FEEDBACK ANALYSIS 2024-2025



Department of Chemistry

Feedback process



Department of Chemistry CHRIST (Deemed to be University), Bangalore – 560029

Curriculum feedback analysis for the academic year 2024 - 2025

The following report presents an analysis of the curriculum feedback received from various stakeholders, including students, teachers, alumni, and industry experts. The feedback highlights areas for improvement and recommendations for enhancing the curriculum to better align with industry needs, competitive exams, research advancements, and practical skill development.

Key Areas of Feedback and Recommendations

A) Student Feedback

- Strong demand for Nanoscience and Nanotechnology, Green Chemistry, Sustainability in Chemistry, and Advanced Chemistry Topics (Physical, Organic, Inorganic).
- Increased instrumentation skills development, particularly hands-on experience with spectroscopy, SEM, and chromatography techniques.
- Greater emphasis on regulatory affairs, quality assurance, and industrial roles to improve employability.
- Request for competitive exam-oriented teaching (CSIR-NET, GATE) through dedicated hours or problem-solving discussions.
- Need for a more application-based and skill-oriented approach rather than purely theoretical learning.
- Greater focus on interdisciplinary approaches, linking chemistry with life sciences and other fields.
- Suggestions for more industrial visits and proper placement guidance, as industry participation in placement has been low.
- Calls for curriculum restructuring to reduce topic repetition, particularly in Materials Chemistry.

- Proposal for specialized elective sessions rather than generalized ones, with a preference for interactive industry talks and hands-on training.
- Requests to balance theoretical and laboratory components, ensuring students apply what they learn in practical sessions.
- Need for Quantum Mechanics and Spectroscopy insights as they form the foundation for competitive exams.
- Calls for the inclusion of emerging research areas such as Quantum Dots, Fluorescence, MOFs, Supramolecular Chemistry.

B) Faculty members Feedback

- Major revisions in MSc Materials Chemistry syllabus to enhance both theory and practical components.
- Integration of Artificial Intelligence (AI) in Chemistry, particularly in research, analytical chemistry, and synthesis.
- Inclusion of Quantum Technologies, Energy Technologies, and Display Technologies in the syllabus.
- Addition of Forensic and Toxicological Analysis, Green Analytical Chemistry, and Biomaterials/Biopolymers as electives.
- Incorporation of CSIR-NET and JAM-related questions in assessments to aid student preparation.
- Calls for more research-oriented laboratory practicals with exposure to advanced experiments.
- Suggestions to integrate Indian Knowledge Systems into the curriculum.

C) Alumni Feedback

- Strong recommendation for NET/GATE/CSIR competitive exam preparation sessions within the curriculum.
- Analytical Chemistry syllabus requires practical component upgrades to align with industry advancements.
- Exposure to advanced instrumentation (GC-MS, UV-Vis, TLC, SEM, XRD) to bridge theory-practice gaps.

Specific concerns regarding repetitive experiments from UG levels limiting exposure to new analytical techniques.

D) Industry Experts Feedback

- > Introduction of Electroorganic Chemistry and Electrochemistry topics.
- Basic understanding of AI-assisted molecular structure determination, reflecting 2024 Nobel Prize research.
- Inclusion of automated purification techniques (e.g., Biotage, Combiflash) and chromatographic advancements.
- Expansion of photoredox chemistry and industrially relevant coupling reactions (Buchwald, Ullmann, Pd, and Cu catalysis).
- Greater emphasis on Mass Spectroscopy and Circular Dichroism, especially for Analytical Chemistry.
- Small module on Drug Discovery under Bio-organic Chemistry.
- Inclusion of Good Laboratory Practice (GLP), Good Manufacturing Practice (GMP), and data integrity topics to enhance industry readiness.

Actions to be Taken Based on Feedback

Based on stakeholders' feedback, the BOS modified and approved the curriculum to accommodate the most relevant and critical changes. The following courses have been included in the syllabus based on the input.

