



CHE-BOS-2019-2020-XIV

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
24.01.2020

Ref. No. CHE-BOS-2019-2020-XIV

Members

Dr. G. Leema Rose	-	HoD and Chair person
Dr. K. Swarnalatha	-	University nominee, Manonmaniam Sundaranar University Tirunelveli
Dr. C. Mary Anbarasi	-	Subject Expert, Jeyaraj Annapakiam College, Periyakulam
Dr. C. Sathananthan	-	Subject Expert, Government Arts College, Udhakamandalam, The Nilgiris
Ms. M. Monisha	-	Alumni
Mr. T. Dinesh Selvan	-	Industrialist, Kanam Latex Industries Pvt. Ltd, Kavalkinaru
Dr. M. Anitha Malbi	-	Member
Dr. R. Gladis Latha	-	Member
Sr. K. Francy	-	Member
Dr. S. Ajith Sinthuja	-	Member
Ms. L. Deva Vijila	-	Member
Dr. Sheeba Daniel	-	Member
Dr. Y. Christabel Shaji	-	Member
Dr. S. Lizy Roselet	-	Member
Dr. M. Dr. M. Shirley Treasa	-	Member

Agenda

1. Prayer
2. Welcome by the chair person
3. Reading of the minutes of the previous meeting and approval
4. Approval of panel of examiners for UG and PG programmes
5. Restructuring / Revision of curriculum for UG with PEOs, POs, PSOs and Cos.
6. Revision of syllabus for UG Semester I and II
7. Restructuring / Revision of curriculum for PG with PEOs, POs, PSOs and Cos.
8. Revision of syllabus for PG Semester I and II
9. Classification of new courses
10. Classification of the courses as Employability /Entrepreneurship/ Skill development (B.Sc and M.Sc.)
11. Classification of the courses as local/national / regional/ global (B.Sc and M.Sc.)
12. Classification of the courses as cross cutting issues, gender equity/Environment and sustainability/Human values / Professional ethics (B.Sc and M.Sc.).
13. Question paper pattern for B.Sc and M.Sc. Chemistry and mode of CIA
14. Recommendation of books and journals for B.Sc. and M.Sc Chemistry
15. Conduct of UGand PG practical exam during odd and even semester.
16. Suggestions on conducting seminars/ workshops in collaboration with Universities/ Industries/ NGO/ other organizations
17. Suggestions for innovative teaching and evaluation techniques for B.Sc and M.Sc Chemistry
18. Discussion on coordination of teaching, research, extension and other activities of the department
19. Feedback and action taken
20. Next meeting of BoS
21. Any other

**Minutes of the Board of Studies meeting of the Department of Chemistry held
on 24.01.2020 at 9.30 AM at
HOLY CROSS COLLEGE (AUTONOMOUS), NAGERCOIL, 629 004.**

The meeting commenced with prayer after which the HoD introduced the Board members with warm words of welcome.

The following items in the Agenda were discussed by the members of the Board.

Item 01/BoS 20.01/03: Approval of the minutes of the previous meeting held on 5.2.2019

Dr. M. Anitha Malbi read the minutes and was approved by the members.

Item 02/BoS 20.01/04: Approval of the panel of examiners for B.Sc and M.Sc Chemistry-Theory and Practical

The following list of panel of examiners for B.Sc Chemistry (Major and Allied) and M.Sc Chemistry was approved by the board. The details are given below:

External Examiners for Theory examination

S.No	UG Major /Allied	PG
1	Dr. Margret Leema Assistant Professor of Chemistry Arignar Anna College Aralvaimozhi. Mobile: 9486758815 Email: sjohnbritto35@gmail.com	Dr. S. Betsy Bai Assistant Professor of Chemistry S.T. Hindu College Nagercoil. Mobile: 9442029889 Email: betsjoe@gmail.com
2	Dr. S. Betsy Bai Assistant Professor of Chemistry S.T. Hindu College Nagercoil. Mobile : 9442029889 Email: betsjoe@gmail.com	Dr. H. Mary Helen, Assistant Professor of Chemistry S.T. Hindu College, Nagercoil. Mobile : 9442829631. Email: helencolumbus@gmail.com
3	Dr. Kalai Kathir Assistant Professor of Chemistry Women's Christian College Nagercoil. Mobile: 9489180672 Email: kalrentonren@gmail.com	Dr. Shyla Sree Assistant Professor of Chemistry S.T Hindu College, Nagercoil. Mobile no.9487415489 Email: sreeshyla.gv@gmail.com

