



SEETHALAKSHMI RAMASWAMI COLLEGE
(AUTONOMOUS)
AFFILIATED TO BHARATHIDASAN UNIVERSITY
TIRUCHIRAPPALLI
Accredited with A+ by NAAC (4th Cycle)



SYLLABUS

CBCS-OBE-LOCF based Curriculum Structure



PG AND RESEARCH DEPARTMENT OF CHEMISTRY

PG PROGRAMME

(2024 onwards)

Guidelines for PG Curriculum Revision 2024-2025

The revised CBCS-OBE-LOCF Curriculum pattern for the Postgraduate programme to be implemented from 2024 onwards, is based on the recommendations of the apex bodies namely **TANSCHÉ, UGC, Bharathidasan University (Parent University) and NAAC in lieu of the National Education Policy.**

- As per the norms of UGC and Bharathidasan University, the sum total credits for PG programme is **90**.
- An **Entrepreneurship/Industry** based course has been introduced to develop self employability skills.
- Apart from 90 credits, **6 extra credit courses** have been introduced with the **total credits of 11**, in order to promote diversified skills among students.
- Students are given the provision of completing **one Online Course as an optional course** (MOOC/SWAYAM/NPTEL) for strengthening the domain specific knowledge.
- One **Community Outreach Activity** is to be carried out by each student (**mandatory**) to inculcate commitment towards society and to fulfil the social responsibility of the institution.
- A 30 hour **Certificate Course** on “**Indian Knowledge System**” has been introduced as a **mandatory** course to familiarize India’s knowledge contribution to the major disciplines, to fall in line with the **National Education Policy**.
- A discipline specific **Value Added Course** has been introduced as a **mandatory** course as per **TANSCHÉ** requirements.
- Two Internships (2 credit each) are introduced of which Internship – I (at the II Semester vacation) is made **mandatory** for every student of PG programme to enhance the employability and entrepreneurship skills.



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M.Sc. CHEMISTRY
Revised CBCS-OBE-LOCF 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		Organic Chemistry-I	6	5	EXT	25	75	100
	Core Course-II		Physical Chemistry-I	6	6	EXT	25	75	100
	MBE-I		Research Methodology, Molecular Modeling and Analytical Techniques	6	4	EXT	25	75	100
	Core Practical-I		Practical-I:Inorganic Mixture Analysis, Colorimetric Estimation and Complex Preparation	3	-	-	-	-	-
	Core Practical-II		Practical-II:Quantitative Estimations of Mixture of Metal Ions	3	-	-	-	-	-
	Core Practical-III		Practical-III:Organic Mixture Analysis and Single Stage Preparation	3	-	-	-	-	-
	Core Practical-IV		Practical-IV:Organic Quantitative Analysis and Double Stage Preparation	3	-	-	-	-	-
			Total	30	15				300

II	Core Course-III		Inorganic Chemistry-I	6	5	EXT	25	75	100
	Core Course-IV		Physical Methods in Chemistry-I	6	5	EXT	25	75	100
	Core Practical-I		Practical-I:Inorganic Mixture Analysis, Colorimetric Estimation and Complex Preparation	3	4	EXT	40	60	100
	Core Practical-II		Practical-II:Quantitative Estimations of Mixture of Metal Ions	3	4	EXT	40	60	100
	Core Practical-III		Practical-III:Organic Mixture Analysis and Single Stage Preparation	3	4	EXT	40	60	100
	Core Practical-IV		Practical-IV:Organic Quantitative Analysis and Double Stage Preparation	3	4	EXT	40	60	100
	NME		Offered by other Departments	6	4	EXT	25	75	100
			Total	30	30				700
	Extra Credit Course		Community Outreach Activity (during I Semester vacation-Report, Photo & Feedback from beneficiaries) (MANDATORY)	-	1	INT	100	-	100