Undergraduate Curriculum

- > Major Core papers were incorporated in the 5th and 6th Semester for Undergraduate NEP
 - Organic Chemistry-III: Natural Products and Organic Spectroscopy CHE301-5
 - Inorganic Chemistry -II: Inorganic and Organometallic Chemistry CHE302-5
 - Physical Chemistry-II: Electrochemistry and Molecular Spectroscopy CHE303-5
 - Nanomaterials for Energy applications CHE302-6
 - Green Chemistry for Sustainable Development CHE303-6

Postgraduate Curriculum

- > Major Core papers were incorporated in the 3rd and 4th Semester for the Postgraduate course
 - Advanced Analytical Techniques MAC502-3
 - Principles of Chemical Analysis MAC503-3

- Chemistry of Materials MAC504-3
- Analytical Chemistry Practical I MAC511-3
- Analytical Chemistry Practical II MAC512-3
- Organic Reaction Mechanisms and Heterocyclic compounds MOC503-3
- Medicinal and Natural Products Chemistry MOC504-3
- Organic Chemistry Practical I MOC511-3
- Organic Chemistry Practical II MOC512-3
- Analytical Chemistry Practical I MCH511-3
- Organic Chemistry Practical II MOC512-3
- Organic Chemistry IV MCH501-4
- Spectroscopy I MCH404-2
- Inorganic Chemistry Practical II MCH411-2
- Physical Chemistry Practical MCH412-2
- Material Chemistry Practical I MMC511-3
- Material Chemistry Practical II MMC512-3
- Material for Sustainable Energy MMC501-4
- ➤ Value-added course on Introduction to Research in Chemical Sciences MCH482-1
- ▶ Value-added course on Scientific writing and communication MCH482-2
- ▶ Ability enhancement compulsory course on Mathematics for Chemists MCH481-1
- > Ability enhancement compulsory course on Computers for Chemists MCH481-2
- Introduced compulsory Research Project MCH583-4

Student Feedback 2025

57 responses

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57 responses

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Sriraksha S

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Dhyana Buch

Prerna kumari

Nayana R

Ruksana G

ABHINAND A

Anjana S

Elizabeth Joseph

Meenakshi Nambiar

Bhuvan Raj K

Meera Menon

Bhagyashree Bhat

Varmitha Manya Aithal

Jayanth John Jacob

Nandana Jayan

Dhruthi K

James Jenny

SURYA JOTI DEY

S. Sahana

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Akhila P

Kulandai Therasa L

Andria Anna alex

NIVEDHYA U K

Muskan

Aakash V

Sandeep Saxena K

Srijoyee Sikder

Meera Vishnu

Debanjan Dutta

Sanjana Madhavan

Shashikumar M G

Register Number

57 responses





57 responses



Does the curriculum cover advanced topics?





Сору







Any suggestions/additions or incorporation to the syllabus/curriculum

57 responses

No suggestions

No

Nothing

None

Introduction of nano science in the course Green chemistry Advanced Physical chemistry, organic chemistry and inorganic chemistry topics Sustainability in chemistry

Instrumentation skill development

NA

If more weight age is given on regulatory affairs, quality assurance related topics it would really help students looking for QA, QC and Regulatory affair roles in industry.
Competitive exam oriented teaching, maybe dedicated hour in timetable or even just discussing questions at the end of each topic, would help students know how to apply their understanding in solving problems.

Introduction of nano science in the course , topics on Sustainability in chemistry

Syllabus is fine. But I was hoping for separate CSIR NET classes which would have been practically helpful for furthering my research.

Studies on nanotechnology, green chem etc can be added and also upgrade the present syllabus into a more skill based one by introducing application based chemistry needed to

To coordinate with the life sciences department regarding the scheduling of practicals as several times there have been overlap between the two departments endsem practical exams (which would get rectified eventually, but it would better to not let this happen in the first place to avoid confusion and panic)

its tougher for people who arent interested in chemistry

More importance to skill based learning, and industrial exposure. Proper orientation towards job market and future opportunities should be provided. Internship had to be there at the end of 4th semester. More industrial visits and proper placement guidance.

Please add a nano science course and add advanced physical chemistry organic and inorganic topics

More of an interdisciplinary approach, for example, how chemistry is used in particular fields of biological research or specific niches of chemistry, chemistry electives can be revolved around those instead of more generalized topics, since our degree involves both life sciences and chemistry, this would better orient us towards interdisciplinary research

Although the theory aspect of the curriculum is very helpful the practical application and practical part of it could be better implemented. And also more weightage could be given towards sustainablity aspects in the field of chemistry in the syllabus.

