DEPARTMENT OF CHEMISTRY
HOLY CROSS COLLEGE (Autonomous), NAGERCOIL.

(Affiliated to Manonmaniam Sundaranar University, Tirunelveli.
Nationally Re-Accredited with A+ grade by NAAC (CGPA 3.35))
Kanyakumari District, Tamil Nadu, India.

Board of studies meeting on 29-05-2023 at 10.00 am

Members

Dr. M. Anitha Malbi	-	Chair person
Dr. V. Jeyabal	-	University nominee, Associate Professor in Chemistry St. Xavier's College, Palayamkottai-627002.
Dr. A. Rose Venis	-	Subject Expert, Associate Professor in Chemistry St. Joseph's College of Arts and Science, Trichy.
Dr. S. Betsy Bai	-	Subject Expert, Assistant Professor in Chemistry S. T. Hindu College, Nagercoil.
Ms. A Snow Havi Thev	-	Alumni
Mr. G. M. Srinivasan	-	Industrialist, Managing Director, Petro chemical technologist, Galileovasan Offshore & Research Development Pvt. Ltd. Nagapattinam. 611602
Dr. R. Gladis Latha	-	Member
Sr. K. Francy	-	Member
Dr. S. Ajith Sinthuja	-	Member
Ms. L. DevaVijila	-	Member
Dr. Sheeba Daniel	-	Member
Dr. Y. Christabel Shaji	-	Member
Dr. S. Lizy Roselet	-	Member
Dr. M. Shirly Treasa	-	Member
Dr. B.T. Delma	-	Member
Dr. M. Antilin Princela	-	Member

Agenda

1. Prayer
2. Welcome by the Chairperson
3. Reading of the minutes of the previous meeting and approval
4. Approval of UG and PG School of Physical Sciences
5. Restructuring and Revision of Curriculum for UG and PG
6. Approval of syllabus for B.Sc and M.Sc Chemistry for Semesters I & II
7. Ratification of UG and PG Curriculum (2020-23)
8. Approval of syllabus for Value-added Courses
9. Classification of Courses as Employability/ Entrepreneurship/ Skill Development
10. Classification of Courses as Local/ /National/ Regional/Global
11. Classification of Courses as Cross cutting issues
12. Classification of Courses as Core Industry 4.0
13. Recommendation of books and journals
14. Suggestions for innovative teaching and evaluation techniques for UG and PG
15. Suggestions on conducting seminars
16. New measures to be undertaken by the department
17. Next meeting of BOS

Minutes of the Board of Studies meeting of the Department of Chemistry held on 29-05-2023 at 10.00 am

The board of studies meeting commenced with invoking God's blessings by Dr. Sr. K. Francy. The members of the board, the Chairperson, Subject experts, Industrialist, Alumni and the faculty of the department were present for the meeting.

Chairperson's Address

The Chairperson and the Head of the Department, Dr. M. Anitha Malbi, welcomed the members and introduced them while briefing the agenda. The following items in the agenda were discussed by the members of the board.

Item 01/BOS 2023.29/03: Approval of the Minutes of the Meeting held on 30.11.2021

Dr. R. Gladis Latha read the minutes of the previous meeting which was approved by the board members.

Item 02/BOS 2023.29/04: Approval of the School of Physical Sciences

Item 03/BOS 2023.29/05: Restructuring and Revision of Curriculum for UG

TNSCHE syllabus with prime focus on LOCF with CBCS is implemented. LOCF is an initiative to create positive improvement in the Higher Education which aims to equip students with knowledge, skills, values, attitudes, leadership readiness/ qualities and life-long learning.

Course Structure

Distribution of Hours and Credits

Curricular Courses

Course	S I	S II	S III	S IV	S V	S VI	Total	
							Hours	Credits
Part I –Language	6 (3)	6 (3)	6 (3)	6 (3)	-	-	24	12
Part II-English	6 (3)	6 (3)	6 (3)	6 (3)	-	-	24	12
Part-III								
Core Course	5(5)	5(5)	5(5)	5(5)	5 (4) + 5 (4) + 5 (4) +	6 (5) + 6 (4) + 6 (4) +	75	64
Core Lab Course	3(3)	3(3)	3(3)	3(3)	-	5 (3)		
Core Project					5 (4)			

Elective /Discipline Specific Elective Courses	4 (3) 2(2)	4(3) 2(2)	4 (3) 2(2)	4(3) 2(2)	4 (3) 4(3)	5 (3)	37	29
Part IV								
Non-major Elective Course	2 (2)	2 (2)	-	-	-	-	4	4
Skill Enhancement Course	-	2 (2)	1 (1) 2 (2)	1 (1) 2 (2)	-		8	8
Foundation Course	2(2)	-	-	-	-	-	2	2
Value Education	-	-	-	-	2 (2)	-	2	2
Summer Internship /Industrial Training					(2)			2
Environmental studies	-	-	1	1 (2)	-	-	2	2
Extension activity	-	-	-	-	-	(1)	-	1
Professional Competency Skill						2 (2)	2	2
Total	**30 (23)**	**30 (23)**	**30 (22)**	**30 (24)**	**30 (26)**	**30 (22)**	**180**	**140**

