Department of Chemistry

Shri G.S. Institute of Technology & Science, Indore

COURSE ASSESSMENT SHEET FOR 2021-22

M.Sc. I SEMESTER

Course Name - Physical Chemistry **Course Code -CH91105**
Credit- 4
Corresponding lab course name- Nil Name of the Faculty: Dr. Shailey Gupta

On successful completion of this course, students should be able to:

Course	Course Outcomes	
CH91105	CO1	Apply the symmetry elements and point group for molecule
	CO2	Comprehend fundamental knowledge in chemical kinetics with basics of order, molecularity and temperature effect
	CO3	Interpret the Concept of adsorption, isotherms and laws of thermodynamics
	CO4	Enrich various concepts of electrochemistry and solid state chemistry
	CO5	Solve the problem attribute to thermodynamics and electrochemistry

CO-PO Mapping

Course	PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	Po9	P010
CH91105	CO1	3	2	1	-	-	2	-	2	1	2
	CO2	2	2	1	-	-	2	-	1	-	2
	CO3	2	2	1	1	1	2	-	1	-	2
	CO4	2	1	1	1	1	2	1	1	1	2
	CO5	2	1	1	1	1	1	-	1	1	2
	Av	2	1.6	1	0.6	0.6	1.8	0.2	1.2	0.6	2

Department of Chemistry

Shri G.S. Institute of Technology & Science, Indore

COURSE ASSESSMENT SHEET FOR 2021-22

M.Sc. I SEMESTER

Course Name – Inorganic Chemistry Course Code -CH91106
Credit- 4
Corresponding lab course name-Nil Name of the Faculty: Dr. Nitish Gupta

Course	Course Outcomes	
CH91106	CO1	Explain the concept of bond formation, types of bond, structure of complexes etc.
	CO2	Illustrate the bonding in Hydrides and metal Carbonyls.
	CO3	Predict working with non-aqueous solvents.
	CO4	Recall the theories of coordination chemistry and stereochemistry.
	CO5	Explain the properties and applications of inner transition element and nano chemistry.

CO-PO Mapping

Course	PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	Po9	P010
CH91106	CO1	2	2	2	-	-	2	-	2	1	2
	CO2	2	2	2	1	1	2	1	2	1	2
	CO3	1	2	1	1	1	2	1	2	1	2
	CO4	2	2	1	1	1	2	1	2	1	2
	CO5	1	1	1	1	-	2	1	1	1	2
	Av	1.6	1.8	1.4	0.8	0.375	2	0.8	1.8	1	2

Department of Chemistry

Shri G.S. Institute of Technology & Science, Indore

COURSE ASSESSMENT SHEET FOR 2021-22

M.Sc. I SEMESTER

Course Name – Analytical Chemistry Course Code -CH91107
Credit- 4
Corresponding lab course name-Nil
Name of the Faculty :Dr.UrmilaRaghuvanshi

Course	Course Outcomes	
CH91107	CO1	Develop qualitative and quantitative skills needed in application of analytical chemistry.
	CO2	Recall fundamental principles of colorimetry, polarimetry, and polarography.
	CO3	Evaluate the spectral properties of instruments such as UV- Visible Spectrometer, Colorimeter etc.
	CO4	Recall principle and fundamentals of the chromatographic technique
	CO5	Estimate ORD, CD, thermogravemetric and flame photometry techniques for analysis of organic

CO-PO Mapping

Course	PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	Po9	P010
CH91107	CO1	2	2	2	1	1	2	1	2	1	2
	CO2	2	2	2	2	1	2	1	2	1	2
	CO3	2	2	2	1	1	2	1	1	1	2
	CO4	2	2	2	1	-	2	2	2	2	2
	CO5	2	2	2	1	1	2	1	2	1	2
	Av	2	2	2	1.2	0.8	2	1.2	1.8	1.2	2

Department of Chemistry

Shri G.S. Institute of Technology & Science, Indore

COURSE ASSESSMENT SHEET FOR 2021-22

M.Sc. I SEMESTER

Course Name – Chemistry of Engineering Materials Course Code -CH91108
Credit- 4
Corresponding lab course name-Nil
Name of the Faculty: Dr. MadhaviVerma

Course	Course Outcomes	
CH91108	CO1	Apply Specifications, testing and treatment of water for industrial and domestic use..
	CO2	Recall the different types fuels used in combustion and illustrate the combustion in the internal combustion
	CO3	Illustrate Concepts, manufacturing and applications of different types of industrially important materials such as lubricants, refractory and corrosion.
	CO4	Categorize polymerization reactions with respect mechanisms and distinguishes differences of these reactions.
	CO5	Enrich the knowledge on themes of biodiversity, natural resources, pollution control & waste management

Course	PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	Po9	P010
CH91108	CO1	1	2	2	2	1	2	1	2	1	2
	CO2	1	1	2	1	1	2	1	1	1	1
	CO3	1	1	2	2	1	1	1	1	2	2
	CO4	1	1	1	2	1	1	1	2	2	1
	CO5	1	1	1	2	2	2	2	2	2	2
	Av	1	1.2	1.6	1.8	1.2	1.6	1.2	1.8	1.6	1.8

