



**SRM University, Delhi-NCR, Sonapat, Haryana**

**Faculty of Science & Humanities**

**Department of Chemistry**

**Minutes of the Meeting (MoM) of 7<sup>th</sup> Board of Studies (BoS) of Department of Chemistry held on 10<sup>th</sup> August, 2023 from 11:00 am onwards.**



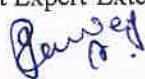
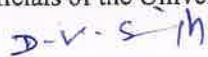




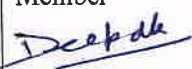
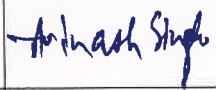
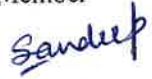

# SRM University, Delhi-NCR, Sonapat, Haryana

## Faculty of Science & Humanities

### Department of Chemistry

A meeting of 7<sup>th</sup> Board of Studies (BoS) of the Department of Chemistry was held on 10<sup>th</sup> August, 2023 at 11:00 AM onwards in Room No. 303, Engineering Block, SRMUH.

The following members were present:

Prof. Rakesh Dube Dean-Faculty of Science & Humanities SRM University, Delhi-NCR, Sonapat, Haryana	Chairman 
Prof. Rakesh Kumar Sharma Department of Chemistry University of Delhi	Subject Expert- External Member 
Prof. Geetanjali Department of Chemistry Karori Mal College, University of Delhi	Subject Expert-External Member 
Prof. D.V. Singh University Librarian SRM University Delhi-NCR, Sonapat, Haryana	Officials of the University 
Mr. Vikram Barara Controller of Examination SRM University Delhi-NCR, Sonapat, Haryana	Officials of the University 
Dr. Pawan Kumar Singh Associate Professor & Head, Department of ECE SRM University, Delhi-NCR, Sonapat, Haryana	Representative of Dean Academic Affairs 
Dr. Prashant Kumar Assistant Professor, Dept. of Chemistry SRM University, Delhi-NCR, Sonapat, Haryana	Member 
Dr. Naresh Kumar Assistant Professor, Dept. of Chemistry SRM University, Delhi-NCR, Sonapat, Haryana	Member 
Dr. Deepak Mishra Assistant Professor, Dept. of Chemistry SRM University, Delhi-NCR, Sonapat, Haryana	Member 
Dr. Avinash Singh Assistant Professor, Dept. of Chemistry SRM University, Delhi-NCR, Sonapat, Haryana	Member 
Dr. Sandeep Sharma Assistant Professor, Dept. of Chemistry SRM University, Delhi-NCR, Sonapat, Haryana	Member 
Dr. Ajit Kumar Associate Professor & Head, Dept. of Chemistry SRM University, Delhi-NCR, Sonapat, Haryana	Convener 

Prof. Rakesh Dube, Dean-Science & Humanities chaired the meeting and welcomed all the members to the BoS meeting of Department of Chemistry and thanked each of them for sparing their valuable time to attend the meeting. Dr. Ajit Kumar showed gratitude and pleasure and introduced the members of BoS.

The agenda items listed below were take-up in order:

**Agenda Item-1:** Updation/revision in the course curriculum of B.Sc. Chemistry - Programme w.e.f. the Academic Year 2023 – 2024 as per NEP-2020 guidelines.

**Agenda Item-2:** Updation/revision in the course curriculum of M.Sc. Chemistry - Programme w.e.f. the Academic Year 2023 - 2024.

**Agenda Item-3:** Updation/revision in the course curriculum of Ph.D. in Chemistry - Programme w.e.f. the Academic Year 2023 - 2024.

**Agenda Item-4 :** Revision of Course of Engineering Chemistry of B.Tech 1<sup>st</sup> Year (all Branches) w.e.f. Academic Year 2023-24.

**Agenda Item-5:** Any other item with the permission of Chair.

The agenda items listed above were taken up for discussion and the following resolutions were passed.