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4	<p>Dr. S. Mary Helen Assistant Professor of Chemistry Annai Velankanni College Tholayavattam. Mobile: 9442057747 Email: chemhelen1976@gmail.com</p>	<p>Dr. J. Prema Kumari Associate Professor of Chemistry Scott Christian College, Nagercoil. Mobile : 9489283471 Email:premarussel@rediffmail.com</p>
5	<p>Dr. S. Issac Sobana Raj Assistant Professor of Chemistry Nesamony Memorial Christian College Marthandam. Mobile: 9442554368 Email: sacchemistry@gmail.com</p>	<p>Dr. A. Yardily Assistant Professor of Chemistry Scott Christian College(Autonomous) Nagercoil -3 Mobile :9442303508 Email:ayardily@gmail.com</p>
6	<p>Dr. D. Helen Assistant Professor of Chemistry Women's Christian College Nagercoil. Mobile: 9486760763 Email: d.helensuresh@yahoo.in</p>	<p>Dr. S. Issac Sobana Raj Assistant Professor of Chemistry Nesamony Memorial Christian College Marthandam. Mobile: 9442554368 Email: sacchemistry@gmail.com</p>
7	<p>Mrs. P. Mettilda Assistant Professor of Chemistry Nesamony Memorial Christian College Marthandam. Mobile: 9443778591 Email: paulmetilda@gmail.com</p>	<p>Dr. Muthu Krishnan Associate Professor of Chemistry S.T. Hindu College Nagercoil. Mobile: 9443227337 Email: kausthubb@gmail.com</p>
8	<p>Dr. Ponmurugaraj Assistant Professor of Chemistry S.T. Hindu College Nagercoil. Mobile: 9786917044 Email: haipmr@yahoo.co.in</p>	<p>Mrs. Mary Usha Assistant Professor of Chemistry Annai Velankanni College Tholayavattam. Mobile: 7598614698 Email: avcusha4@gmail.com</p>
9	<p>Dr. Muthu Krishnan Associate Professor of Chemistry S.T. Hindu College Nagercoil. Mobile: 9443227337 Email: kausthubb@gmail.com</p>	<p>Dr. S. Ginil Mon Assistant Professor of Chemistry Nesamony Memorial Christian College, Marthandam. Mobile : 9994029920 Email: therocksgm@yahoo.com</p>
10	<p>Mrs. Mary Usha Assistant Professor of Chemistry Annai Velankanni College Tholayavattam. Mobile: 7598614698 Email: avcusha4@gmail.com</p>	<p>Dr. S. Mary Helen Assistant Professor of Chemistry Annai Velankanni College Tholayavattam. Mobile: 9442057747 Email: chemhelen1976@gmail.com</p>

External Examiners for Practical examination

S. No	UG Major/ Allied	PG
1	Dr. Margret Leema Assistant Professor of Chemistry Arignar Anna College Aralvaimozhi. Mobile: 9486758815 Email: sjohnbritto35@gmail.com	Dr. H. Mary Helen, Assistant Professor of Chemistry S.T. Hindu College, Nagercoil. Mobile : 9442829631 Email: helencolumbus@gmail.com
2	Dr. S. Betsy Bai Assistant Professor of Chemistry S.T. Hindu College, Nagercoil. Mobile : 9442029889 Email: betsjoe@gmail.com	Dr. Betsy Bai, Assistant Professor of Chemistry S.T. Hindu College, Nagercoil. Mobile: 9442029889 Email: betsjoe@gmail.com
3	Dr. Kalai Kathir Assistant Professor of Chemistry Women's Christian College Nagercoil. Mobile : 9489180672 Email: kalrentonren@gmail.com	Dr. Jaya Rajan, Assistant Professor of Chemistry Annai Velankanni College, Tholayattam. Mobile : 9994029918 Email: jayarajanm1983@gmail.com
4	Dr. S. Mary Helen Assistant Professor of Chemistry Annai Velankanni College Tholayavattam. Mobile: 9442057747 Email: chemhelen1976@gmail.com	Dr. S. Mary Helen, Assistant Professor of Chemistry Annai Velankanni College, Tholayattam. Mobile : 9442057747 Email: chemhelen1976@gmail.com
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6	Dr. D. Helen Assistant Professor of Chemistry Women's Christian College Nagercoil. Mobile: 9486760763 Email: d.helensuresh@yahoo.in	Dr. Shyla Sree Associate Professor of Chemistry, S.T Hindu College, Nagercoil. Mobile :9487415489 Email:sreeshyla.gv@gmail.com
7	Dr. Ponmurugaraj Assistant Professor of Chemistry S.T. Hindu College Nagercoil. Mobile : 9786917044 Email: haipmr@yahoo.co.in	Dr.S. Ginil Mon Assistant Professor of Chemistry Nesamony Memorial Christian College Marthandam. Mobile : 9994029920 Email: therocksgm@yahoo.com

8	Mrs. P. Metilda Assistant Professor of Chemistry Nesamony Memorial Christian College, Marthandam. Mobile: 9443778591 Email: paulmetilda@gmail.com	Dr. J. Prema Kumari Associate Professor of Chemistry, Scott Christian College, Nagercoil. Mobile : 9489283471 Email:premarussel@rediffmail.com
9	Dr. Muthu Krishnan Assistant Professor of Chemistry S.T. Hindu College, Nagercoil. Mobile : 9443227337 Email: kausthubb@gmail.com	Mrs. Mary Usha Assistant Professor of Chemistry, Annai Velankanni College, Tholayavattam. Mobile : 7598614698 Email: avcusha4@gmail.com
10	Mrs. Mary Usha Assistant Professor of Chemistry Annai Velankanni College Tholayavattam. Mobile : 7598614698 Email: avcusha4@gmail.com	Dr. T. Sumitha Celine Assistant Professor of Chemistry, Scott Christian College, Nagercoil. Mobile : 9486540793 Email: sumithaezhil77@gmail.com

Item 03/BoS 20.01/05:Restructuring/Revision of curriculum for B.Sc. Chemistry programmes.

The overall structure of the curriculum framed in 2017 was accepted by the board for B.Sc Chemistry 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.

PEOs for UG Programme

PEOs No.	<i>Upon completion of B.Sc. programme, the graduates will:</i>
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.
PEO-2	pursue lifelong learning and continuous improvement of the knowledge and skills with the highest professional and ethical standards.
PEO-3	be a successful graduate with in-depth knowledge, strong fundamentals and novel ideas that make them capable of interpreting and assimilating new information that mold them to excel in professional career.