More opportunity to learn and handle advanced instruments (such as spectroscopy, SEM, etc.)

Syllabus should be modified and practical should be more advanced and give importance to learn instruments.

Nothing

Can give more in hand instrument study rather than theory classes

More in depth study of topics in the syllabus

It will be better if teacher gives teaching in perspective of compitative exam also . if not in detail but just an idea of topics and a type of questions . it would help us devlop ability to understand question and apply the learned syllabus to solve them .

Introduction of sustainability in chemistry and advanced Green chemistry will be very helpful if introduced in the curriculum

Syllabus for Material Chemistry requires serious modifications, many topics are repeating within various papers in a semester & repeating for 3rd and 4th semester as well. I suggest to incorporate more in depth Material Science topics rather than brushing through the surface of various topics

rearrange the hectic schedules and give the student some time to relax

Classes focusing on hands on experience on the instrumentations apart from the once used in labs. Would immensely help in adding such skills in a CV

Elective classes in the 4th semester - Perhaps more hours for the combined session wherein

people from outside talk about a specific topic. Also specifically to the industrial elective - imo the syllabus is kinda outdated and has a huge room for improvement. The least one can expect is to not only focus on PHARMACEUTICAL INDUSTRIES. There are a lot of more industries where a degree in Chemistry would be preferred.

Advanced studies into green chemistry and sustainability in chemistry

Would prefer Theoretical aspects and laboratory aspects go hand in hand in the sense, we perform what we learn the theory of in the same semester.

Would be helpful if the curriculum includes a hands on experience on certain instruments required for industry or research.

Elective classes with just theoretical explanations or IV sounds insufficient, would rather prefer a hands on training of certain industry aspects.

Hope more talks or activities are arranged for students as per the specialization chosen rather than being forced to attend a session irrelevant to the specialization chosen.

We were given hope about placements being good, but to our fate, there were hardly any industry coming for placements for a MSc Chemistry student. Most placements were for someone with a Commerce background or those who are interested in teaching. I hope students get placements options other than teaching too and I hope they are related to our field of study!

In Materials Chemistry kindly please include more advanced topics from Material Sciences and Physics. Even though it is interdisciplinary it's relavent to the current society.

nil

Good

Everything was alright

Topics regarding sustainable technology and the increase in efficiency of this technology can be introduced into the syllabus as these are very relevant in the modern world.

No suggestions

Curriculum is not good

need for application based learning

Kindly include topics from quantum mechanics because it form the basis for all competitive exams

And little higher level of organic chemistry with deep insights into Spectroscopic techniques can be included

Give a brief idea on the current growing area of research to promote more research oriented studies (topics such as quantum dots, Fluorescence, MOFs, Supramolecular Chemistry etc)

Everything was satisfactory, no suggestions as such.

More emphasis on green chemistry

Everything is good

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Faculty Feedback

16 responses

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16 responses

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Feedback







Potential new courses that could be incorporated into the curriculum. (Please include link to syllabus available at other universities, if available)

9 responses

NA

A major changes need to have in MSc materials chemistry syllabus both in theory and practical

Introduction to artificial intelligence with connection to chemistry can be introduced

Display technologies, energy technologies, quantum technolgies

Forensic and Toxicological Analysis, Green Analytical Chemistry

Could incorporate CSIR-related questions while preparing the question paper. Portions from CSIR could be incorporated in the syllabus.

A course on biomaterials/biopolymers can be incorporated (as elective)

Influence of AI in chemistry

Nanoscience and nanotechnology, Green Chemistry and Sustainability

Are there any emerging trends/skills/knowledge areas that could be incorporated in our programme?

8 responses

NA

Including Indian Knowledge System in present curriculum can bring positive changes in present generation.