S.No.	Agenda Item	Discussion/Recommendations	Status/Remarks
1	Updation/revision in the course curriculum of B.Sc. Chemistry- Programme w.e.f. the Academic Year 2023 – 2024 as per NEP-2020 guidelines	Unit wise all the Courses were discussed and corrections were suggested.	All the corrections are incorporated. Curriculum recommended.
2	Updation/revision in the course curriculum of M.Sc. Chemistry- Programme w.e.f. the Academic Year 2023 - 2024.	Unit wise all the Courses were discussed and corrections were suggested.	All the corrections are incorporated. Curriculum recommended.
3	Updation/revision in the course curriculum of Ph.D.inChemistry- Programme w.e.f. the Academic Year 2023 - 2024.	Curriculum discussed and recommended	Recommended.
4	Revision of Course of Engineering Chemistry of B.Tech 1 <sup>st</sup> Year (all Branches) w.e.f. Academic Year 2023-24	Unit wise all the Courses were discussed and corrections were suggested.	All the corrections are incorporated. Curriculum recommended.

BoS- MoM (Chemistry Dept)

Date: 10<sup>th</sup> August, 2023, 11:00 am Page 3

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*Dr. Singh*

The Honourable VC is authorised to make changes mutatis mutandis in the syllabi on the recommendations of concerned Dean and Dean Academic Affairs.

The meeting concluded with a vote of thanks by Dr. Ajit Kumar, Convenor of the Board of Studies.

		
(Prof. Rakesh Dube) Chairman- BoS	(Prof. Rakesh Kumar Sharma) Subject Expert-External Member	(Prof. Geetanjali) Subject Expert-External Member
		
(Mr. Vikram Barara) COE	(Dr. Pawan Kumar Singh) Representative of Dean Academic Affairs	(Prof D.V. Singh) University Librarian
		
(Dr. Prashant Kumar) Member	(Dr. Naresh Kumar) Member	(Dr. Deepak Mishra) Member
		
(Dr. Avinash Singh) Member	(Dr. Sandeep Sharma) Member	(Dr. Ajit Kumar) Convener



Dean-Academic Affairs

### Annexure-II

S. No.	Course/Sem	Remarks	Status
1	UG Sem I	• Physical Chemistry Practical I experiments should be split into two simple experiments. Syntax errors should be rectified.	Done
2	UG Sem II	• In Organic Chemistry I syllabus, Unit IV Chromatography should be replaced by Aromatic Hydrocarbons. Syntax errors should be rectified.	Done
3	UG Sem III	• Nanochemistry Minor course is added and modified according to curriculum.	Done
4	UG Sem IV	• In Physical Chemistry Practical IV, Experiments should be modified.	Done
5	UG Sem V	• In Organic Chemistry IV Nitro and Nitrite compounds should be added. • Syntax errors should be added.	Done
7	M.Sc. Sem-III	• In Photochemistry & Pericyclic Reactions, 2,3 and 9,9 sigmatropic rearrangement is added. • In Inorganic & Physical Spectroscopy, Recapitulation of Vibrational Spectroscopy is added in unit I.	Done
8	M.Sc. Sem-IV	• In place of chemistry in Industry & Environment a new course of Retrosynthesis and Disconnection Approach was introduced. • Chemistry in Industry & Environment is offered as DSE in semester IV. • In Nuclear & Solid State Chemistry 2 <sup>nd</sup> unit of Nuclear Chemistry is added and 4 <sup>th</sup> unit of Preparation Techniques is removed.	Done
9	BSc & MSc	• Unit wise no. of hours should be mentioned in the syllabus. • In all the practical courses, the statement " <i>number and nature of experiments can vary as per the availability of chemicals</i> ".	Done
11	B.Tech. Chemistry	No. of lecture per unit should be added. Reference books should be added.	Done
12.	PhD	No. of lecture per unit should be added.	Done

We have rectified the syllabus of aforesaid courses as per suggestion of Subject Experts.

- New course codes with 23CYBSXXX and 23CYMSXXX was added for all the courses of BSc and MSc program respectively.



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## ANNEXURE-II

First Year First Semester								
S. No.	Course Code	Course Title	L	T	P	Credits	Course Category	Remarks
1	23CYBS101	Inorganic Chemistry-I (Atomic Structure and Chemical Bonding)	4	0	0	4	Major Course	
2	23CYBS102	Physical Chemistry-I (Gaseous State and Kinetics)	4	0	0	4	Major Course	
3	23CYBS151	Practical Inorganic Chemistry-I	0	0	4	2	Major Course Lab	
4	23CYBS152	Practical Physical Chemistry-I	0	0	4	2	Major Course Lab	
5		MDC#	3	0	0	3	Multidisciplinary Course	
6	23UAEC101	Functional English-I	2	0	0	2	Ability Enhancement Course	
7		Effective Communication Skills	0	0	2	1	Skill Enhancement Course (Soft)	
8		Digital Literacy & IT Skills	0	0	2	1	Skill Enhancement Course (Tech)	
9		Indian Constitution & Polity	2	0	0	2	Value Added Course	
<b>TOTAL</b>						<b>21</b>		
# Multidisciplinary Course List is attached separately, and a course shall be offered only when there is sufficient number of students opt for it								