POs for UG Programme

POs No.	Upon completion of B.Sc. programme, the graduates will be able to:
PO-1	utilize scientific knowledge to pursue higher studies in the relevant field
PO-2	create innovative ideas to enhance entrepreneurial skills for economic independence
PO-3	face challenging competitive examinations that offer rewarding careers
PO-4	reflect upon green initiatives and take responsible steps to build a sustainable environment
PO-5	handle ethical issues with social responsibility
PO-6	communicate effectively and collaborate successfully with peers to become competent professionals

PSOs for UG Programme

PSOs No.	Upon completion of B.Sc. programme, the graduates of Chemistry will be able to :
PSO - 1	understand the fundamentals, theories and principles of organic, inorganic and physical chemistry.
PSO - 2	analyze physical and chemical properties of chemical compounds and their uses.
PSO - 3	interpret the mechanism of various chemical reactions.
PSO - 4	synthesize organic and inorganic compounds using classical and modern methods.
PSO - 5	design and carry out scientific experiments, record and interpret the results with accuracy
PSO - 6	use concepts, tools and techniques related to chemistry to other branches of science.
PSO - 7	develop skills in the safe-handling of chemicals and their usage in day today life.
PSO - 8	develop entrepreneurial skills, empowered to fulfil the professional requirement and become self-dependent.

B.Sc Chemistry Programme – Course Structure (2020-2023)
Distribution of Hours and Credits

Course	Sem. I	Sem. II	Sem. III	Sem. IV	Sem. V	Sem. VI	Total	
							Hours	Credits
Language	6 (4)	6 (4)	6 (4)	6 (4)	-	-	24	16
English	6 (4)	6 (4)	6 (4)	6 (4)	-	-	24	16
Major Core - Theory	4 (4)	4 (4)	4 (4)	4 (4)	5+5+6(4+4+5)	5+5+6 (4+4+5)	48	42
Major Core - Practical	2	2 (4)	2	2 (4)	3+3+2	3+3+2 (4+3+3)	24	18
Elective/Project	-	-	4 (3)	4 (3)	4 (3)	4 (3)	16	12
Allied -Theory	4 (3)	4 (3)	4 (3)	4 (3)	-	-	16	12
Allied Practical	2	2 (2)	2	2 (2)	-	-	8	4

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SEC	2 (2)	2 (2)	-	-	2 (2)	2 (2)	8	8
AECC/EVS	-	-	2 (2)	2 (2)	-	-	4	4
NMEC	4 (2)	4 (2)	-	-	-	-	8	4
*FC – I (Values for Life)	-	(1)	-	-	-	-	-	1
*FC – II (Personality Development)	-	-	-	(1)	-	-	-	1
* FC – III (HRE)	-	-	-	-	(1)	-	-	1
* FC – IV (GS)	-	-	-	-	-	(1)	-	1
*Skill Development Programme (SDP)	-	(1)	-	-	-	-	-	1
*Service Learning Programme (SLP)	-	(1)	(1)					2
i. Community Engagement Course	-	-	(1)	-	-	-	-	1
ii. Extension Activity (RUN)								
*Student Training Programme (STP) – Clubs & Committees / NSS	-	-	-	(1)	-	-	-	1
Total	30 (20)	30(26)	30 (23)	30 (28)	30 (19)	30 (29)	180	140 +5

Total number of hours = 180

Total number of Credits = 140+5

* Courses / Programmes conducted outside the regular working hours on Saturdays and holidays
No. of hours allotted for each of these programmes is 60 and is supervised by the faculty incharge

B.Sc Chemistry – Courses offered (2020-2023)

Semester	Course	Subject code	Paper	Hours/ week	Credits
	Part I	TL2011/ FL2011	Language	6	4
	Part II	GE2011	General English	6	4
	Part III	CC2011	Major Core I – General Chemistry - I	4	4

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I		CC20P1	Major Practical I – Volumetric Analysis and Inorganic Preparation	2	-
		CA2011	Allied I – Theory: Chemistry for Life Sciences	4	3
		CA20P1	Allied I – Practical – Volumetric and Organic Analysis	2	-
	Part IV	SEC201/ SEC202	Meditation and Exercise/ Computer Literacy	2	2
		CNM201	Non-Major Elective Course -NMEC	4	2
		FCV201	Foundation Course I – Values for Life	-	-
	Part V	SDP201	Skill Development Programme (SDP)	-	-
		STP201	Student Training Programme (STP) – Clubs & Committees / NSS	-	-
II	Part I	TL2021/ FL2021	Language	6	4
	Part II	GEC202	General English	6	4
	Part III	CC2021	Major Core II – General Chemistry - II	4	4
		CC20P1	Major Practical I - Volumetric Analysis and Inorganic Preparation	2	3
		CA2021	Allied I – Theory: Chemistry of Biomolecules	4	3
		CA20P1	Allied I – Practical : Volumetric and Organic Analysis	2	2
		Part IV	SEC201/ SEC202	Meditation and Exercise / Computer Literacy	2
	Part IV	CNM202	Non Major Elective Course (NMEC) – Applied Chemistry - II	4	2
		FCV201	Foundation Course I – Values for Life	-	1
		Part V	SDP201	Skill Development Programme (SDP) Certificate Course (Clinical Chemistry)	-
	Part V	STP201	Student Training Programme (STP) – Clubs & Committees / NSS	-	-
		SLP201	Service Learning Programme(SLP) -Community Engagement Course	-	-
	Part I	TL2031/ FL2031	Language	6	4
Part II		GE2031	General English	6	4