Co-curricular Courses

Course	**S I**	**S II**	**S III**	**S IV**	**S V**	**S VI**	**Total**
LST (Life Skill Training)	-	(1)	-	(1)			2
Skill Development Training (Certificate Course)	(1)						1
Field Project		(1)					1
Specific Value-added Course	(1)		(1)				2
Generic Value-added Course				(1)		(1)	2
MOOC		(1)		(1)		(1)	3
Student Training Activity: Clubs & Committees / NSS				(1)			1
Community Engagement Activity: RUN				(1)			1
Human Rights Education					(1)		1
Gender Equity Studies						(1)	1
Total							**15**

Total number of Compulsory Credits = Academic credits + Non-academic credits: 140 + 15

Courses Offered

Semester I

Course	Course Code	Title of the Course	Credits	Hours/Week
Part I	TU231TL1 FU231FL1	Language: Tamil French	3	6
Part II	EU231EL1	English	3	6
Part III	CU231CC1	Core Course I: General Chemistry – I	5	5
	CU231CP1	Core Lab Course I: Quantitative Inorganic estimation (titrimetry) and Inorganic Preparations	3	3
	CU231EC1	Elective Course I: Chemistry for Biological Sciences – I	3	4
	CU231EP1	Elective Lab Course I : Chemistry Practical for Biological Sciences-Volumetric Analysis	2	2
Part IV	CU231NM1	Non Major Elective NME I: Food Chemistry	2	2
	CU231FC1	Foundation Course: Basics of Chemistry	2	2
Total			**23**	**30**

Semester II

Course	Course Code	Title of the Course	Credits	Hours/Week
Part I	TU232TL1 FU232FL1	Language: Tamil French	3	6
Part II	EU232EL1	English	3	6
Part III	CU232CC1	Core Course II: General Chemistry – II	5	5
	CU232CP1	Core Lab Course II: Organic Estimation and Preparation of Organic Compounds	3	3
	CU232EC1	Elective Course II: Chemistry for Biological Sciences – II	3	4
	CU232EP1	Elective Lab Course II: Chemistry Practical for Physical and Biological Sciences	2	2
Part IV	CU232NM1	Non Major Elective NME II: Cosmetics and Personal Grooming	2	2
	CU232SE1	Skill Enhancement Course SEC I: Dairy Chemistry	2	2
Total			**23**	**30**

Semester III

Course	Course Code	Title of the Course	Credits	Hours/Week
Part I	TU233TL1 FU233FL1	Language: Tamil French	3	6
Part II	EU233EL1	English	3	6
Part III	CU233CC1	Core Course III: General Chemistry – III	5	5
	CU233CP1	Core Lab Course III: Qualitative Inorganic Analysis	3	3
	CU233EC1	Elective Course III: Chemistry for Physical Sciences – I	3	4
	CU233EP1	Elective Lab Course III: Chemistry Practical for Physical and Biological Sciences	2	2
Part IV	CU233SE1	Skill Enhancement Course SEC-II: (Entrepreneurial Skills):	1	1
	CU233SE2	Skill Enhancement Course SEC-III	2	2
	UG234EV1	Environmental Studies	-	1
Total			**22**	**30**

Semester IV

Course	Course Code	Title of the Course	Credits	Hours/Week
Part I	TU234TL1 FU234FL1	Language: Tamil French	3	6
Part II	EU234EL1	English	3	6
Part III	CU234CC1	Core Course IV: General Chemistry –IV	5	5
	CU234CP1	Core Lab Course IV: Physical Chemistry Practical I	3	3
	CU234EC1	Elective Course IV: Chemistry for Physical Sciences II	3	4
	CU234EP1	Elective Lab Course IV: Chemistry Practical for Physical and Biological Sciences	2	2
Part IV	CU234SE1	Skill Enhancement Course SEC-IV:	1	1
	CU234SE2	Skill Enhancement Course SEC-V :	2	2
	UG234EV1	Environmental Studies	2	1
Total			**24**	**30**

Semester V

Course	Course Code	Title of the Course	Credits	Hours/Week
Part III	CU235CC1	Core Course V: Organic Chemistry - I	4	5
	CU235CC2	Core Course VI: Inorganic Chemistry - I	4	5
	CU235CC3	Core Course VII: Physical Chemistry -I	4	5
	CU235PW1	Core Project	4	5
	CU235DE1	Discipline Specific Elective I: a) Biochemistry	3	4
	CU235DE2	Discipline Specific Elective I: b) Polymer Chemistry		
	CU235DE3	Discipline Specific Elective I: c) Rubber Technology		
	CU235DE4	Discipline Specific Elective II: a) Industrial Chemistry	3	4
	CU235DE5	Discipline Specific Elective II: b) Applied Chemistry		
	CU235DE6	Discipline Specific Elective II: c) Forensic Chemistry		
Part IV	CU235VE1	Value Education	2	2
	CU235SI1 / CU235IT1	Summer Internship/Industrial Training	2	-
Total			**26**	**30**