Department of Chemistry

Shri G.S. Institute of Technology & Science, Indore

COURSE ASSESSMENT SHEET FOR 2021-22

M.Sc. II SEMESTER

Course Name – Organic Chemistry Course Code -CH91205
Credit- 4
Corresponding lab course name-Nil Name of the Faculty : Dr. Nitin S. Sapre

Course	Course Outcomes	
CH911205	CO1	Apply the stereo chemical implications and conformations analysis of organic compounds
	CO2	Interpret and analyze reactions having different functionalities and rearrangements.
	CO3	Use the concept of Disconnection approach and asymmetric synthesis.
	CO4	Apply the use of modern reagent for various reactions.
	CO5	Relate the concept of aromaticity and photochemistry.

CO-PO Mapping

Course	PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	Po9	P010
CH91205	CO1	2	2	2	-	-	1	-	1	1	2
	CO2	2	1	1	-	-	1	-	1	1	2
	CO3	2	2	1	1	1	1	1	1	1	2
	CO4	2	1	1	-	-	1	1	1	1	2
	CO5	2	1	1	-	-	1	-	1	1	1
	Av	2	1.4	1.2	0.2	0.2	1	0.4	1	1	1.8

Department of Chemistry

Shri G.S. Institute of Technology & Science, Indore

COURSE ASSESSMENT SHEET FOR 2021-22

M.Sc. II SEMESTER

Course Name – Modern Analytical Methods Course Code -
Credit- 4
Corresponding lab course name-Nil
Name of the Faculty: Dr.

Course	Course Outcomes	
CH91206	CO1	Apply the knowledge of sampling, data analysis, and interpretation and select proper analytical method.
	CO2	Explain the principles of IR and Raman spectroscopy.
	CO3	Interpret and analysis the molecular structure by NMR
	CO4	Apply the knowledge of Mass spectroscopy for structure elucidation.
	CO5	Explain the principles of ESR spectroscopy

CO-PO Mapping

Course	PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	Po9	P010
CH91206	CO1	2	2	2	-	-	2	-	1	1	2
	CO2	2	2	2	-	-	2	-	1	1	2
	CO3	2	2	2	-	-	2	-	1	1	2
	CO4	2	2	2	-	-	2	-	1	1	2
	CO5	1	1	1	2	1	-	1	-	-	1
	Av	1.8	1.8	1.8	0.4	0.2	1.6	0.2	0.8	0.8	1.8

Department of Chemistry

Shri G.S. Institute of Technology & Science, Indore

COURSE ASSESSMENT SHEET FOR 2021-22

M.Sc. II SEMESTER

Course Name – Natural Products Course Code -CH91207
Credit- 4
Corresponding lab course name-Nil
Name of the Faculty : Dr. MadhaviVerma

Course	Course Outcomes	
CH91207	CO1	Elucidate the biosynthetic pathways to prepare water and fat soluble vitamins.
	CO2	Analyze the factors affecting the biosynthesis of secondary metabolites and apply the concept to Improve the yield.
	CO3	Design the appropriate strategy to isolate and Characterize different class of natural products.
	CO4	Identify industrially relevant method for quantification of different class of natural products.
	CO5	Express the concept of secondary metabolites and their biosynthetic pathways

CO-PO Mapping

Course	PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	Po9	P010
CH91207	CO1	1	1	1	-	1	1	1	1	-	2
	CO2	1	1	1	-	1	1	1	1	-	2
	CO3	1	1	1	1	1	1	1	1	1	2
	CO4	1	1	1	1	1	1	1	1	1	2
	CO5	1	1	1	1	1	1	1	1	1	2
	Av	1	1	1	0.6	1	1	1	1	0.6	2

Department of Chemistry

Shri G.S. Institute of Technology & Science, Indore

COURSE ASSESSMENT SHEET FOR 2021-22

M.Sc. II SEMESTER

Course Name –Chemistry of Drugs - I Course Code - CH91209, Credit- 4
Corresponding lab course name-
Nil Name of the Faculty Dr.
Nitish Gupta

Course	Course Outcomes	
CH91209	CO1	Apply the mechanistic pathways of different class of Medicinal compounds.
	CO2	Predict the chemistry of drugs with respect to their Pharmacological activity.
	CO3	Develop the capability to analyze the dose & route of administration of antiseptics , anti-fungal & anti protozoal drugs
	CO4	Identify dose, route of administration, precautions, & Contraindications of diuretics &sulpha drugs.
	CO5	Illustrate the importance of heterocycles, learn the properties and synthetic routes of various transformations involving heterocycles.