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III	Part III	CC2031	Major Core III – General Chemistry - III	4	4
		CC2032	Major – Elective - I a. Analytical Chemistry	4	3
	CC2033	Major – Elective - I b. Material Chemistry			
	CC2034	Major – Elective - I c. Applied Electro Chemistry			
	CC20P2	Major Practical II –Semi micro inorganic mixture analysis	2	-	
	CA2031	Allied II – Theory: Inorganic and Physical Chemistry	4	3	
	CA20P1	Allied II – Practical : Volumetric and Organic Analysis	2	-	
	Part IV	AEC201	English for Communication	2	2
		FCV202	Foundation Course II – Personality Development	-	-
	Part V	STP201	Student Training Programme (STP) – Clubs & Committees / NSS	-	-
SLP201		Service Learning Programme (SLP) -Community Engagement Course	-	2	
SLP202		Service Learning Programme (SLP)RUN	-	-	
IV	Part I	TL2041/ FL2041	Language	6	4
	Part II	GE204	General English	6	4
	Part III	CC2041	Major Core IV – General Chemistry - IV	4	4
		CC2042	Major - Elective – II a. Pharmaceutical Chemistry	4	3
		CC2043	Major - Elective – II b. Forensic Science		
		CC2044	Major - Elective – II c. Instrumental Methods of Analysis		
	CC20P2	Major Practical II - Semi micro inorganic mixture analysis	-	2	
	CA2041	Allied II - Theory: Physical Chemistry	4	3	
	CA20P1	Allied II - Practical - Volumetric and Organic Analysis	2	2	
	Part IV	AEC202	Environmental Studies	2	2
		FCV202	Foundation Course II – Personality Development	-	1
	Part V	STP201	Student Training Programme (STP) – Clubs & Committees / NSS	-	1
		SLP202	Service Learning Programme (SLP): Extension Activity (RUN)	-	1

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V	Part III	CC2051	Major Core V - Organic Chemistry - I	5	4
		CC2052	Major Core VI - Inorganic Chemistry - I	5	4
		CC2053	Major Core VII - Physical Chemistry - I	6	5
		CC2054	Major- Elective - III a. Green Chemistry	4	3
			Major- Elective - III b. Dairy Chemistry		
			Major- Elective - III c. Bio Chemistry		
		CC20P3	Major Practical III - Gravimetric estimation and Organic preparation	3	-
		CC20P4	Major Practical IV- Organic Estimation ,Organic analysis and determination of physical constants	3	-
	CC20P5	Major Practical V - Physical Chemistry Experiments	2	-	
	Part IV	SEP205	Chemistry for Competitive Examination -I	2	2
FCV203		Foundation Course III- Human Rights Education	-	1	
VI	Part III	CC2061	Major Core VIII - Organic Chemistry - II	6	5
		CC2062	Major Core IX - Inorganic Chemistry -II	5	4
		CC2063	Major Core X - Physical Chemistry - II	5	4
		CC2064	Major - Core Project	4	3
		CC20P3	Major Practical III – Gravimetric estimation and Organic preparation	3	4
		CC20P6	Major Practical IV Organic Estimation ,Organic analysis and determination of physical constants	3	4
		CC20P7	Major Practical V - Physical Chemistry Experiments	2	4
	Part IV	SEP206	Chemistry for Competitive Examination -II	2	2
		FCV204	Foundation Course IV - Gender Equity Studies	-	1
			TOTAL	180	140 + 5

Self Learning Course (SLC) – Extra Credit Course

Semester	Subject code	Title of the paper	Hours/ week	Credits
III/V	CC20S1	Soil Science and Agricultural Chemistry	-	2
IV/ VI	CC20S2	Chemistry of Cosmetics	-	2
III - VI	CC20S3	Online Course	-	2

Value Added Courses

S. No.	Name of the course	Total hours	Credit
I	Food Science	30	1
II	Chemistry of Cosmetics	30	1

Item 04/BoS 20.01/06:Revision of syllabus for UG Semester I and II

The following courses during the I and II semesters are revised/ modified

Sl.No.	Semester	Paper Code	Paper Title	Changes	
				Revised (if any)	Modified (if any)
1	I	CC2011	General Chemistry – I	Revised	
2	I	CA2011	Chemistry for Life Science	Revised	
3	I	CNM201	Applied Chemistry - I	Revised	
4	II	CC2021	General Chemistry - II	Revised	
5	II	CA2021	Chemistry of Biomolecules	Revised	
6	II	CNM202	Applied Chemistry - II	Revised	
7	II	CC20P1	Major Practical Paper I - Volumetric Analysis and Inorganic Preparation	Revised	
8	II & IV	CA20P1	Allied Chemistry Practical - Volumetric and Organic Substance Analysis	-	Modified

- i) In semester I and II, Inorganic Chemistry paper I and Physical chemistry paper I are replaced by General Chemistry I and II respectively.
- ii) For allied chemistry, separate courses are introduced for life sciences and Physics major.
- iii) In semester I, the allied chemistry paper titled General chemistry is revised as Chemistry for Life Science and in semester II Inorganic and Physical chemistry paper is revised as Chemistry of Biomolecules
- iv) The two Non-Major Elective Courses are revised and the title has been changed to Applied Chemistry - I and Applied Chemistry - II
- v) For major practical paper I, volumetric analysis is modified as Volumetric Analysis and Inorganic Preparation

Suggestions by the Experts

- i) Microscale volumetric analysis may be introduced
- ii) Instead of single elective course, two courses can be given with two self-study units.
- iii) In Core I General Chemistry- I, replace Unit III by Periodic Properties, Unit IV by Atomic Structure and Unit V by s- block elements and Principles of Volumetric Analysis.

In Core II General Chemistry - II, replace Unit III s- block elements and Principles of Volumetric Analysis by Chemical Bonding

Item 05/BoS 20.01/07: Restructuring / Revision of curriculum for M.Sc.Chemistry programme.

The overall structure of the curriculum framed was accepted by the board for M.,Sc Chemistry programme.