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First Year Second Semester								
S. No	Course Code	Course Title	L	T	P	Credits	Course Category	Remarks
1	24CYBS201	Organic Chemistry-I (Basic Concepts in Organic Chemistry)	4	0	0	4	Major Course	
2	23CYBS202	Physical Chemistry-II (Solid & Liquid State and Equilibria)	4	0	0	4	Major Course	
3	23CYBS251	Practical Organic Chemistry-I	0	0	4	2	Major Course Lab	
4	23CYBS252	Practical Physical Chemistry-II	0	0	4	2	Major Course Lab	
5		MDC#	3	0	0	3	Multidisciplinary Course	
6	23UAEC201	Functional English-II	2	0	0	2	Ability Enhancement Course	
7		Advanced Excel Skills	0	0	2	1	Skill Enhancement Course (Soft)	
8		Teamwork & Interpersonal Skills	0	0	2	1	Skill Enhancement Course (Tech)	
9		Environment Protection & Sustainable Development	3	0	0	2	Value Added Course	
10	23CYBS271	Live Projects/Vocational Courses/Summer Internship				4	Live Projects/Vocational Courses/Summer Internship	
TOTAL						25		
# Multidisciplinary Course List is attached separately, and a course shall be offered only when there is sufficient number of students opt for it								
* Students would do Live Project/Vocational Course/Summer Internship of 4 Credits during Summer term of 6 to 8 weeks								
On Exit, students shall be awarded UG Certificate (in Chemistry) on securing the requisite 46 Credits on completion of II-Semester.								

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Second Year Third Semester								
S. No.	Course Code	Course Title	L	T	P	Credits	Course Category	Remarks
1	23CYBS301	Inorganic Chemistry-II (Chemistry of s and p-block Elements)	4	0	0	4	Major Course	
2	23CYBS302	Organic Chemistry-II (Haloalkanes, Haloarenes and Oxygen Containing Functional Groups)	4	0	0	4	Major Course	
3	23CYBS351	Practical Inorganic Chemistry-II	0	0	4	2	Major Course	
4	23CYBS352	Practical Organic Chemistry-II	0	0	4	2	Major Course	
5	23CYBS303	Introduction of Nanochemistry and its applications	2	0	2	4	Minor Stream Course	
6		MDC-3	3	0	0	3	Multidisciplinary Course	
7	23UAEC301/401	Hindi/French/German	2	0	0	2	Ability Enhancement Course	Either Sem Course
8		Presentation Skills	0	0	2	1	Skill Enhancement Course (Soft)	
9		Statistical Analysis with SPSS	0	0	2	1	Skill Enhancement Course (Tech)	
TOTAL						23		
# Multidisciplinary Course List is attached separately, and a course shall be offered only when there is sufficient number of students opt for it								

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### Second Year Fourth Semester

S. No.	Course Code	Course Title	L	T	P	Credits	Course Category	Remarks
1	23CYBS401	Inorganic Chemistry-III (d & f block elements and Coordination Chemistry)	4	0	0	4	Major Course	
2	23CYBS402	Physical Chemistry-III (Phase Transition and Chemical Thermodynamics)	4	0	0	4	Major Course	
3	23CYBS451	Practical Inorganic Chemistry-III	0	0	4	2	Major Course	
4	23CYBS452	Practical Physical Chemistry-III	0	0	4	2	Major Course	
5	23CYBS403	Analytical Methods in Chemistry	4	0	0	4	Minor Stream Course	
6		Professional Skills	0	0	2	1	Skill Enhancement Course (Soft)	
7		R Language Programming	0	0	2	1	Skill Enhancement Course (Tech)	
8		Sports, Yoga & Fitness				2	Value Added Courses	
9	23UAEC301/401	Hindi/French/German	2	0	0	2	Ability Enhancement Course	Either Sem Course
10	23CYBS471	Live Projects/Vocational Courses/Summer Internship				4	Live Projects/Vocational Courses/Summer Internship	
<b>TOTAL</b>						<b>26</b>		
* Students would do Live Project/Vocational Course/Summer Internship of 4 Credits during Summer term of 6 to 8 weeks								
On Exit, students shall be awarded UG Diploma (in Chemistry) on securing the requisite 95 Credits on completion of IV-Semester.								