III	Core Course-V		Organic Chemistry-II	6	5	EXT	25	75	100
	Core Course-VI		Physical Chemistry-II	6	6	EXT	25	75	100
	Core Course-VII		Physical Methods in Chemistry-II	6	5	EXT	25	75	100
	Core Practical-V		Practical-V:Non Electrical Experiments in Physical Chemistry	6	4	EXT	40	60	100
	Core Practical-VI		Practical-VI:Electrical Experiments in Physical Chemistry	6	4	EXT	40	60	100
			Total	30	24				500
	Extra Credit Course		Value Added Course-offered to the same department (beyond class hours) (MANDATORY)	2	2	INT	25	75	100
			Internship-I (during II Semester vacation) online/offline-certificate, Report & Photo (MANDATORY)	-	2	INT	-	-	100
			MOOC/SWAYAM/NPTEL-Before III Semester (OPTIONAL)	-	2	INT	-	-	100

IV	Core Course-VIII		Inorganic Chemistry-II	6	5	EXT	25	75	100
	MBE-II		Catalysis, Photokinetics and Nanoscience	6	4	EXT	25	75	100
	MBE-III		Chemistry of Supramolecules and Natural Products	6	4	EXT	25	75	100
	Industry Based Course		Medicinal Chemistry	6	4	EXT	25	75	100
	Project		Project	6	4	EXT	20	80	100
			Total	30	21				500
			Grand Total	120	90				2000
	Extra Credit Course		Certificate Course (IKS) offered by other departments (beyond class hours) (MANDATORY)	2	2	INT	25	75	100
			Internship-II (during III Semester vacation) online/offline-certificate, Report & Photo (OPTIONAL)	-	2	INT	-	-	100

TOTAL DISTRIBUTION OF HOURS, CREDITS & MARKS FOR PG PROGRAMME

SEMESTER	HOURS	CREDITS	TOTAL MARKS
I	30	15	300
II	30	30	700
III	30	24	500
IV	30	21	500
TOTAL	120	90	2000

LIST OF MAJOR BASED ELECTIVE COURSES

SEM	GROUP	COURSE CODE	COURSE TITLE
I	I (Choose any one course)		(A) Research Methodology, Molecular Modeling and Analytical Techniques (B) Chemistry of Nano science and Nanotechnology (Optional)
IV	II (Choose any two courses)		(A) Catalysis, Photokinetics and Nanoscience (B) Applied Electrochemistry (Optional) (C) Chemistry of Supramolecules and Natural products (D) Green Chemistry (Optional)

INDUSTRY BASED COURSE

SEM	COURSE CODE	COURSE TITLE
IV		(A) Medicinal Chemistry (B) Fundamentals of Analytical Techniques, Sensors and Clinical equipments (Optional)

NON MAJOR ELECTIVE COURSE OFFERED TO OTHER DEPARTMENTS

SEM	GROUP	COURSE CODE	COURSE TITLE
II	I		Agricultural and Industrial Chemistry

VALUE ADDED COURSE*Extra Credit Course for Skill Development*

SEM	COURSE	COURSE CODE	COURSE TITLE
III	I		Advanced Topics in Chemistry and Teaching Skills

CERTIFICATE COURSE OFFERED TO OTHER DEPARTMENTS*Extra Credit Course for Skill Development*

SEM	COURSE	COURSE CODE	COURSE TITLE
IV	I		Agro Based Industries

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M.Sc. Chemistry
(CBCS System)

(For Students admitted from June 2024 onwards)

SUBJECT	NO. OF COURSES	HOURS	CREDIT
CORE COURSE (6X5 =30) + (2X6=12)	8	48	42
CORE PRACTICAL (6X4=24)	6	36	24
MBE	3	18	12
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) Internship-II(During III semester vacation) (OPTIONAL)	Subject Specific	2	4
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 **TANSCHÉ, UGC, Bharathidasan University (Parent University), NAAC in lieu of 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	-	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				600

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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	-	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 NUMBER 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 NUMBER OF COURSES 2		4				200