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

Programme Educational Objectives (PEOs) - PG

PEO No.	<i>Upon completion of M.Sc. degree programme, the graduates will :</i>
PEO - 1	apply scientific and computational technology to solve social issues and pursue research
PEO - 2	continue to learn and advance their careers in industry both in public and private sectors, government and academia
PEO - 3	imbibe ethical standards, teamwork, leadership, communication skills and professionalism with global competencies addressing chemistry related issues to the society

Programme Outcomes (POs) - PG

PO No.	<i>Upon completion of M.Sc. degree programme, the graduates will be able to:</i>
PO-1	acquire scientific skills and innovative ideas in their own discipline
PO-2	identify, formulate, perform research and contribute to the developmental needs of the society
PO-3	develop a multidisciplinary perspective and contribute to the knowledge capital of the globe
PO-4	emerge as expressive, ethical and responsible citizens with proven expertise

Programme Specific Outcomes (PSOs) - PG

PSO No.	<i>Upon completion of M.Sc Chemistry programme, the graduates will be able to:</i>
PSO-1	impart in-depth knowledge about various aspects of chemistry within an environment committed to excellence
PSO-2	develop critical thinking, technical skills and innovative ideas in analysing and solving problems in the field of chemistry
PSO-3	explore and expedite the recent avenues in chemistry research across the globe with professional competency
PSO-4	inculcate positive approach towards environment and ecology from the chemistry perspective
PSO-5	promote entrepreneurial skills and become self-reliant

M.Sc Chemistry Programme - Course Structure
Distribution of Hours and Credit

Course	Sem. I	Sem. II	Summer vacation	Sem. III	Sem. IV	Total	
						Hours	Credit
Core - Theory	6 (5) +	6 (5) +	-	6 (5) +	6 (5) +	66	55
	6 (5) +	6 (5) +		6 (5)	6 (5) +		
	6 (5)	6 (5)			6 (5)		
Core - Practical	4+4	4+4 (4+4)	-	4 +4	4+4 (4+4)	32	16

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Elective	4 (3)	4 (3)	-	4 (3)	4 (3)	16	12
Project	-	-	-	6 (4)	-	6	4
*Life Skill Training - I	-	(1)	-	-	-	-	1
Community Engagement Course	-	-	(2)	-	-	-	2
*Life Skill Training - II	-	-	-	-	(1)	-	1
*Summer Training Programme	-	-	(1)	-	-	-	1
TOTAL	30 (19)	30 (28)	(1)	30 (17)	30 (27)	120	92

Total number of Hours : 120

Total number of Credits : 90+2

Practical examinations will be conducted only at the end of even semester

*** Courses / Programmes conducted outside the regular working hours**

M. Sc Chemistry - Courses offered (2020 - 2023)

Semester	Subject code	Title of the paper	Hours/week	Credit
I	PG2011	Core I Structure and Bonding	6	5
	PG2012	Core II Reaction Mechanism and Stereochemistry	6	5
	PG2013	Core III Chemical Kinetics and Electrochemistry	6	5
	PG2014 PG2015	Elective I (a) Analytical Chemistry (b) Electrochemistry	4	3
	PG20P1	Practical I Inorganic Chemistry - I	4	-
	PG20P2	Practical II Organic Chemistry	4	-
	CEC202	Community Engagement Course	-	1
	PG2021	Core IV Coordination Chemistry	6	5
	PG2022	Core V Reaction Mechanism and Molecular Rearrangements	6	5
	PG2023	Core VI Quantum Chemistry and Spectroscopy	6	5

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II	PG2024	Elective II (a) Research Methodology (b) Nuclear Chemistry	4	3
	PG2025			
	PG20P1	Practical I Inorganic Chemistry - I	4	4
	PG20P2	Practical II Organic Chemistry	4	4
	LST202	Life Skill Training (LST) - I	-	1
CEC202	Community Engagement Course	-	1	
III	PG2031	Core VII Spectroscopy, Spectrometry and their Applications	6	5
	PG2032	Core VIII Thermodynamics and Group Theory	6	5
	PG2033	Elective III (a) Advanced Topics in Chemistry (b) Medicinal Chemistry	4	3
	PG2034			
	PG20P3	Practical III Inorganic Chemistry - II	4	-
	PG20P4	Practical IV Physical Chemistry	4	-
PG20PR	Project and Viva	6	4	
IV	PG2041	Core IX Inorganic Photochemistry, Spectroscopy and Organometallics	6	5
	PG2042	Core X Photochemistry, Pericyclic Reactions, Heterocycles and Natural Products	6	5
	PG2043	Core XI Material Chemistry	6	5
	PG2044	Elective IV (a) Energy for the Future (b) Nanochemistry	4	3
	PG2045			
	PG20P3	Practical III Inorganic Chemistry - II	4	4
	PG20P4	Practical IV Physical Chemistry	4	4
LST204	Life Skill Training (LST) - II	-	1	
STP201	Summer Training Programme	-	1	
TOTAL			120	92

Self-Learning Course (Extra Credit Course)

Semester	Subject code	Title of the paper	Hours/week	Credit
III	PC20S1	Chemistry for Lecturership exam – I	-	2
IV	PC20S2	Chemistry for Lecturership exam – II	-	2
III-IV	PC20S3	Online course	-	2

Item 05/BoS 20.01/08:Revision of syllabus for PG Semester I and II

The following courses during the I and II semester are revised/ modified

Sl. No.	Semester	Paper Code	Paper Title	Changes	
				Revised (if any)	Modified (if any)
1	I	PG2011	Core I Structure and Bonding	Revised	-
2	I	PG2012	Core II Reaction Mechanism and Stereochemistry	Revised	-
3	I	PG2013	Core III Chemical Kinetics and Electrochemistry	Revised	-
4	I	PG2014 PG2015	Elective I (a) Analytical Chemistry (b) Electrochemistry	Revised -	- Modified
5	II	PG2021	Core IV Coordination Chemistry	Revised	-
6	II	PG2022	Core V Reaction Mechanism and Molecular Rearrangements	Revised	-
7	II	PG2023	Core VI Quantum Chemistry and Spectroscopy	Revised	-
8	II	PG2024 PG2025	Elective II (a) Research Methodology (b) Nuclear Chemistry	Revised -	- Modified
9	II	PG20P1	Practical I Inorganic Chemistry- I	-	Modified
10	II	PG20P2	Practical II Organic Chemistry	-	Modified