### Third Year Fifth Semester

S. No.	Course Code	Course Title	L	T	P	Credits	Course Category	Remarks
1	23CYBS501	Organic Chemistry-III (Heterocyclic Chemistry, Nitrogen Containing Functional Groups and Polynuclear Hydrocarbons)	4	0	0	4	Major Course	
2	23CYBS502	Physical Chemistry-IV (Electrochemistry, Surface Chemistry & Photochemistry)	4	0	0	4	Major Course	
3	23CYBS503	Inorganic Chemistry-IV (Organometallics and Bioinorganic Chemistry)	4	0	0	4	Major Course	
4	23CYBS551	Practical Organic Chemistry-III	0	0	4	2	Major Course	
5	23CYBS552	Practical Physical Chemistry-IV	0	0	4	2	Major Course	
6	23CYBS504	Medicinal Chemistry	2	0	2	4	Minor Stream Course	
7	23CYBS505	Biomolecules of Life	4	0	0	4	Minor Stream Course	
8		Aptitude & Reasoning	0	0	2	1	Skill Enhancement Course (Soft)	
9		Programming with MATLAB	0	0	2	1	Skill Enhancement Course (Tech)	
TOTAL						26		




### Third Year Sixth Semester

S. No.	Course Code	Course Title	L	T	P	Credits	Course Category	Remarks
1	23CYBS601	Organic Chemistry-IV (Spectroscopy and its applications)	4	0	0	4	Major Course	
2	23CYBS602	Physical Chemistry-V (Fundamentals of Molecular Spectroscopy)	4	0	0	4	Major Course	
3	23CYBS603	Fundamentals of Quantum Chemistry	4	0	0	4	Major Course	
4	23CYBS651	Practical Organic Chemistry-IV	0	0	4	2	Major Course	
5	23CYBS652	Practical Physical Chemistry-V	0	0	4	2	Major Course	
6	23CYBS604	Computers for Chemist	2	0	2	4	Minor Stream Course	
8	23CYBS571	Live Projects/Vocational Courses/Summer Internship				4	Live Projects/Vocational Courses/Summer Internship	
<b>TOTAL</b>						<b>24</b>		

Students would do Summer Internship of 4 Credits during Summer term of 6 to 8 weeks

On Exit, students shall be awarded UG Degree (in Chemistry) on securing the requisite 145 Credits on completion of VI-Semester.

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Fourth Year Seventh Semester								
S. No.	Course Code	Course Title	L	T	P	Credits	Course Category	Remarks
1	23CYBS701	Reagents and Chemical Processes	3	0	1	4	Major Course	
2	23CYBS702	Polymer and Colloidal Chemistry	3	0	1	4	Major Course	
3	23CYBS703	Green Chemistry	4	0	0	4	Major Course	
4	23CYBS704	Energy & Environment*	2	0	0	2	Minor Course*	Students pursuing Honours
5	23CYBS705	Research Methodology#	2	0	0	2		Students pursuing PR
6	23CYBS706	Research Project	3	1	0	4	Research Project/Dissertation #	
TOTAL						18		
<p>* Students pursuing Honours will do 1 Course of 2 Credits in lieu of Research Project in 7th Semester &amp; 4 Credit Dissertation</p> <p># Students pursuing Honours with Research will do 6 Credits RP/Dissertation (2 Credit RM &amp; 4 Credit Research Project)</p>								

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Fourth Year Eighth Semester								
S. No.	Course Code	Course Title	L	T	P	Credits	Course Category	Remarks
1	23CYBS801	Novel Inorganic Solids	3	0	1	4	Major Course	
2	23CYBS802	Metals in Medicine	2	0	2	4	Major Course	
3	23CYBS803	Inorganic Materials and its Industrial Importance	3	0	1	4	Major Course	
4	23CYBS804	Pharmaceutical Chemistry	4	0	0	4	Minor Course*	Students pursuing Honours
5	23CYBS805	Artificial Intelligence & Machine Learning in Chemistry	1	0	1	2	Minor Course*	Students pursuing Honours
6	23CYBS871	Research Project				6	Research Project/Dissertation	Students pursuing RP
TOTAL						18		
* Students pursuing Honours will do 2 Courses of 6 Credits in 8th Semester # Students pursuing Honours with Research would complete 6 Credits of Research/Dissertation in the 8th Semester								

On Exit, students shall be awarded Bachelor Degree (in Chemistry) (Honours with Research) or (Honours) after securing the requisite 181 Credits on completion of VIII-Semester.

