

**MINUTES OF THE 21<sup>st</sup> MEETING OF THE BOARD OF STUDIES OF THE CHEMISTRY  
DEPARTMENT HELD ON 9<sup>th</sup> December 2023**

The meeting of the Board of Studies of the Department of Chemistry was held on 9<sup>th</sup> December 2023 at 10 am in the Department Library. In the beginning, the Chairperson introduced and welcomed the members. The following agendas were taken up for discussion.

Minute No	Minutes
1.	<p><b>Confirmation of the Minutes of the 20<sup>th</sup> BoS meeting held on 24<sup>th</sup> June 2023</b></p> <p>The Chairperson Dr. G. Allen Gnana Raj read the minutes of the BOS meeting and it was confirmed.</p>
2.	<p><b>Action Taken Report on the Minutes of the 20<sup>th</sup> BOS meeting</b></p> <p>The Chairperson Dr. G. Allen Gnana Raj presented the following action taken during the previous BOS</p> <ul style="list-style-type: none"><li>• To increase the percentage of course outcome, selected modules are modified.</li><li>• Questions are ensured that they are in the understanding level by the students.</li></ul> <p>The members of BOS carefully perused the presented action by the Chairperson and expressed their satisfaction and appreciation.</p>
3.	<p><b>Review of Academic and Administrative Audit (AAA) Report</b></p> <p>The Chairperson Dr. G. Allen Gnana Raj presented the AAA report criteria-wise and the members of BOS carefully reviewed the report and appreciated the following.</p> <ul style="list-style-type: none"><li>• Awards given to the high impact publication for staff and research scholars.</li><li>• Awards given to the best paper presentation for the PG students and research scholars.</li></ul>

	<p><b>Review of Feedback Report on curriculum obtained from 1) Students 2) Teachers 3) Employers 4) Alumni</b></p> <p>The Chairperson presented the Feedback Report obtained from 1) Students 2) Teachers 3) Employers 4) Alumni on the curriculum of B.Sc. and M.Sc Chemistry from the academic year 2022-2023.</p> <p>The members of BOS carefully reviewed the Feedback Report received from the stake holders and proposed the following actions to be taken in the curriculum.</p> <ul style="list-style-type: none"> <li>• Remedial classes should be conducted regularly for the slow learners.</li> <li>• Advanced learners should be identified and motivated for the competitive examinations.</li> </ul>																		
<p>5.</p>	<p><b>Introduction of new courses from the academic year 2023-24</b></p> <p>As per the suggestion of <b>Dr.J. Helen Retna Monica and Dr. T.S. Abbs Fenn Regie</b> the following changes were done in both UG and PG programme.</p> <p><b>Dr. G. Allen Gana Raj</b> proposed the introduction of the following new courses in the curriculum of B.Sc./M.Sc. Chemistry from the academic year 2023-'24.</p> <p align="center"><b>1. Name of the Course with local/regional/national/global relevance</b></p> <table border="1" data-bbox="256 1238 1353 1809"> <thead> <tr> <th>Name of the Course</th> <th>Code</th> <th>Relevance to local, national, regional and global development needs</th> </tr> </thead> <tbody> <tr> <td>1. Rubber Technology-Skill Enhancement Course</td> <td align="center">-</td> <td align="center"><b>Regional</b></td> </tr> <tr> <td>2. Entrepreneurial Skills in Chemistry</td> <td align="center">-</td> <td align="center"><b>National</b></td> </tr> <tr> <td>3. Material Science</td> <td align="center">-</td> <td align="center"><b>National</b></td> </tr> <tr> <td>4. Bio inorganic Chemistry</td> <td align="center">-</td> <td align="center"><b>Global</b></td> </tr> <tr> <td>5. Chemistry of Natural Products</td> <td align="center">-</td> <td align="center"><b>Global</b></td> </tr> </tbody> </table>	Name of the Course	Code	Relevance to local, national, regional and global development needs	1. Rubber Technology-Skill Enhancement Course	-	<b>Regional</b>	2. Entrepreneurial Skills in Chemistry	-	<b>National</b>	3. Material Science	-	<b>National</b>	4. Bio inorganic Chemistry	-	<b>Global</b>	5. Chemistry of Natural Products	-	<b>Global</b>
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**Suggestions and recommendations for changes in UG/PG Chemistry syllabus 2023-24**

As per the recommendation of Dr. T.S. Abbs Fenn Regie we have made few changes in the UG curriculum frame work . He suggested to introduce General Chemistry II in the second semester and General Chemistry III in the third semester.

As per the suggestion of Dr.J. Helen Retna Monica we have introduced Material Science and Bioinorganic chemistry as elective papers in the PG Programme. Advanced topics in Organic ,Physical and Inorganic Chemistry were introduced in the Core papers. Since experimental learning is more effective she suggested to give equal importance to both theory and practical's.