Semester VI

Course	Course Code	Title of the Course	Credits	Hours/Week
Part III	CU236CC1	Core Course VIII: Organic Chemistry -II	5	6
	CU236CC2	Core Course IX: Inorganic Chemistry-II	4	6
	CU236CC3	Core Course X: Physical Chemistry -II	4	6
	CU236CP1	Core Lab Course V: Physical Chemistry Practical II	3	5
	CU236DE1	Discipline Specific Elective III: a) Fundamentals of Spectroscopy	3	5
	CU236DE2	Discipline Specific Elective III: b) Fundamentals of organic Spectroscopy		
	CU236DE3	Discipline Specific Elective III: c) Fundamentals of inorganic Spectroscopy		
Part IV	CU236EA1	Extension Activity	1	-
	CU236PS1	Professional Competency Skill: Naan Mudhalvan: Employability Readiness (Competitive Exam)	2	2
Total			**22**	**30**
TOTAL			**140**	**180**

M.Sc Chemistry

Distribution of Hours and Credits

Course	SEMESTER				Total	
	I	II	III	IV	Hours	Credits
Core– Theory	7(5) + 7(5)	6(5)+ 6 (5)	6 (5) + 6 (5) + 6 (5)	6 (5) + 6 (5)	74	57
Core Practical	6 (4)	6 (4)	6 (4)			
Elective Course	5 (3) + 5 (3)	4 (3) + 4 (3)	3 (3) -	4(3)	16 9	12 6
Core Project	-	-	-	10 (7)	10	7
Skill Enhancement Course	-	4 (2)	3 (2)	4 (2)	11	6
Internship/ Industrial Activity	-	-	(2)		-	2
Extension Activity	-	-		(1)	-	1
Total	**30 (20)**	**30 (22)**	**30 (26)**	**30 (23)**	**120**	**91**

Total Number of Hours = **120**

Co-curricular Courses

Course	SEMESTER				Total
	I	II	III	IV	Credits
Life Skill Training –I	-	(1)	-	-	1
Life Skill Training –II	-	-	-	(1)	1
Field Project	-	(1)	-		1
Specific Value-Added Courses	(1)		(1)		2
Generic Value-Added Courses		(1)		(1)	2
MOOC		(1)		(1)	2
Community Engagement Activity (UBA)		(1)			1

Total Number of Credits = **91+10**

Non- academic courses are mandatory and conducted outside the regular working hours.

Courses Offered
Semester I

Course Code	Title of the Course	Hours / Week	Credits
CP231CC1	Core Course I: Organic Reaction Mechanism – I	7	5
CP231CC2	Core Course II: Structure and Bonding in Inorganic compounds	7	5
CP231CP1	Core Lab Course I: Organic Chemistry Practical	6	4
CP231EC1	Elective Course I a)Nano Materials and Nano Technology	5	3
CP231EC2	Elective Course I b) Pharmaceutical Chemistry		
CP231EC3	Elective Course I c)Analytical Chemistry		
CP231EC4	Elective Course II a) Electrochemistry	5	3
CP231EC5	Elective Course II: b) Molecular Spectroscopy		
CP231EC6	Elective Course II: c)Industrial Products		
	Total	**30**	**20**

Semester II

Course Code	Title of the Course	Hours / Week	Credits
CP232CC1	Core Course III: Organic Reaction Mechanism-II	6	5
CP232CC2	Core Course IV: Physical Chemistry-I	6	5
CP232CP1	Core Lab Course II: Inorganic Chemistry Practical	6 (3+3)	4 (2+2)
CP232EC1	Elective CourseIII: a) Medicinal Chemistry	4	3
CP232EC2	Elective CourseIII: b) Green Chemistry		
CP232EC3	Elective CourseIII: c)Transition Metal Chemistry		
CP232EC4	Elective Course IV: a)Bio Inorganic Chemistry	4	3
CP232EC5	Elective Course IV: b) Material Science		
CP232EC6	Elective Course IV: c) Organometallic Chemistry		
CP232SE1	Skill Enhancement Course I	4	2

	Health Science		
	Total	**30**	**22**

Semester III

Course Code	Title of the Course	Hours / Week	Credits
CP233CC1	Core Course V: Organic Synthesis and Photochemistry	6	5
CP233CC2	Core Course VI: Coordination Chemistry-I	6	5
CP233CP1	Core Lab Course III: Physical Chemistry	6	5
CP233CP2	Core Lab Course IV: Analytical Instrumentation Technique Practicals	6	4
CP233EC1	Elective Course V: a) Pharmacognosy and Phytochemistry	3	3
CP233EC2	Elective Course V: b) Biomolecules and Heterocyclic compounds		
CP233EC3	Elective Course V: c) Surface Chemistry and Catalysis		
CP233SE1	Skill Enhancement Course II Professional Communication	3	2
CP233IS1	Internship/ Industrial Activity	-	2
	Total	**30**	**26**