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### SEMESTER-I

Code	Category	Course	L	T	P	C
<b>Theory</b>						
23CYMS101	CORE	Inorganic Chemistry-I (Co-ordination and Rare Earth Metals)	4	0	0	4
23CYMS102	CORE	Organic Chemistry-I (GOC and Stereochemistry)	4	0	0	4
23CYMS103	CORE	Physical Chemistry-I (Quantum Chemistry and Chemical Kinetics)	4	0	0	4
23GECY101/ 23GECY102	GE	GE-I	4	0	0	4
<b>Practical</b>						
23CYMS151	CORE	Inorganic Chemistry Practical –I	0	0	4	2
23CYMS152	CORE	Organic Chemistry Practical -I	0	0	4	2
23CYMS153	CORE	Physical Chemistry Practical –I	0	0	4	2
Total			16	0	12	22
Total Contact Hours			330			




**SEMESTER-II**

Code	Category	Course	L	T	P	C
<b>Theory</b>						
23CYMS201	CORE	Inorganic Chemistry-II (Organometallic Chemistry)	4	0	0	4
23CYMS202	CORE	Organic Chemistry-II (Organic Spectra and Reagents)	4	0	0	4
23CYMS203	CORE	Physical Chemistry-II (Statistical Thermodynamics & Electrochemistry)	4	0	0	4
23GECY201/ 23GECY202	GE	GE -II	4	0	0	4
<b>Practical</b>						
23CYMS251	CORE	Inorganic Chemistry Practical-II	0	0	4	2
23CYMS252	CORE	Organic Chemistry Practical -II	0	0	4	2
23CYMS253	CORE	Physical Chemistry Practical -II	0	0	4	2
Total			16	0	12	22




**SEMESTER-III**

Code	Category	Course	L	T	P	C
<b>Theory</b>						
23CYMS301	CORE	Structure and Mechanism in Organic Chemistry	4	0	0	4
23CYMS302	CORE	Inorganic and Physical Spectroscopy	4	0	0	4
23CYMS303	CORE	Bio-Inorganic and Bio-Organic Chemistry	4	0	0	4
23CYMS304	CORE	Photochemistry and Pericyclic Chemistry	4	0	0	4
23CYMS305 A/B/C	DSE	DSE-I	4	0	0	4
<b>Practical</b>						
23CYMS351	CORE	Chemistry Practical III	0	0	4	2
23CYMS352	CORE	Chemistry Practical IV	0	0	4	2
<b>Total</b>			<b>20</b>	<b>0</b>	<b>8</b>	<b>24</b>




**SEMESTER-IV**

Code	Category	Course	L	T	P	C
<b>Theory</b>						
24CYMS401	CORE	Applications of Group Theory in Chemistry	4	0	0	4
24CYMS402	CORE	Natural Products and Protecting Agents	4	0	0	4
23CYMS403	CORE	Retrosynthesis and Disconnection Approach	4	0	0	4
23CYMS404 A/B/C	DSE	DSE-II	4	0	0	4
<b>Project</b>						
23CYMS471	CORE	Project	6	0	0	6
		<b>Total</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>22</b>




**LIST OF DISCIPLINE SPECIFIC ELECTIVE COURSES**

Code	Category	Course	L	T	P	C
<b>Discipline Specific Elective-I</b>						
<b>23CYMS305A</b>	DSE	Green Chemistry	4	0	0	4
<b>23CYMS305B</b>	DSE	Analytical Chemistry	4	0	0	4
<b>23CYMS305C</b>	DSE	Pharmaceutical Chemistry	4	0	0	4
<b>Discipline Specific Elective-II</b>						
<b>23CYMS404A</b>	DSE	Polymer Science & Medicinal Chemistry	4	0	0	4
<b>23CYMS404B</b>	DSE	Chemistry in Industry and Environment	4	0	0	4
<b>23CYMS404C</b>	DSE	Nuclear Chemistry & Solid State	4	0	0	4



