional						
				Skills-Offered by the	2	2	INT	-	-	100
				Department						
		EXTRA CREDIT		(MANDATORY)						
	COURSE			Internet Concepts						
			(MANDATORY)	2	2	INT	25	75	100	

TOTAL DIS	TRIBUTION OF HOU	RS, CREDITS & MA	ARKS FOR UG PROGRAMME
SEMESTER	HOURS	CREDITS	TOTAL MARKS
I	30	16	500
II	30	24	700
III	30	19	600
IV	30	26	800
V	30	28	700
VI	30	27	800
TOTAL	180	140	4100

#### ALLIED COURSES OFFERED TO OTHER DEPARTMENTS

#### For Botany & Zoology Majors

SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	INT/EXT	CIA	SE	тот
I	III	First Allied Course-I		Chemistry for Biologists-I	4	3	EXT	25	75	100
II	III	First Allied Course-II		Chemistry for Biologists-II	4	3	EXT	25	75	100
II	III	First Allied Practical		Practical:Volumetric analysis and Simple experimental techniques in Chemistry	2+2	3	INT	40	60	100

### For Home Science Major

SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	INT/EXT	CIA	SE	тот
I	III	First Allied Course-I		General Chemistry-I	4	3	EXT	25	75	100
II	III	First Allied Course-II		General Chemistry-II	4	3	EXT	25	75	100
II	III	First Allied Practical		Practical:Titrimetric and Analytical techniques in Chemistry	2+2	3	INT	40	60	100

#### For Physics Major

SEM	PART	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	INT/EXT	CIA	SE	тот
Ι	III	First Allied Course-I		Chemistry for Physicists-I	4	3	EXT	25	75	100
II	III	First Allied Course-II		Chemistry for Physicists-II	4	3	EXT	25	75	100
II	III	First Allied Practical		Practical:Volumetric and Analytical Experiments	2+2	3	INT	40	60	100

#### LIST OF MAJOR BASED ELECTIVE COURSES

SEM	GROUP	COURSE CODE	COURSE TITLE
V	I (Choose any one course)		(A) C and C++ Languages in Chemistry (B) Essential Topics in Chemistry (Optional)
VI	II (Choose any one course)		(A) Selected Topics in Inorganic Chemistry (B) Basics of Nano Chemistry (Optional)
	III (Choose any one course)		(A) Biochemistry (B) Pharmaceutical Chemistry

#### LIST OF SKILL BASED ELECTIVE COURSES

SEM	GROUP	COURSE CODE	COURSE TITLE
III	I (Choose any one course)		<ul><li>(A) Chemistry of Commercial products</li><li>(B) Dyeing Techniques and Water Treatment (Optional)</li></ul>
IV	II (Choose any one course)		(A) Phyto chemistry (B) Forensic Science (Optional)
V	III (Choose any one course)		(A) Polymer Chemistry (B) Selected Topics in Chemistry (Optional)

#### NON MAJOR ELECTIVE COURSES OFFERED TO OTHER DEPARTMENTS

SEM	COURSE	COURSE CODE	COURSE TITLE
III	I		Material Chemistry
IV	II		Role of Chemistry in Daily Life

#### **VALUE ADDED COURSE**

Extra Credit Course for Skill Development

SEM	COURSE	COURSE CODE	COURSE TITLE
V	I		Chemistry for Competitive Examinations

#### CERTIFICATE COURSE OFFERED TO OTHER DEPARTMENTS

Extra Credit Course for Skill Development

SEM	COURSE	COURSE CODE	COURSE TITLE
IV	I		Chemistry of Metals and Dyes in Ancient and Modern India

#### SEETHALAKSHMI RAMASWAMI COLLEGE (Autonomous)

## Affiliated to Bharathidasan University TIRUCHIRAPPALLI – 620 002

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#### B.Sc. Chemistry (CBCS System) (For Students admitted from June 2024 onwards)