Semester IV

Course Code	Title of the Course	Hours / Week	Credits
CP234CC1	Core Course VII: Coordination Chemistry-II	6	5
CP234CC2	Core Course VIII: Physical Chemistry-II	6	5
CP234EC1	Elective Course VI: a) Chemistry of Natural products	4	3
CP234EC2	Elective Course VI: b) Polymer Chemistry		
CP234EC3	Elective Course VI: c) Applied Organic Chemistry		
P234PW1	Core Project	10	7
CP234SE1	Skill Enhancement Course III Chemistry for Advanced Research Studies	4	2
CP234EA1	Extension Activity	-	1
	Total	**30**	**23**
	TOTAL	**120**	**91**

Specific Value added Course
UG

S. No.	Course code	Title of the course	Credits	Total hours
1	CU231V01	Articles in Every Day Life	1	30

PG

S. No.	Course code	Title of the course	Credits	Total hours
1	**CP231V01**	**Herbal Product Development and Formulation**	1	30

Item 04/BOS 2023.29/06: Approval of syllabus for B.Sc Chemistry for Semesters I & II

The BoS members approved the courses for I and II semesters of the UG programme

Approval of syllabus for M.Sc Chemistry for Semesters I & II.

The BoS members approved the courses in I and II semesters for PG programme.

Item 04a/BoS 2023.29/06: Approval of PEOs, POs, PSOs and COs and the Syllabi of UG programme

The BoS members approved the PEOs, POs, PSOs and COs after discussion for the courses in Semester I and Semester II for UG programme.

Programme Educational Objectives (PEOs)

PEOs	Upon completion of B.A/B.Sc. Degree Programme, the graduates will be able to	Mapping with Mission
PEO 1	apply appropriate theory and scientific knowledge to participate in activities that support humanity and economic development nationally and globally, developing as leaders in their fields of expertise.	M1& M2
PEO 2	use practical knowledge for developing professional empowerment and entrepreneurship and societal services.	M2, M3, M4 & M5
PEO 3	pursue lifelong learning and continuous improvement of the knowledge and skills with the highest professional and ethical standards.	M3, M4, M5 & M6

Programme Outcomes (POs)

POs	Upon completion of B.Sc. Degree Programme, the graduates will be able to:	Mapping with PEOs
PO1	obtain comprehensive knowledge and skills to pursue higher studies in the relevant field of science.	PEO1
PO2	create innovative ideas to enhance entrepreneurial skills for economic independence.	PEO2
PO3	reflect upon green initiatives and take responsible steps to build a sustainable environment.	PEO2
PO4	enhance leadership qualities, team spirit and communication skills to face challenging competitive examinations for a better developmental career.	PEO1 & PEO3
PO5	communicate effectively and collaborate successfully with peers to become competent professionals.	PEO2 & PEO3
PO6	absorb ethical, moral and social values in personal and social life leading to highly cultured and civilized personality	PEO2 & PEO3
PO7	participate in learning activities throughout life, through self-paced and self-directed learning to improve knowledge and skills.	PEO1 & PEO3

Programme Specific Outcomes (PSOs)

PSOs	Upon completion of B.Sc Chemistry programme, the graduates will be able to:	Mapping with POs
PSO - 1	understand the fundamentals, theories and principles of organic, inorganic and physical chemistry.	PO1
PSO - 2	analyze physical and chemical properties of chemical compounds and their uses.	PO1& PO7
PSO - 3	interpret the mechanism of various chemical reactions.	PO3 &PO4
PSO - 4	synthesize organic and inorganic compounds using classical and modern methods.	PO2
PSO - 5	design and carry out scientific experiments, record and interpret the results with accuracy	PO1 & PO4
PSO - 6	use concepts, tools and techniques related to chemistry to other branches of science.	PO5
PSO - 7	develop skills in the safe-handling of chemicals and their usage in day today life.	PO1&PO7
PSO - 8	develop entrepreneurial skills, empowered to fulfil the professional requirement and become self-dependent.	PO2 & PO6

Item 14a/BoS 2023.29/16: Approval of PEOs, POs, PSOs and COs and the Syllabi of PG programme

The BoS members approved the PEOs, POs, PSOs and COs after discussion for the courses in Semester I and Semester II for PG programme.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEOs	Upon completion of M. Sc. Chemistry Programme, the graduates will be able to:	Mapping with Mission
PEO1	apply scientific and computational technology to solve social and ecological issues and pursue research.	M1, M2
PEO2	continue to learn and advance their career in industry both in private and public sectors.	M4 & M5
PEO3	develop leadership, teamwork, and professional abilities to become a more cultured and civilized person and to tackle the challenges in serving the country.	M2, M5 & M6

PROGRAMME OUTCOMES (POs)