JAM exam and CSIR coaching classes can be planned

Laboratory practical's need to be interconnected with research, we need to provide latest experiments to our students

Artificial Intelligence (AI) and Machine Learning in Analytical Chemistry, Advanced Forensic Analytical Techniques, Bioanalytical and Biomedical Applications

AI and Machine Learning in Synthesis and other realms of Chemistry

AI in research

Nanoscience and nanotechnology, Green Chemistry and Sustainability

General Comments and Suggestions (For all the course)

5 responses

Need to revise materials chemistry syllabus

Curriculum is good but continuous improvement is essential.

Skill Development & Practical Exposure should be more

Great Curriculum

Very good

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Alumni Feedback 2025

13 responses

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13 responses	
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Feedback







General comments and suggestions

5 responses

It would be better if NET topics and preparation for competitive exams are included

Need to include separate hours for preparing students for competitive exams like GATE, CSIR NET , DRDO and so on .

The practical component of the Analytical Course requires updating to keep pace with advancements in the field. The current curriculum lags behind, with certain experiments being repeated from the undergraduate level, limiting exposure to new analytical techniques.

To enhance learning outcomes, the inclusion of advanced instrumentation such as GC-MS, UV-Vis,TLC, SEM, and XRD is strongly recommended. Given that analytical students transition into instrument handling (e.g., XRD, SEM, Raman), it is essential that they at least receive demonstrations on these instruments using the samples they synthesize in the lab. This hands-on exposure will bridge the gap between theoretical concepts and practical applications, better preparing students for research and industry roles, Specially for analytical.

Good and updated syllabus.

good

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Industry/Employer Feedback_2025

5 responses

Publish analytics Name 5 responses Dr. Manoj kumar singh Anthappan Tonykurissery Shreeranga N Sriram Krishnan Gururaj M Shivashimpi Name of the organization 5 responses 2 2 (40%) 1 1 (20%) 1 (20%) 1 (20%) 0 Aurigene Pharmaceutical Services Limited SudhiShubha ChemSynthons MicroLabs Syngene International... UNIVE S Ametalonque CHA lepartm Chemistry Head angalor

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5 responses

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Feedback







General comments and suggestions

5 responses

I am happy to see the efforts taken by Christ university to produce a industry ready students who want to make a carrier into the industry apart from that the syllabus is helpful to make a good research scientist.

In general, the syllabus looks appropriate for PG level. I have only a few suggestions, primarily on the organic chemistry part listed below.

Electro organic chemistry along with Electrochemistry

Basic understanding on AI assisted protein structure determination (2024 Nobel prize concept) along with

AI-Assisted Molecular Structure Determination

Basic understanding on the automated purification techniques (Biotage @ https://www.biotage.com/, Combiflash etc), HPLC principles, various stationary phases in column chromatography, comparison of various stationary phases etc in # Chromatography.

The resources (course material and videos) available in Biotage is beneficial

Some advances in photo redox chemistry (Eg: Ni catalysed attached) Photochemistry

Adding a few most commonly used Pd and Cu coupling reactions in industry, such as Buchwald couplings, Ullmann coupling etc, along with advancements in Pd catalysis with new generations of phosphine ligand, will be helpful

Name Reactions and rearrangements

MSc Analytical chemistry syllabus. Second semester in structure and bonding the concept of Circular Dichroism is mentioned and chirality is mentioned. The hours dedicated for this topic is very less and this portion has to elaborated more as the drug discovery is moving towards Super Critical Fluid chromatography and CD confirmation with FTIR for chiral purity, I think it would be great if these topics are introduced in it.

In the same syllabus an extensive coverage of all the spectroscopic methods is there except Mass Spectroscopy. It will be good if we include it.

In Bio-organic section can we introduce a small topic on Drug discovery?

In all the syllabus request to include safety aspects like GLP and GMP, data integrity which will be of a great help to students.

It's a good curriculum

Most of the things are upto mark and BSc syllabus I didn't find any space to improve/suggestions. This is completely fine.

For MSc Semister I-IV, I have some suggestions which I have highlighted in the files attached with yellow color. I think these should be added.

Secondly, I didn't see any C-C and C-N cross coupling reactions and catalysts used are not found in any section. Please add these coupling reactions along with Pd, Ni an Cu catalyzed

reactions as these are often used in Industry.

Otherwise everything is fine.

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