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**LIST OF GENERIC ELECTIVE COURSES**

Code	Category	Course	L	T	P	C
<b>Generic Elective-I</b>						
<b>23GECY101</b>	GE	Mathematics for Chemists	4	0	0	4
<b>23GECY102</b>	GE	Biology for Chemists	4	0	0	4
<b>Generic Elective-II</b>						
<b>23GECY201</b>	GE	Computers for Chemists	4	0	0	4
<b>23GECY202</b>	GE	Intellectual Property Rights	4	0	0	4

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**Annexure-IV**

S. No.	Paper/ Unit	Remarks	Status
1	B.Sc. Hons Sem I	In Physical chemistry add liquefaction of gases, add latest addition of books	Done
2	B.Sc. Hons Sem II	Add CMC, add more reference book Shift conductance practical to physical chemistry-IV In organic chemistry add conformations of disubstituted cyclohexane, modify title of unit-3 as chemistry of alkanes and alkenes Shift alkyne from unit-3 to unit-4 and accordingly modify the name of unit In organic chemistry practical specify ethanol rather than writing alcohol	Done

Rectification is done in the syllabus of aforesaid courses as per suggestion of Subject Experts.

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### Annexure- V

S. No.	Paper/ Unit	Remarks	Status
1	M.Sc. Sem-I	In Physical Chemistry-I add 2D box in unit 1 Shift 3D box in unit-2 In unit 3, add some basics for revision	Done
2	M.Sc. Sem-II	In 2D spectroscopy add HSQC, HMBC, specify examples of some multistep reactions In GE-II, replace IPR by AI in chemical sciences and add one more course option	Done
3	M.Sc. Sem-III	In bio-inorganic add organ-selenium Add pyranose and furanose form of carbohydrates, Fischer projections of carbohydrates Add book of Finar volume-2 In inorganic chemistry practical add formation of Prussian blue formula preparation In organic chemistry practical write some name reactions	Done
4	M.Sc. Sem-IV	Write the DSE-II codes separately, Modify the name of group theory as "application of group theory in chemistry" Add reducible-irreducible representations, mutual-exclusion principle in group theory Add book group theory by Swarnlaxmi for reference	Done

Rectification is done in the syllabus of aforesaid courses as per suggestion of Subject Experts.




Annexure- V1

S. No.	Paper/ Unit	Remarks	Status
1	PhD	Add some recent review papers as reference in Supramolecular Chemistry	Done

Rectification is done in the syllabus of aforesaid courses as per suggestion of Subject Experts.

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Annexure-VII

S. No.	Paper/ Unit	Remarks	Status
1	B.Tech. Chemistry	Unit-0 is added, for the revision purpose.	Done

Rectification is done in the syllabus of aforesaid courses as per suggestion of Subject Experts.

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Annexure-VIII			
Department of Chemistry			
Courses Offered outside the Department			
Sl.No	Course Code	Course Name	Status
1	21OECY001	Physical Chemistry-I	No Changes
2	21OECY002	Inorganic Chemistry	No Changes
3	21OECY003	Physical Chemistry-II	No Changes
4	21OECY004	Analytical Chemistry	No Changes

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# ANNEXURE - IX



**SRM**  
UNIVERSITY  
DELHI-NCR, SONEPAT

SRM University, Delhi-NCR, Sonapat, Haryana

## Faculty of Science & Humanities

(Physics/Chemistry/Mathematics/Statistics/Food Technology/English/Foreign Language/Economics/Political Science/Psychology/Microbiology/Biotechnology)

### DIFFERENT PARAMETERS FOR CONTINUOUS EVALUATIONS AY 2021-22

#### 1. Theory Papers (40:60 Marks)

S. No.	Parameters	Numbers	Marks
1	Mid Semester Tests (MST)	2	20
2	Assignments	3 (Minimum)	10
3	Assignment based presentation/Project Based presentation/Presentation	1 (Minimum)	5
4	Class Test/Quizzes/Surprise Tests/Class Participation		5
TOTAL			40

#### 2. Practical/Workshop Papers (60:40 Marks)

Each experiment would be evaluated out of 10 (Ten) marks and average of all the experiments conducted should be taken and marks may be calculated /awarded out of 60.