POs	Upon completion of M.Sc. Chemistry Programme, the graduates will be able to:	Mapping with PEOs
PO1	apply their knowledge, analyze complex problems, think independently, formulate and perform quality research.	PEO1 & PEO2
PO2	carry out internship programmes and research projects to develop scientific and innovative ideas through effective communication.	PEO1, PEO2 & PEO3
PO3	develop a multidisciplinary perspective and contribute to the knowledge capital of the globe.	PEO2
PO4	develop innovative initiatives to sustain eco-friendly environment	PEO1, PEO2
PO5	through active career, team work and using managerial skills guide people to the right destination in a smooth and efficient way.	PEO2
PO6	employ appropriate analysis tools and ICT in a range of learning scenarios, demonstrating the capacity to find, assess, and apply relevant information sources.	PEO1, PEO2 & PEO3
PO7	learn independently for lifelong executing professional, social and ethical responsibilities leading to sustainable development.	PEO3

Programme Specific Outcomes (PSOs)

PSO	Upon completion of M.Sc Chemistry programme, the graduates will be able to:	Mapping with POs
PSO-1	impart in-depth knowledge about various aspects of chemistry within an environment committed to excellence	PO1
PSO-2	develop critical thinking, technical skills and innovative ideas in analysing and solving problems in the field of chemistry	PO2, PO3
PSO-3	explore and expedite the recent avenues in chemistry research across the globe with professional competency	PO4
PSO-4	inculcate positive approach towards environment and ecology from the chemistry perspective	PO4, PO7
PSO-5	promote entrepreneurial skills and become self-reliant	PO5, PO6

Item 05/BOS 2023.29/07: Ratification of UG Curriculum (2020-23)

- Students should take up an internship programme for 25 hrs. at the end of semester III or IV.
- Students should take up an internship programme for 25 hrs. at the end of semester V.

Ratification of PG Curriculum (2020-23)

- Group Project is converted to Individual project in Semester III
- Duration of summer internship is changed from 30 hrs to 25 days

Item 06/BOS 2023.29/08: Approval of syllabus for Value-added Courses

Specific Value-added Courses (SVC): They are offered in Semesters I, III and V, where students can choose from the courses offered by all the departments.

1. Semester III - **Water management**
2. Semester V - **Chemistry of Cosmetics**

Approval of Value-added Courses for PG syllabus

Specific Value-added Courses (SVC): They are offered in Semesters I and III, where students can choose from the courses offered by all the departments.

1. Semester I - **Herbal Product Development and Formulation**
2. Semester III - **Bio pesticides & Bio fertilizers**

Generic Value-added Courses (GVC): They are offered in Semesters II, IV and VI, for UG and I and III for PG, where students have to undergo the courses offered by the department. (Common).

Item 07/BOS 2023.29/09: Classification of UG Courses as Employability/ Entrepreneurship/ Skill Development

Semester	Course Code	Name of the Course	Employability	Entrepreneurship	Skill development
I	CU231CC1	Core Course I: General Chemistry - I	✓		
	CU231CP1	Core Lab Course I: Quantitative Inorganic estimation (titrimetry) and Inorganic Preparations			✓
	CU231EC1	Elective Course I: Chemistry for Biological Sciences - I	✓		
	CU231EP1	Chemistry Practical for Physical and Biological Sciences			✓
	CU231NM1	Non-Major Elective (NME) I : Food Chemistry		✓	
	CU231FC1	Foundation Course – Basics of Chemistry			✓
	CU231V01	Specific Value-added Course – Articles in Everyday Life	✓		
II	CU232CC1	Core Course II: General Chemistry - II	✓		
	CU232CP1	Core Lab Course II: Organic Estimation and Preparation of Organic Compounds			✓
	CU232EC1	Elective Course II: Chemistry for Biological Sciences - II	✓		
	CU232EP1	Chemistry Practical for Physical and Biological Sciences			✓
	CU232NM1	Non Major Elective (NME) II : Cosmetics and Personal Grooming	✓	✓	
	CU232SE1	Skill Enhancement Course SEC-I: Dairy Chemistry	✓	✓	
	CU232FP1	Field Project	✓		

Classification of PG Courses as Employability/ Entrepreneurship/ Skill Development

Semester	Course Code	Name of the Course	Employability	Entrepreneurship	Skill development
I	CP231CC1	Core Course I: Organic Reaction Mechanism – I	✓		
	CP231CC2	Core Course II: Structure and Bonding in Inorganic compounds	✓		
	CP231CP1	Core Course III: Organic Chemistry Practical			✓

	CP231EC1	Elective Course I a)Nano Materials and Nano Technology	✓		
	CP231EC2	Elective Course I b) Pharmaceutical Chemistry	✓		
	CP231EC3	Elective Course I c) Analytical Chemistry		✓	
	CP231EC4	Elective Course II a) Electrochemistry			✓
	CP231EC5	Elective Course II: b) Molecular Spectroscopy			✓
	CP231EC6	Elective Course II: c)Industrial Products		✓	
	CP231V01	Herbal Product Development and Formulation		✓	
	LST231	Life Skill Training (LST) -1			✓
II	CP232CC1	Core Course III: Organic Reaction Mechanism-II	✓		
	CP232CC2	Core Course IV: Physical Chemistry-I	✓		
	CP232CP1	Core Lab Course II: Inorganic Chemistry Practical			✓
	CP232EC1	Elective Course III: a) Medicinal Chemistry	✓		
	CP232EC2	Elective Course III: b) Green Chemistry	✓		
	CP232EC3	Elective Course III: c)Transition Metal Chemistry	✓		
	CP232EC4	Elective Course IV: a)Bio Inorganic Chemistry	✓		
	CP232EC5	Elective Course IV: b) Material Science	✓		
	CP232EC6	Elective Course IV: c) Organometallic Chemistry	✓		
	CP232SE1	Skill Enhancement Course I Health Science	✓		
	LST231	Life Skill Training (LST) - 1			✓

Item 08/BOS 2023.29/10: Classification of Courses as Local//National /Regional / Global

The members of the board classified the UG courses in the new structure based on local/ national/ global relevance.