- i) In semester I,
Inorganic chemistry I is revised as Structure and Bonding,
Organic chemistry I is revised as Reaction Mechanism and Stereochemistry
Physical chemistry I is revised as Chemical Kinetics and Electrochemistry.
Elective I - Instrumental methods of analysis is replaced by Analytical Chemistry
- ii) In semester II,
Inorganic chemistry II is revised as Coordination Chemistry
Organic chemistry II is revised as Reaction Mechanism and Molecular Rearrangements

Physical chemistry II is revised as Quantum Chemistry and Spectroscopy
 In Elective II- Research Methodology , Unit I Literature Searching and Preparation of Project Report is revised as Literature Survey, Unit II Statistical Analysis is replaced by Chemical Abstracts , Unit III Instrumental Analysis is replaced by Research Problem and Scientific Writing, Unit IV Computer in Research is replaced as Computer Searches and Literature.

Suggestions by the Experts

- i) In Core II - Reaction mechanism and Stereochemistry,
 Unit IV Reaction Intermediates can be added in Unit I Reaction mechanism.
 Unit V Stereochemistry can be split into two units as Stereochemistry and Conformational Analysis.
- ii) In Core III - Chemical kinetics and Electrochemistry, Unit I Chemical Kinetics and Catalysis can be revised.
- iii) In Elective I (a) - Analytical Chemistry, Unit II and III Chromatography can be combined. Unit V Spectroanalytical Techniques can be replaced by Analytical techniques and Surface and Thermal Analytical techniques.
- iv) In Core V - Reaction Mechanism and Molecular Rearrangements, the title of Unit I Addition to Carbon-Carbon Double Bond can be changed to Addition to Carbon-Carbon Multiple bond and Unit II Addition to Carbon-Oxygen Double Bond can be changed to Addition to Carbon-Oxygen Multiple Bond.
- v) The title of the course Quantum Chemistry and Analytical Techniques can be modified as Quantum Chemistry and Spectroscopy. Unit IV and V can be replaced by Molecular Spectroscopy I and II.

Item 06/BoS 20.01/09: Classification of new courses

a) New courses introduced for B.Sc. Chemistry in the revision of Curriculum

Sl.No.	Semester	Paper Code	Paper Title
1	I	CA2011	General Chemistry - I
2	I	CA2011	Chemistry for Life Science
3	I	CNM201	Applied Chemistry - I
4	II	CC2021	General Chemistry - II
5	II	CA2021	Chemistry of Biomolecules
6	II	CNM202	Applied Chemistry - II
7	I & II	CC20P1	Volumetric Analysis and Inorganic Preparation

b) New courses introduced for M.Sc. Chemistry in the revised course structure is given below.

Sl. No.	Semester	Paper Code	Paper Title
1	I	PG2011	Core I Structure and Bonding
2	I	PG2012	Core II Reaction Mechanism and Stereochemistry
3	I	PG2013	Core III Chemical Kinetics and Electrochemistry
4	I	PG2014	Elective I (a) Analytical Chemistry
5	II	PG2021	Core IV Coordination Chemistry
6	II	PG2022	Core V Reaction Mechanism and Molecular Rearrangements
7	II	PG2023	Core VI Quantum Chemistry and Spectroscopy

Item 07/BoS 20.01/10: Classification of the courses as Employability/ Entrepreneurship/Skill development (B.Sc. and M.Sc.)

Classification of the courses as Skill development/Employability/ Entrepreneurship (UG)

YEAR OF IMPLEMENTATION: 2020									
Sem	Course Code	Name of the Course	Employability	Skill Development	Sem	Course Code	Name of the Course	Employability	Skill Development
I	CC1711	Inorganic Chemistry - I	✓		I	CC2011	General Chemistry - I	✓	
I	CA1711	General Chemistry	✓		I	CA2011	Chemistry for Life Science		✓
I	CNM171	Molecules of Life	✓		I	CNM201	Applied Chemistry - I		✓
II	CC1721	Physical Chemistry - I	✓		II	CC2021	General Chemistry - II	✓	
II	CA1721	Inorganic and Physical Chemistry	✓		II	CA2021	Chemistry of Biomolecules	✓	
II	CNM172	Fuel Chemistry	✓		II	CNM202	Applied Chemistry - II		✓
II	CC17P1	Major Practical Paper I - Volumetric Analysis		✓	II	CC20P1	Major Practical Paper I - Volumetric Analysis and Inorganic Preparation		✓
II & IV	CA17P1	Allied Chemistry Practical - Volumetric and Organic Substance Analysis		✓	II & IV	CA20P1	Allied Chemistry Practical - Volumetric and Organic Substance Analysis		✓

Classification of the courses as Employability /Entrepreneurship/Skill development (PG)