**6. Revision of syllabus of existing courses from the academic year 2023-2024**

**CHANGES MADE IN THE UG PROGRAMME**

No	Seme ster	Name of the paper	Observations/Suggestions /Recommendations	Relevance toGlobal/ National/ Regional	%of Change
1	I	General Chemistry II	Unit I- Acids, bases & Ionic equilibria Unit II- Chemistry of s –Block Elements Unit III- Chemistry of p-Block Elements Unit IV- Hydrocarbon Chemistry-I Unit V- Colloids & Surface Chemistry	Global	100% change
2	II	Organic Chemistry I	I-Streochemistry II-Chemistry of Nitrogen Compounds -I III- Chemistry of Nitrogen Compunds-II IV-Heterocylic compunds V-Six-membered heterocyclic compounds	Global	20% change
3	III	General Chemistry III	Unit I- Gaseous state Unit II- Liquid State & Solid States Unit III- Nuclear Chemistry Unit IV- Halogen derivatives	Global	100% change

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			<b>Unit V- Phenols and Aromatic alcohols</b>		
4	III	Physical Chemistry I	Unit I- Thermodynamics I Unit II- Thermodynamics II Unit III- Thermodynamics III Unit IV- Phase Rule -I Unit V- Phase Rule- II	Global	shifted from Sem V to III
5	IV	Inorganic Chemistry- I	I- Hydrogen and Oxygen compounds II- Halogen compounds III- Carbon group element IV- d-Block element V- f-Block element	Global	25%
6	V	Organic Chemistry -II	Unit I- Alkaloids and Terpenes Unit II-Carbohydrates Unit III-Molecular rearrangements Unit IV –Ethers, Thioethers & Epoxides Unit V – Carboxylic Acids	Global	40% change
7	VI	Inorganic Chemistry II	Unit I- Coordination Compounds-I Unit I- Coordination Compounds-II Unit I- Coordination Compounds-III Unit I- Coordination Compounds-IV Unit I- Inorganic Chemistry of Biological System	Global	20% Change
8	VI	Physical Chemistry -II	Unit I- Chemical Kinetics – delete 1.12 Unit II- Molecular Symmetry and Group Theory Unit III- Electro Chemistry -I Unit IV- Electro Chemistry -II Unit V- Electro Chemistry -III	Global	10 % change
			<b>Elective</b>		
9	V	Polymer Chemistry	II.Polymer and its types II.Tecniques of Polymerization,	Regional	30%

Minutes of the BoS meeting held on 9<sup>th</sup> Dec 2023 [Type text]

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			<p>Synthesis and Characterisation</p> <p>III. Synthetic and Natural Polymers</p> <p>IV. Physical State and Biomedical Application of Polymers</p> <p>V. Properties &amp; Processing of Polymers</p>		
10	V	Industrial Chemistry	<p>I – Fuels</p> <p>II – Cosmetics</p> <p>III - Sugar industry, food preservation and processing</p> <p>IV - Abrasives, Leather and Paper industry</p> <p>V - Lubricants and Cement</p>	Regional	40%

### Practicals

1.	II	Qualitative Organic Analysis	Global	No Change
2	III	Qualitative analysis of simple inorganic salt	Global	50% change
3	1V	Qualitative analysis of Salt mixture	Global	No change
4	V	Organic Estimation and determination of Physical constant	Global	20% change
3	V	Gravimetric Estimation & Inorganic Preparation	Global	No change
4	V	Project	Regional	
5	VI	Physical Chemistry Experiments	Global	No change

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### Multidisciplinary Courses

1.	I	<b>FOOD CHEMISTRY</b> I. Food Adulteration II. Food Poison III. Food Additives IV. Beverages V. Edible Oils	Regional	50%
3.	III	<b>DAIRY CHEMISTRY</b> I. Properties of milk II. Processing of milk III. Milk Products I IV. Milk Products II V. Milk Lipids / Enzymes	Regional	60%
4.	IV	<b>CHEMISTRY IN EVERYDAY LIFE</b> I. Pollution II. Building Materials and plastics III. Food and Cosmetics IV. Explosives and Fuels V. Pharmaceutical drugs	National	40%
5.	V	<b>RUBBER TECHNOLOGY</b> I. Introduction of natural rubber II. Methods of rubber processing III. Rubber Tapping and Rubber Latex IV. Rubber additives V. Applications of Rubber products	Regional	100%

### Skill Enhancement Course

1	III	<b>COSMETICS AND PERSONAL GROOMING</b>	Unit-I Skin Care Unit-II Hair Care and Dental Care Unit-III Make Up	Global	100% change
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			Unit -IV Perfumes Unit -V Beauty treatments		
2	IV	ENTREPRENEURIAL SKILLS IN CHEMISTRY	Unit-1 Food chemistry and Dyes Unit-II Hands on Experience	Regional	100% change
3	V	PESTICIDES IN CHEMISTRY	Unit-I Toxicity of pesticides Insecticides Unit-II Pesticides residues Unit-III Bio pesticides	Regional	100% change
4	VI	INSTRUMENTAL METHODS OF CHEMICAL ANALYSIS	Unit-1 Quantitative and Qualitative aspects of Analysis Unit-2 Atomic Absorption Spectroscopy Unit-3 UV-Visible and IR Spectroscopy Unit -4 Thermal and Electro-Analytical Methods of Analysis Unit -5 Separation and Purification techniques	National	100% change