Subject	Number of	Hours	Credit		
	Courses				
Language	4	24	12		
English	4	24	12		
Core Course $(6x5=30)+(3x6=18)$	9	51	48		
Core Practical $(3x4=12)+(1x5=5)$	4	22	17		
Allied Course:	4	16	12		
Physics					
Botany/Mathematics					
Allied Practical:	2	8	6		
Physics					
Botany/Mathematics					
Major Based Elective Course (3x4)	3	15	12		
Skill Based Elective Course	3 6		6		
Non Major Elective Course	2	4	4		
Value Based Education	1	2	2		
Environmental Studies	1	2	2		
Soft Skill Development	1	2	2		
Gender Studies	1	1	1		
Extension Activities	1		1		
Group Project	1	3	3		
Total	41	180	140		

## **B.Sc.** Chemistry (CBCS System)

(For Students admitted from June 2024 onwards)

#### EXTRA CREDIT COURSES FOR SKILL DEVELOPMENT\*

Subject	Common/Subject	Number of Courses	Credit	
	Specific			
**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	1	2	
	(offered to other			
	departments)			
Value Added Course (MANDATORY)	Subject Specific	1	2	
Internship-I To be completed during II Semester Vacation (MANDATORY)	Subject Specific	3	3	
Internship-II & III (OPTIONAL)	Subject Specific	3	3	
Capacity Building for Enhancing Professional Skills (MANDATORY)	50%Common to All	1	2	
	(Placement Training)	_	_	
	50% Subject Specific			
	(Career Guidance			
	workshop by the			
	respective			
	Departments)			
TOTAL		12	20	

<sup>\*</sup>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 TANSCHE, UGC, Bharathidasan University (Parent University), NAAC in lieu of the National Education Policy.

<sup>\*\*</sup>Courses with Credit Transfer provision

# B.Sc. Chemistry (CBCS System) EXTRA CREDIT COURSE FOR SKILL DEVELOPMENT

SEM	COURSE	COURSE CODE	COURSE TITLE	HRS	CRD	INT/ EXT	CIA	SE	тот
II			Communicative and Functional English offered by Department of English(MANDATORY)	2	2	INT	25	75	100
III			Community Outreach Activity (II Semester vacation-Report, Photo & Feedback) (OPTIONAL)	-	1	INT	-	1	100
III			Internship-I(II Semester vacation)- Online/Offline-Certificate, Report & Photo (MANDATORY)	-	1	INT	-	-	100
IV			Certificate Course (IKS)-Offered to other Department (beyond class hours) (MANDATORY)	2	2	INT	25	75	100
IV	EXTRA		Internship-II(III Semester vacation)- Online/Offline-Certificate, Report & Photo (OPTIONAL)	-	1	INT	-	-	100
IV	CREDIT		Office Automation (MANDATORY)	2	2	INT	25	75	100
V	COURSES		Value Added Course-Offered to the same department(beyond class hours) (MANDATORY)	2	2	INT	25	75	100
V			Internship-III(IV Semester vacation)- Online/Offline-Certificate, Report & Photo (OPTIONAL)	-	1	INT	-	-	100
V			Web Designing (MANDATORY)	2	2	INT	25	75	100
V			Online Course(MOOC/Swayam/NPTEL)-Before V Semester (OPTIONAL)	-	2	INT	-	-	100
VI			Capacity Building for Enhancing Professional Skills-Offered by the Department (MANDATORY)	2	2	INT	-	-	100
VI			Internet Concepts(MANDATORY)	2	2	INT	25	75	100
			TOTAL		20				1200

B.Sc. Chemistry
(CBCS System)
MANDATORY EXTRA CREDIT COURSE FOR SKILL DEVELOPMENT

SEM	COURSE CODE	COURSE TITLE	HRS	CRD	INT/ EXT	CIA	SE	тот
II		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 <b>Department (beyond class hours)</b>	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 NUMBER OF COURSES 8	14	15				800

# B.Sc. Chemistry (CBCS System) OPTIONAL EXTRA CREDIT COURSE FOR SKILL DEVELOPMENT\*

SEM	COURSE CODE	COURSE TITLE	HRS	CRD	INT/ EXT	CIA	SE	тот
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 NUMBER OF COURSES 4		5				400