S.No.	Parameters	Marks
1	Conducting experiment	3
2	Written test on already defined questions (3 to 4 questions)	2
3	Viva Voce	3
4	Lab record	2
TOTAL		10

#### 3. End Semester Practical/Workshop Papers (40:60 Marks)

S.No.	Parameters	Marks
1	Conducting experiment & validation	15
2	Write up	10
3	Viva Voce	10
4	Lab record	5
TOTAL		40

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#### 4. Soft Skills (70 : 30 Marks)

Internal (Continuous Assessment & Evaluation) & End Term (Assessment & Evaluation) for all the 4 courses are as under:

##### I. Effective Communication Skills Course

Unit No.	Unit Name	Internal Assessment Parameter	Internal Marks (70)	End Term Assessment Parameters	End Term Marks (30)
1	Verbal Communication Skills	Speech Activity	15	Written Test	10
2	Non Verbal Communication Skills	Role Play	15		
3	Listening Skills	Oral Assessment	10		
4	Reading Skills		10	Viva	20
5	Written Skills	Written Assignment	10		
6	Visual Communication		10		
TOTAL			70		30

##### II. Teamwork & Interpersonal Skills

Unit No.	Unit Name	Internal Assessment Parameter	Internal Marks (70)	End Term Assessment Parameters	End Term Marks (30)
1	Team Management	Role Play / Group Activity	10	Written Test	10
2	Time Management		10		
3	Leadership		10		
4	Stress Management	Assignment	10	Viva	20
5	Emotional Intelligence	Written Test	10		
6	Critical Thinking		10		
7	Problem Solving	Case Story Telling	10		
<b>TOTAL</b>			<b>70</b>		<b>30</b>

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### III. Teamwork & Interpersonal Skills

Unit No.	Unit Name	Internal Assessment Parameter	Internal Marks (70)	End Term Assessment Parameters	End Term Marks (30)
1	Presentation Skills	Presentation Activity	20	Written Test	10
2	Story Telling Skills	Speech Activity	15		
3	Corporate Culture Etiquettes	Assignment	10		
4	Debate/Extempore	Speech Activity	15	Viva	20
5	Art of Creating Impression		10		
TOTAL			70		30

### IV. Writing Skills & Interpersonal Skills: Strategies

Unit No.	Unit Name	Internal Assessment Parameter	Internal Marks (70)	End Term Assessment Parameters	End Term Marks (30)
1	Email Writing	Written Assignment	10	Written Test	10
2	Resume Writing		10		
3	Cover Letter Writing		10		
4	Group Discussion	Group Discussion Activity	15	Viva	20
5	Interview Skills	Mock Interview Activity	15		
6	Negotiation Skills	Role Play	10		
TOTAL			70		30

*ML* *Amit*

## 5. SUMMER INTERNSHIP PROJECT (60 : 40 Marks)

### I. Evaluation Parameter for Formative Assessment (Summer Internship Project)

Continuous Assessment will perform by respective faculty & Industry coordinators within stipulated time period. Evaluation Parameter classified as follows:

S. No.	Basis of Evaluation Parameter with Time frame	Marks
1.	Synopsis Presentation (Week 1 <sup>st</sup> )	20
2.	Relevance and linkage of the Identify issue with functional area of discipline (Week 1 <sup>st</sup> )	10
3.	Survey of Literature (Week 2 <sup>nd</sup> )	10
4.	Research Methodology & Data collection(3 <sup>rd</sup> to 4 <sup>th</sup> Week)	10
5.	Overall understanding of the area of study(3 <sup>rd</sup> to 4 <sup>th</sup> Week onwards)	10
	<b>Total Marks</b>	<b>60</b>

### II. Evaluation Parameter for End Term Assessment (Summer Internship Project)

S. No.	Basis of Evaluation Parameter	Marks
1.	Quality Of Content Design	10
2.	Identification of Contemporary Issue	10
3.	Innovation in learning Process	10
4.	Presentation of Content & Delivery Mechanism	10
	<b>Total Marks</b>	<b>40</b>

## 6. LIVE PROJECTS (60: 40 Marks)

### I. Continuous Evaluation: 60 Marks

S. No.	Parameters	Numbers	Marks
1	Use of Technology/ Identification of Projects		10
2	Project Presentation	2 Minimum	20
3	Viva -voce	2 Minimum	15
4	Project Report		15
	<b>TOTAL</b>		<b>60</b>