CO-PO Mapping

Course	PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	Po9	P010
CH91209	CO1	1	1	1	1	1	1	1	2	1	2
	CO2	1	1	1	1	1	1	1	2	1	2
	CO3	1	1	1	1	1	1	1	2	1	2
	CO4	1	1	1	1	1	1	1	2	1	2
	CO5	2	1	2	-	-	2	-	2	-	2
	Av	1.2	1	1.2	0.8	0.8	1.2	0.8	2	0.8	2

Department of Chemistry

Shri G.S. Institute of Technology & Science, Indore

COURSE ASSESSMENT SHEET FOR 2021-22

M.Sc. III SEMESTER

Course Name –Chemistry of Drugs (Natural) Course Code -CH91305
Credit- 4
Corresponding lab course name-Nil
Name of the Faculty: Dr. Nitin S. Sapre

Course	Course Outcomes	
CH91305	CO1	Recognize the different types of alkaloids, antibiotics, hormones & proteins & their chemistry & medicinal importance.
	CO2	Explain vitamins Chemistry & Physiological significance of
	CO3	Elaborate general methods of structural elucidation of compounds of natural origin.
	CO4	Illustrate isolation, purification and characterization of simple chemical constituents from the natural source.
	CO5	Explain protein, enzyme and nucleic acids and their Physiological significance in human physiology

CO-PO Mapping

Course	PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	Po9	P010
CH91305	CO1	1	1	1	1	-	1	-	1	-	2
	CO2	1	1	1	-	-	1	-	1	-	2
	CO3	1	1	1	1	1	1	1	1	1	1
	CO4	1	1	-	1	1	1	1	1	-	1
	CO5	1	1	1	1	1	1	-	1	1	1
	Av	1	1	0.8	0.8	0.6	1	0.4	1	0.4	1.4

Department of Chemistry

Shri G.S. Institute of Technology & Science, Indore

COURSE ASSESSMENT SHEET FOR 2021-22

M.Sc. III SEMESTER

Course Name –Chemistry of Drugs – II Course Code -CH91306
Credit- 4
Corresponding lab course name-Nil
\Name of the Faculty: Dr. Nitish Gupta

Course	Course Outcomes	
CH91306	CO1	Describe structure, mechanism of action and uses of analgesics, sedatives and hypnotics Drugs.
	CO2	Describe structure, mechanism of action & uses of antidepressants & antianxiety agents, Tranquilizers, & anti emetics
	CO3	Recall structure, mechanism of action and uses of autonomic drugs.
	CO4	Describe the drugs acting on Diuretics, antimalarial and cardiovascular system.
	CO5	Explain the new updates on the Antineoplastic and respiratory drugs and describe the chemistry and use of hypoglycemic agents.

CO-PO Mapping

Course	PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	Po9	P010
CH91306	CO1	1	1	1	1	1	1	1	2	1	2
	CO2	1	1	1	1	1	1	1	2	1	2
	CO3	1	1	1	1	1	1	1	2	1	2
	CO4	1	1	1	1	1	1	1	2	1	2
	CO5	1	1	1	1	1	1	1	2	1	2
	Av	1	1	1	1	1	1	1	2	1	2

Department of Chemistry

Shri G.S. Institute of Technology & Science, Indore

COURSE ASSESSMENT SHEET FOR 2021-22

M.Sc. III SEMESTER

Course Name –Computer Applications in Chemistry Course Code -CH91307
Credit- 4
Corresponding lab course name-Nil

Course	Course Outcomes	
CH91307	CO1	Recall & infer the fundamentals of Computer, its components, structure, types & Peripheral devices.
	CO2	Identify and apply the knowledge of networking and database management system.
	CO3	Identify and apply the knowledge of languages like C, Python/FORTRAN.
	CO4	Apply and write the computer code in chemistry.
	CO5	Identify and apply the software packages in chemistry

CO-PO Mapping

Course	PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	Po9	P010
CH91307	CO1	2	1	1	-	1	1	1	2	1	2
	CO2	2	1	2	-	-	1	1	2	1	2
	CO3	2	1	1	1	1	1	1	2	1	2
	CO4	2	1	2	-	-	1	1	2	1	2
	CO5	2	1	2	-	-	1	1	2	1	2
	Av	2	1	1.6	0.2	0.4	1	1	2	1	2

Department of Chemistry

Shri G.S. Institute of Technology & Science, Indore

COURSE ASSESSMENT SHEET FOR 2021-22

M.Sc. III SEMESTER

Course Name – Advanced Organic and Medicinal Chemistry
Course Code -CH91308
Credit- 4
Corresponding lab course name-Nil

Course	Course Outcomes	
CH91308	CO1	Learn the structural activity relationship of the important class of drugs.
	CO2	Design new techniques of organic synthesis using green chemistry.
	CO3	Apply various processes involved in manufacturing process.
	CO4	Identify stereogeniccentres in organic molecules appreciate the role of chirality in nature and in drug design.
	CO5	Learn various structure based drug design methods

CO-PO Mapping

Course	PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	Po9	P010
CH91308	CO1	2	2	2	-	-	1	-	1	1	2
	CO2	2	1	2	-	1	1	1	1	1	2
	CO3	2	2	1	-	1	1	1	1	1	1
	CO4	2	2	1	2	1	1	1	1	-	2
	CO5	1	1	1	1	-	2	-	1	1	2
	Av	1.8	1.6	1.4	0.6	0.6	1.2	0.6	1	0.8	1.8