Sem	Course Code	Name of the Course	Employ ability	Skill Development	Sem	Course Code	Name of the Course	Employ ability	Skill Development
I	PG1711	Core I Organic Chemistry –I	✓		I	PG2011	Core I Structure and Bonding	✓	
I	PG1712	Core II Inorganic Chemistry – I	✓		I	PG2012	Core II Reaction Mechanism and Stereochemistry	✓	
I	PG1713	Core III Physical Chemistry – I	✓		I	PG2013	Core III Chemical Kinetics and Electrochemistry	✓	
I	PG1714	Elective I		✓	I	PG2014	Elective I	✓	✓
	PG1715	(a) Instrumental Methods of Analysis (b) Electrochemistry	✓			PG2015	(a) Analytical Chemistry (b) Electrochemistry		
II	PG1721	Core IV Organic Chemistry – II	✓		II	PG2021	Core IV Coordination Chemistry	✓	
II	PG1722	Core V Inorganic Chemistry – II	✓		II	PG2022	Core V Reaction Mechanism and Molecular Rearrangements	✓	
II	PG1723	Core VI Physical Chemistry – II	✓		II	PG2023	Core VI Quantum Chemistry and Spectroscopy	✓	
II	PG1724	Elective II (a) Research Methodology			II		Elective II	✓	
	PG1725	(b) Nuclear Chemistry	✓			PG2024	(a) Research Methodology (b) Nuclear Chemistry		✓
II	PG17P1	Practical I Organic Chemistry	✓	✓	II	PG20P1	Practical I Inorganic Chemistry-I	✓	✓
II	PG17P2	Practical II Inorganic Chemistry	✓	✓	II	PG20P2	Practical II Organic Chemistry	✓	✓

Item 08/BoS 20.01/11: Classification of the courses as local/ national/ regional/ global. (B.Sc. and M.Sc.)

The members of the Board classified the UG courses based on as local/ national/ regional/ global

Sem	Course Code	Name of the Course	National	Global
I	CC2011	General Chemistry - I		✓
I	CA2011	Chemistry for Life Science		✓
I	CNM201	Applied Chemistry - I	✓	
II	CC2021	General Chemistry - II		✓
II	CA2021	Chemistry of Biomolecules		✓
II	CNM202	Applied Chemistry - II	✓	
II	CC20P1	Major Practical Paper I - Volumetric Analysis and Inorganic Preparation		✓
II & IV	CA20P1	Allied Chemistry Practical - Volumetric and Organic Substance Analysis		✓

The members of the Board classified the PG courses in the new structure based on as local/ regional/national/ global

Sem	Course Code	Name of the Course	Global
I	PG2011	Core I Structure and Bonding	✓
I	PG2012	Core II Reaction Mechanism and Stereochemistry	✓
I	PG2013	Core III Chemical Kinetics and Electrochemistry	✓
I	PG2014 PG2015	Elective I (a) Analytical Chemistry (b) Electrochemistry	✓
II	PG2021	Core IV Coordination Chemistry	✓
II	PG2022	Core V Reaction Mechanism and Molecular Rearrangements	✓
II	PG2023	Core VI Quantum Chemistry and Spectroscopy	✓
II	PG2024 PG2025	Elective II (a) Research Methodology (b) Nuclear Chemistry	✓
II	PG20P1	Practical I Inorganic Chemistry- I	✓
II	PG20P2	Practical II Organic Chemistry	✓

Item 09/BoS 20.01/12: Classification of the courses as cross cutting issues, gender equity/Environment and sustainability/Human values / Professional ethics (B.Sc and M.Sc.).

Semester	Course Code	Name of the Course	Gender Equity	Environment and sustainability	Human values
I	CC2011	Major Core I – General Chemistry - I			
	CC20P1	Major Practical I – Volumetric Analysis and Inorganic Preparation		✓	
	CA2011	Allied I –Theory: Chemistry for Life Sciences			
	CA20P1	Allied I – Practical – Volumetric and Organic Analysis		✓	
	SEC201/ SEC202	Meditation and Exercise/ Computer Literacy			
	CNM201	Non-Major Elective Course -NMEC Applied Chemistry - I			
	FCV201	Foundation Course I – Values for Life			
II	CC2021	Major Core II – General Chemistry - II			✓
	CC20P1	Major Practical I - Volumetric Analysis and Inorganic Preparation		✓	
	CA2021	Allied I – Theory: Chemistry of Biomolecules			
	CA20P1	Allied I – Practical : Volumetric and Organic Analysis		✓	
	SEC201/ SEC202	Meditation and Exercise / Computer Literacy			
	CNM202	Non Major Elective Course (NMEC) – Applied Chemistry - II			
	FCV201	Foundation Course I – Values for Life	✓		✓

Semester	Course Code	Name of the Course	Human values	Environment and sustainability	Professional ethics
I	PG2011	Core I Structure and Bonding			
	PG2012	Core II Reaction Mechanism and Stereochemistry			
	PG2013	Core III Chemical Kinetics and Electrochemistry			
	PG2014 PG2015	Elective I (a) Analytical Chemistry (b) Electrochemistry			
II	PG2021	Core IV Coordination Chemistry			
	PG2022	Core V Reaction Mechanism and Molecular Rearrangements			
	PG2023	Core VI Quantum Chemistry and Spectroscopy			
	PG2024 PG2025	Elective II (a) Research Methodology (b) Nuclear Chemistry			✓
	PG20P1	Practical I Inorganic Chemistry- I		✓	
	PG20P2	Practical II Organic Chemistry		✓	
	LST202	Life Skill Training (LST) - I	✓		

Item 10/BoS 20.01/13: Approval of model question Paper pattern and mode of CIA and question Paper pattern for end semester examination for B.Sc. and M.Sc. Chemistry

The following question pattern for CIA and end semester examination for B.Sc. Chemistry Programme has been approved by the board

For B.Sc. Chemistry major Core, Allied and Elective papers

Internal : External 30 : 70

a) Continuous Internal Assessment (CIA)

Periodic test (average 2 tests) – 15 marks	
Class test (3) :	3 x 2 = 6 marks
Quiz (2) :	2 x 2 = 4 marks
Home assignment/open book test/ seminar/role play/field assignment/article/review/group discussion/problem solving :	5 marks
Total :	30 marks

b) Periodic Question Paper Pattern (Total = 40 marks which will be converted to 15 marks for each test)

Part A - 4 x 1 = 4 marks (Objective type)
Part B - 3 x 4 = 12 marks (Internal Choice)
Part C - 3 x 8 = 24 (Internal Choice)

c) External Question Paper Pattern (Total = 70 marks)