**Minor Stream (Allied) Course**

1	II	Allied Chemistry	I – Water and Ozone II – Carbohydrates III – Amino acids and Essential elements IV – Polymer Chemistry V - Photochemistry	Regional	40%
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CHANGES MADE IN THE PG PROGRAMME

No	Semester	Name of the paper	Observations/Suggestions /Recommendations	Relevance to Global/ National/ Regional	% of Change
	I	Organic chemistry II	Unit I-Elimination and Free Radical Reactions Unit II-Oxidation and Reduction Reaction Unit III -Rearrangements Unit IV- Addition to Carbon Multiple Bonds Unit V-Reagents and Modern Synthetic Reactions	Global	50%change
	II	Physical Chemistry I	Unit I- Quantum Mechanics I-1.3,1.6-1.9 deleted Unit II- Quantum Mechanics II Unit III- Quantum Mechanics III-combined four units and modified to three units Unit IV- Molecular Spectroscopy I-Shifted Raman Spectroscopy Unit V- Photochemistry	Global	30% change
	II	Material Science	Unit I Optoelectronic materials Unit II Ceramic Materials Unit III Polymeric Materials Unit IV Composite Materials Unit V New Materials	National	100%change
	II	Bio inorganic Chemistry	Unit I- Essential trace elements, Oxygen transport and uptake proteins. Unit II- Electron transport proteins Unit III- Metal containing enzyme Unit IV- Biological redox enzyme Unit V- Metals and chelation in medicine	Global	70% change

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III	Inorganic Chemistry II	Unit I- Electronic Spectroscopy Unit II- Optical rotatory dispersion, circular dichroism and mossbauer spectroscopy Unit III-Nuclear magnetic resonance and Electron paramagnetic resonance spectroscopy Unit IV-Organometallic Chemistry I Unit V-Organometallic Chemistry II 5.12 Olefin isomerization using Ni catalyst - Olefin metathesis catalysed by Schrock type carbene deleted from the old syllabus.	Global	10%change
III	Physical Chemistry II	Unit I- Group Theory I Unit II- Group Theory I Unit III- Chemical Kinetics I - 4.5,4.6 module deleted & combined two units to one unit. Unit IV- Molecular Spectroscopy II Unit V- Molecular Spectroscopy III- Shifted this unit from semester II	Global	25 % change
III	Chemistry of Natural product	Unit I- Alkaloids Unit-II Terpenoids and Carotenoids Unit III- Anthocyanines and Flavones Unit IV- Purines and Steroids Unit V- Aminoacids and Proteins	Global	50% change
III	Green and Supra Molecular Chemistry	Unit-1 Green chemistry –I Unit -2 Green chemistry –II Unit-3 Supramolecular chemistry Unit-4 Green chemistry-III Unit-5 Graphene Functionalisation	National	20% change
IV	Organic chemistry III	Unit I-UV-Visible and IR Spectroscopy Unit II- NMR Spectroscopy Unit III- Planning an organic synthesis and control elements	Global	40% change

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		Unit V- Pericyclic Reactions Unit V – Organic Photo chemistry		
IV	Inorganic Chemistry III	Unit I-Coordination Chemistry Unit II-Stability of complexes and design of specialized ligands Unit III-Non-aqueous solvents Unit IV-Chemistry of d-block and f-block elements. Unit V-Electron transfer and photochemical reactions in complex	Global	80% change
IV	Physical chemistry III	Unit I- Surface Chemistry –combined unit II&III of old syllabus and modified Unit II-Kinetics of fast reactions and catalysis- 2.7 to 2.11 from unit II of old syllabus. Unit III-Irreversible Thermodynamics Unit IV- Statistical Thermodynamics Unit V-Polymer Chemistry –deleted 5.3 to 5.6 and added Dendrimers 5.6 to 5.10	Global	40% change
IV	Research Methodology	I. Literature Searching and Preparation of Project Report II. Statistical Analysis and Cheminformatics III. Artificial Intelligence and its application in Chemistry IV. Experiments on Analytical chemistry v. Intellectual Property Rights and Plagiarism	Global	60% change



**Practicals**

III	Inorganic Practical-II	Gravimetric Estimations and Preperation of Inorganic metal Complexes	Global	No change
III	Organic Practical -II	Estimation of organic substance and double stage preparation of a solid compound	Global	30% change
IV	Physical Practical	Physical Chemistry Experiments	Global	20% change