Semester	Course Code	Name of the Course	Local	National	Regional	Global
I	CU231CC1	Core Course I: General Chemistry - I				✓
	CU231CP1	Core Lab Course I: Quantitative Inorganic estimation (titrimetry) and Inorganic Preparations				✓
	CU231EC1	Elective Course I: Chemistry for Biological Sciences - I				✓
	CU231EP1	Chemistry Practical for Physical and Biological Sciences				✓
	CU231NM1	Non-Major Elective (NME) I : Food Chemistry	✓			
	CU231FC1	Foundation Course – Basics of Chemistry				✓
	CU231V01	Specific Value-added Course – Articles in Everyday Life		✓		
II	CU232CC1	Core Course II: General Chemistry - II				✓
	CU232CP1	Core Lab Course II: Organic Estimation and Preparation of Organic Compounds				✓
	CU232EC1	Elective Course II: Chemistry for Biological Sciences - II				✓
	CU232EP1	Chemistry Practical for Physical and Biological Sciences				✓
	CU232NM1	Non Major Elective (NME) II : Cosmetics and Personal Grooming				✓
	CU232SE1	Skill Enhancement Course SEC-I: Dairy Chemistry			✓	
	CU232FP1	Field Project	✓	✓		

Classification of PG Courses as Local/Regional/National/ Global

The members of the board classified the PG courses in the new structure based on local/ national/ global relevance.

Semester	Course Code	Name of the Course	Local	National	Regional	Global
I	CP231CC1	Core Course I: Organic Reaction Mechanism – I				✓
	CP231CC2	Core Course II: Structure and Bonding in Inorganic compounds				✓
	CP231CP1	Core Course III: Organic Chemistry Practical				✓
	CP231EC1	Elective Course I a) Nano Materials and Nano Technology				✓
	CP231EC2	Elective Course I b) Pharmaceutical Chemistry				✓
	CP231EC3	Elective Course I c) Analytical Chemistry				✓
	CP231EC4	Elective Course II a) Electrochemistry		✓		
	CP231EC5	Elective Course II: b) Molecular Spectroscopy				✓
	CP231EC6	Elective Course II: c)Industrial Products	✓			
	CP231V01	Herbal Product Development and Formulation	✓			
	LST231	Life Skill Training (LST) -1				✓
II	CP232CC1	Core Course III: Organic Reaction Mechanism-II				✓
	CP232CC2	Core Course IV: Physical Chemistry-I				✓
	CP232CP1	Core Lab Course II: Inorganic Chemistry Practical				✓
	CP232EC1	Elective Course III: a) Medicinal Chemistry		✓		
	CP232EC2	Elective Course III: b) Green Chemistry	✓			
	CP232EC3	Elective Course III: c)Transition Metal Chemistry				✓
	CP232EC4	Elective Course IV: a)Bio Inorganic Chemistry		✓		
	CP232EC5	Elective Course IV: b) Material Science				✓
	CP232EC6	Elective Course IV: c) Organometallic Chemistry				✓
	CP232SE1	Skill Enhancement Course I Health Science	✓			

Item 09/BOS 2023.29/11: Classification of UG Courses as Cross cutting issues

Semester	Course Code	Name of the Course	Gender Equity	Environment and sustainability	Human values	Professional ethics
I	CU231CP1	Core Lab Course I: Quantitative Inorganic estimation (titrimetry) and Inorganic Preparations		✓		
	CU231NM1	Non-Major Elective (NME): Food Chemistry		✓		
	UG232LC1 / UG232LM1	LEC I: Catechism / Moral			✓	✓
II	CU232CP1	Core Lab Course II: Organic Estimation and Preparation of Organic Compounds		✓		
	CU232EP1	Chemistry Practical for Physical and Biological Sciences		✓		
	CU232NM1	Non-Major Elective (NME) II: Cosmetics and Personal Grooming		✓		

Classification of PG Courses as Cross cutting issues

Semester	Course Code	Name of the Course	Gender Equity	Environment and sustainability	Human values	Professional ethics
I	CP231CP1	Core Course III: Organic Chemistry Practical		✓		
	PG23LST1	Life Skill Training			✓	✓
II	CP232CP1	Core Course VI: Inorganic Chemistry Practical		✓		
	CP232SE1	Skill Enhancement Course I Health Science			✓	
	CP231V01	Herbal Product Development and Formulation		✓		