### II. End Term Evaluation: 40 Marks

S. No.	Parameters	Numbers	Marks
1	Written Examination (Based on Project)	1	20
2	Project Presentation	1	10
3	Viva -voce		10
	<b>TOTAL</b>		<b>40</b>

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## 7. Technical Skills (70: 30 Marks)

### I. Continuous Evaluation: 70 Marks

S. No.	Parameters	Numbers	Marks
1	Written Test & Evaluation	2 Minimum	20
2	Student's Activity	2 Minimum	20
3	Surprised Test		5
4	Class Participation		5
5	Training Record File		20
TOTAL			70

### II. End Term Evaluation: 30 Marks

S. No.	Parameters	Numbers	Marks
1	Conducting experiment & validation		15
2	Write up		5
3	Viva Voce		10
TOTAL			30

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# ANNEXUR-X

## List of External Examiners Department of Chemistry

S. No.	Name of Faculty Members	Area of Specialization	Affiliations & Address for correspondence	E-mail ID	Contact No.
1	Prof. S. K. Sharma	Organic Chemistry	Department of Chemistry University of Delhi, Delhi-07	sksharma@chemistry.du.ac.in	9818915790
2	Prof. P. K. Sharma	Organic Chemistry	Department of Chemistry Kurukshetra University, Kurukshetra	talk2pawan@gmail.com	9416457355
3	Dr. B. K. Singh	Organic Chemistry	Department of Chemistry University of Delhi, Delhi-07	chemquestbk@gmail.com	9958308146
4	Dr. Sumit Kumar	Organic Chemistry	Department of Chemistry, DCRUST, Murthal Sonapat	sumitmalik.chem@derust.org	9468078462
5	Dr. Ramendra Pratap	Organic Chemistry	Department of Chemistry University of Delhi, Delhi-07	rpratap@du.ac.in	Tel: 01127666646 ext 178
6	Dr. Firasat Husain	Inorganic Chemistry	Department of Chemistry University of Delhi, Delhi-07	fhussain@du.ac.in	9654749736
7	Dr. Surendra Singh	Organic Chemistry	Department of Chemistry University of Delhi, Delhi-07	ssingh1@chemistry.du.ac.in	958255418
8	Dr. Anil Kumar	Inorganic Chemistry	Department of Chemistry University of Delhi, Delhi-07	kalotraanil21@gmail.com	9871957553
9	Dr. Poonam Singh	Inorganic Chemistry	Department of Chemistry, Delhi Technological University, Rohini, Delhi-42	poonam@dtu.ac.in	9811470714
10	Dr. Ram Singh	Organic Chemistry	Department of Chemistry, Delhi Technological University, Rohini, Delhi-42	dr.ramsingh@gmail.com	9811470714
11	Dr. Geetanjali	Organic Chemistry	Department of Chemistry Karorimal College, Univ. of Delhi	geetanjalichem@kmc.du.ac.in	
12	Dr. Rakesh Sharma	Physical Chemistry	Department of Chemistry University of Delhi, Delhi-07	Sharmark101@yahoo.com	9310050453
13	Prof. D. Kumar	Physical Chemistry	Department of Chemistry, DTU, Delhi	dkumar@dee.ac.in	9811425817
14	Dr. Satyen Saha	Physical Chemistry	Department of Chemistry, BHU	ssaha@bhu.ac.in	9935913366
15	Prof. Baliram	Physical Chemistry	Department of Chemistry, BHU	baliram@bhu.ac.in	9412120660
16	Dr. Kalpana Bhrara	Physical Chemistry	KMC, University of Delhi	kbrara@kmc.du.ac.in	9873582826
17	Dr. V. Rohil	Biochemistry	VPCI, University of Delhi	vishrohil@gmail.com	9810224000
18	Prof. R. K. Gupta	Chemistry/Microbiology	Department of Applied Chemistry, DTU	rkg67ap@yahoo.com	9871263252
19	Dr. Ravindra Vikram Singh	Organic Chemistry	Merck Group India Ltd	ravindra.singh@merckgroup.com	9591974681
20	Professor Ram Sagar Mishra	Organic Chemistry	JNU, New Delhi	ramsagar1jnu@gmail.com	9971119400

*[Signature]*

*Anil K*