Part A - 10 x 1 = 10 marks (Objective type)
Part B - 5 x 4 = 20 marks (Internal Choice)
Part C - 5 x 8 = 40 (Internal Choice)

For Major and Allied Practicals the mark allotment is

Internal : External 40 : 60

The following question pattern for CIA and end semester examination for M.Sc. Chemistry Programme has been approved by the board

Question pattern for CIA and end semester examination
For M.Sc. Chemistry Programme

Internal: External 40 : 60

a) Continuous Internal Assessment (CIA)

Periodic test (average 2 tests) :	20 marks
Class test (2) :	2 x 2 = 4 marks
Quiz (2) :	2 x 2 = 4 marks
Seminar :	4 marks
Open book test / problem solving / Book or article review / CD/ online :	4 marks
Online Home assignment :	4 marks
Total :	20 marks

b) Periodic Question Paper Pattern (Total = 40 marks which will be converted to 20 marks for each test)

Part A - 4 x 1 = 4 marks (Objective type)
Part B - 3 x 4 = 12 marks (Internal Choice)
Part C - 3 x 8 = 24 (Internal Choice)

c) External Question Paper Pattern (Total = 60 marks)

Part A - 10 x 1 = 10 marks (Objective type)
Part B - 5 x 3 = 15 marks (Internal Choice)
Part C - 5 x 7 = 35 (Internal Choice)

For Practicals

Internal: External 40 : 60

Item 12/BoS 20.01/14 Recommendation of books, journals for UG and PG programme.

Recommended Text Books for B.Sc. Chemistry

The BoS members recommended the following books based on the modified/Revised syllabus for B.Sc. Chemistry

1. M.K. Jain and S. C. Sharma, Modern Organic Chemistry, Vishal Publishing Co, 2015
2. B.R. Puri, L.R. Sharma, K.K. Kalia, Principles of Inorganic Chemistry, 23rd edn, New Delhi, Shoban Lal Nagin Chand & Co., 1993.
3. B.R.Puri, L.R.Sharma and M.S.Pathania, Principles of Physical Chemistry. 47th edn, Vishal Publishing Co., 2017

The members suggested to make use of the E-journals instead of subscribing journals for PG

Item 13/BoS 20.01/15: Conduct of UG and PG practical exam during odd and even semester

The members suggested to conduct practical during odd and even semester

Item 14/BoS 20.01/16: Suggestions on conducting seminars/ workshops in collaboration with Universities/ Industries/ NGO/ other organizations

Workshops and seminars in collaboration with the parent University is recommended

Item 15/BoS 20.01/17: Suggestions for innovative teaching and evaluation techniques for B.Sc. and M.Sc Chemistry.

The BoS members suggested the following methodologies to enhance teaching, learning and evaluation.

- i. Participative learning techniques such as Flip Class, Group discussion, Problem Solving, etc. may be practiced
- ii. Make use of more molecular models
- iii. Internal evaluations based on class room assessments

Item 16/BoS 20.01/18: Discussion on coordination of teaching, research, extension and other activities of the department

- i. Efforts may be taken for Internship and Collaborative Programmes
- ii. Lab to Land programme
- iii. Joy of giving during December

Item 16/BoS 20.01/19

Feedback received and action taken

Feedback received	Action taken
SBC project can be replaced by core project in the VI semester	Core project is introduced
Unit V in Organic Chemistry - III (Drug discovery and drug design) can be modified	The unit is modified
Advanced topics can be included in Unit V of Inorganic Chemistry - II	It is considered

The meeting ended with vote of thanks by the HoD, the Chairperson of the BoS at 4.15 pm.

Feedback from students

B.Sc

- Use smart classes
- Physical chemistry syllabus can be modified
- Assignments and industrial visits are needed for environmental.

M.Sc

- Provide internship
- Need job oriented awareness programmes related to chemistry subjects.
- Modern technologies can be used while teaching

Name of the students

1. M. R. Aslin Geo
2. Benitlin Shalom. S.C

Item 16/BoS 20.01/20: Next Meeting of the BoS

The members of the board suggested to have the next meeting of BoS during the 2nd week of August 2020.

Item 16/BoS 20.01/21: Any Other

Nil

Name of the Members	Designation	Signature
Dr. G. Leema Rose	HoD	Kecara 20/11/2020
Dr. K. Swarnalatha	Associate Professor (University Nominee)	Swarnalatha 24/11/2020
Dr. C. Mary Anbarasi	Associate Professor (Subject Expert)	C. Mary Anbarasi 24/11/2020
Dr. C. Sathananthan	Assistant Professor (Subject Expert)	Sathananthan 24/11/2020
Ms. M. Monisha	Alumini	Monisha 24/11/2020
Mr. T. Dinesh Selvan	Industrialist, Kanam Latex Industries Pvt. Ltd, Kavalkinaru	Dinesh Selvan 24/11/2020
Dr. M. Anitha Malbi	Assistant Professor	M. Anitha Malbi 24/11/2020
Dr. R. Gladis Latha	Assistant Professor	R. Gladis Latha 24/11/2020
Sr. K. Francy	Assistant Professor	Francy 24/11/2020
Dr. S. Ajith Sinthuja	Assistant Professor	Ajith Sinthuja 24/11/2020
Ms. L. Deva Vijila	Assistant Professor	Deva Vijila 24/11/2020
Dr. Sheeba Daniel	Assistant Professor	Sheeba Daniel 24/11/2020
Dr. Y. Christabel Shaji	Assistant Professor	Christabel Shaji 24/11/2020
Dr. S. Lizy Roselet	Assistant Professor	Lizy Roselet 24/11/2020
Dr. M. Shirly Treasa	Assistant Professor	M. Shirly Treasa 24/11/2020