Item 10/BOS 2023.29/12: Classification of Courses as Core Industry 4.0

Semester	Course Code	Name of the Course	Description of the course
I	CU231NM1	Non-Major Elective (NME) I: Food Chemistry	• Preparation of cosmetics
II	CU232NM1	Non-Major Elective (NME) II: Cosmetics and Personal Grooming	• Detection of adulterants and contaminants by analytical techniques
II	CU232SE1	Skill Enhancement Course SEC-I - Dairy Chemistry	• Determination of percentage of fat • Classification of creams

Classification of PG Courses as Core Industry 4.0

Semester	Course Code	Name of the Course	Description of the course
I	CP231V01	Herbal Product Development and Formulation	• Isolation of potential bioactive compounds through TLC, column chromatography and prep-HPLC techniques
II	CP232EC1	Elective CourseIII: a) Medicinal Chemistry	• Preparation of Paracetamol

Item 11/BOS 2023.29/12: Classification of Courses as New courses / Multidisciplinary courses / Courses address Indian Knowledge System

Semester	Course Code	Name of the Course	New Course	Multidisciplinary courses	Courses address Indian Knowledge System
I	CU231CC1	Core Course I: General Chemistry - I	✓		
	CU231CP1	Core Lab Course I: Quantitative Inorganic estimation (titrimetry) and Inorganic Preparations	✓		
	CU231EC1	Elective Course I: Chemistry for Biological Sciences - I	✓	✓	
	CU231EP1	Chemistry Practical for Physical and Biological Sciences	✓		
	CU231NM1	Non-Major Elective (NME) I : Food Chemistry	✓	✓	
	CU231FC1	Foundation Course – Basics of Chemistry	✓		
	CU231V01	Specific Value-added Course – Articles in Everyday Life		✓	
II	CU232CC1	Core Course II: General Chemistry - II	✓		
	CU232CP1	Core Lab Course II: Organic Estimation and Preparation of Organic Compounds	✓		
	CU232EC1	Elective Course II: Chemistry for Biological Sciences - II	✓	✓	✓
	CU232EP1	Elective Lab Course II : Systematic Analysis of Organic Compounds	✓		
	CU232NM1	Non Major Elective (NME) II : Cosmetics and Personal Grooming	✓	✓	
	CU232SE1	Skill Enhancement Course SEC-I: Dairy Chemistry	✓	✓	
	CU232FP1	Field Project			

Classification of PG Courses as New courses / Multidisciplinary courses / Courses address Indian Knowledge System

Semester	Course Code	Name of the Course	New courses	Multidisciplinary courses	Courses address Indian Knowledge System
I	CP231CC1	Core Course I: Organic Reaction Mechanism – I	✓	✓	
	CP231CC2	Core Course II: Structure and Bonding in Inorganic compounds	✓	✓	
	CP231CP1	Core Lab Course I: Organic Chemistry Practical	✓	✓	
	CP231EC1	Elective Course I a)Nano Materials and Nano Technology	✓	✓	
	CP231EC2	Elective Course I b) Pharmaceutical Chemistry	✓		
	CP231EC3	Elective Course I c)Analytical Chemistry			
	CP231EC4	Elective Course II a) Electrochemistry		✓	
	CP231EC5	Elective Course II: b) Molecular Spectroscopy	✓		
	CP231EC6	Elective Course II: c)Industrial Products	✓		
	CP231V01	Herbal Product Development and Formulation			✓
	PG23LST1	Life Skill Training			
II	CP232CC1	Core Course III: Organic Reaction Mechanism-II	✓		
	CP232CC2	Core Course IV: Physical Chemistry-I	✓	✓	
	CP232CP1	Core Lab Course II: Inorganic Chemistry Practical	✓		
	CP232EC1	Elective CourseIII: a) Medicinal Chemistry		✓	
	CP232EC2	Elective CourseIII: b) Green Chemistry	✓		
	CP232EC3	Elective CourseIII: c)Transition Metal Chemistry	✓		
	CP232EC4	Elective Course IV: a)Bio Inorganic Chemistry	✓	✓	
	CP232EC5	Elective Course IV: b) Material Science	✓		

	CP232EC6	Elective Course IV: c) Organometallic Chemistry	✓		
	CP232SE1	Skill Enhancement Course I Health Science	✓		
	PG23LST1	Life Skill Training			

Item 12/BOS 2023.29/13: Recommendation of journals

The BoS members recommended few more journals based on the modified/revised syllabi for B.Sc. Chemistry

1. Cotton and Wilkinson, 2014. Advanced Inorganic Chemistry. Willey student edition,
2. Huheey.E., Keiter.A., Keiter.L., 1993. Inorganic Chemistry. Haper Collins College Publishers.
3. C.N. Banwell and E.M.Mccash, 1995. Fundamentals of Molecular Spectroscopy. Data McGraa-Hillpublishers, Fourth Edition.
4. Y.R.Sharma, 2013. Organic Spectroscopy S.Chand &CO Company, Fifth Edition.
5. K.V.Raman Organic Spectroscopy

The BoS members recommended few more books based on the modified/revised syllabi for M.Sc. Chemistry

1. J. March and M. Smith (2001.), *Advanced Organic Chemistry*, 5th ed., John-Wiley and Sons.
2. P. S. Kalsi (2015.), *Stereochemistry of carbon compounds*, 8thedn, New Age International Publishers.
3. K.J. Laidler (2013), *Chemical Kinetics*, 3rd edition, Pearson, Reprint.
4. M.C. Gupta (1995), *Statistical Thermodynamics*, New Age International, Pvt. Ltd., New Delhi.
5. V. K. Ahluwalia and R. Aggarwal (2001), *Organic Synthesis: Special Techniques*, Narosa Publishing House, New Delhi.
6. A. K. De (2017) ,*Environmental Chemistry*, New Age Publications.
7. F. Purcell and J. C. Kotz, (1977), *Inorganic Chemistry*; W.B. Saunders company: Philadelphia.
8. J. E. Huheey, E. A. Keiter and R. L. Keiter, (1983),*Inorganic Chemistry*; 4th ed.; Harper and Row: NewYork,.

Item 13/BOS 2023.29/21: Suggestions for innovative teaching and evaluation techniques for UG and PG programme

In order to instill the basic subject knowledge, develop scientific aptitude and acquire integrated skills among the students many innovative teaching methodologies can be practiced. While a lecture can be extremely informative, a lecture that integrates virtual teaching can help an individual learn and retain information much more effectively and create multi-sensory experience. As the virtual teaching scenarios can help to build a better understanding of subjects amongst students, more of visual aids like pictures, mind maps, graphs, diagrams, videos, slides, real objects and models can be used. Different ICT tools like google classroom and Google Slides can be used. Kahoot, Quizzes, Socrative, Edmado, Mentimeter and google forms can be used to evaluate the understanding level of the students. Various softwares for

Feedback Received and Action Taken

Department	Stakeholders	Feedback Received	Action Taken
Chemistry	Students	New courses pertaining to job opportunities should be introduced. New elective courses may be offered.	Skill enhancement course like Chemistry for competitive examination is introduced. New elective course Biochemistry is offered.
	Parents	Curriculum is good	-
	Teachers	Courses pertaining to lab to land experiences can be increased.	Increased the courses with scope for lab to land experience.
	Alumni	Research oriented learning can be offered	Research oriented learning is given in projects and practicals
	Employers	-	-
	Academic Peers	Curriculum is good.	-

Student Feedback

UG

- Career oriented curriculum is designed
- Curriculum gives more importance for skill developing courses, entrepreneurial activities and employability skills.
- Value added courses are more relevant and useful.

PG

- Curriculum designed focusses employability
- Broad knowledge on the subject
- Value added courses enhance practical skills.

Name of the student

Ms. P.Kavena

Ms. A.Vishalie

List of Members with designation and Signature in table format

Name of the Members	Designation	Signature
Dr. M. Anitha Malbi	Chair Person	
Dr. V. Jeyabal	Associate Professor (University Nominee)	
Dr. A. Rose Venis	Assistant Professor (Subject Expert)	
Dr. S. Betsy Bai	Assistant Professor (Subject Expert)	
Ms. A Snow Havi Thev	Alumini	
Mr. G. M. Srinivasan	Industrialist	
Dr. R. Gladis Latha	Assistant Professor	
Sr. K. Francy	Assistant Professor	
Dr. S. Ajith Sinthuja	Assistant Professor	
Ms. L. DevaVijila	Assistant Professor	
Dr. Sheeba Daniel	Assistant Professor	
Dr. Y. Christabel Shaji	Assistant Professor	
Dr. S. Lizy Roselet	Assistant Professor	
Dr. M. Shirly Treasa	Assistant Professor	
Dr. B.T. Delma	Assistant Professor	
Dr. M. Antilin Princela	Assistant Professor	

Attendance Certificate

From

Dr. A. Rose Venis
Associate Professor of Chemistry
St. Joseph's College of Arts and Science,
Trichy.

To

The Dean
Holy Cross College (Autonomous)
Nagercoil – 4

Dear Madam

This is to certify that myself Dr. A. Rose Venis, attended the Board of studies meeting conducted by the Department of Chemistry, Holy Cross College (Autonomous), Nagercoil via Google meet as Subject Expert on 29-05-2023.

Sincerely

Dr. A. Rose Venis

Attendance Certificate

From

Mr. G. M. Srinivasan
Industrialist, Managing Director,
Petro chemical technologist,
Galileovasan Offshore & Research Development Pvt. Ltd.
Nagapattinam. 611602

To

The Dean
Holy Cross College (Autonomous)
Nagercoil – 4

Dear Madam

This is to certify that myself Mr. G. M. Srinivasan, attended the Board of studies meeting conducted by the Department of Chemistry, Holy Cross College (Autonomous), Nagercoil via Google meet as Subject Expert on 29-05-2023.

Sincerely

G.M.V

Mr. G. M. Srinivasan