



**List of Courses which focuses on Professional Ethics, Gender, Human Values, Environment & Sustainability and other value framework**

**Department : Chemistry**

**Programme Name : M. Sc.**

**Academic Year : 2021-22**

**Courses which focuses on Professional Ethics, Gender, Human Values, Environment & Sustainability and other value framework:**

Sr. No.	Course Code	Name of the Course
01.	CYPDTD9	Environmental Chemistry
02.	CYPATC1	Green Water Technology

**अध्यक्ष/Head**  
रसायन शास्त्र विभाग  
Deptt. of Chemistry  
गुरु घासीदास विश्वविद्यालय,  
Guru Ghasidas Vishwavidyalaya,  
बिलासपुर 495009 (छ.ग.)  
Bilaspur 495009 (C G.)



## Scheme and Syllabus

### CBCS- Course structure for M. Sc. (Chemistry)

(To be implemented from Session 2021-2022)

SEMESTER - I								
Course Structure	Course Code	Title	T/L	CCA	ESE	Total Marks	Credit	Final credit
CC-1	CYPATT1	Analytical Chemistry I	T-3	40	60	100	3	5
	CYPALT1	Analytical Chemistry Practical I	L-4	40	60	100	2	
CC-2	CYPATT2	Inorganic Chemistry I	T-3	40	60	100	3	5
	CYPALT2	Inorganic Chemistry Practical I	L-4	40	60	100	2	
CC-3	CYPATT3	Organic Chemistry I	T-3	40	60	100	3	5
	CYPALT3	Organic Chemistry Practical I	L-4	40	60	100	2	
CC-4	CYPATT4	Physical Chemistry I	T-3	40	60	100	3	5
	CYPALT4	Physical Chemistry Practical I	L-4	40	60	100	2	
OE	CYPATO1	Polymer Chemistry	T-3	40	60	100	3	5
	CYPALO1	Polymer Chemistry- Practical I	L-4	40	60	100	2	
VAC/ Certificate Course/ Optional	CYPATC1	Refer the List of Value-Added Course (p. 5)	T-2	40	60	100	2	Additional Credit Course
	CYPALC1		L-2	40	60	100	1	
<b>Total Credit</b>							<b>25</b>	
Semester-II								
CC-5	CYPBTT1	Analytical Chemistry II	T-3	40	60	100	3	5
	CYPBLT1	Analytical Chemistry Practical-II	L-4	40	60	100	2	
CC-6	CYPBTT2	Inorganic Chemistry II	T-3	40	60	100	3	5
	CYPBLT2	Inorganic Chemistry Practical-II	L-4	40	60	100	2	
CC-7	CYPBTT3	Organic Chemistry II	T-3	40	60	100	3	5
	CYPBLT3	Organic Chemistry Practical-II	L-4	40	60	100	2	
CC-8	CYPBTT4	Physical Chemistry II	T-3	40	60	100	3	5
	CYPBLT4	Physical Chemistry Practical-II	L-4	40	60	100	2	
CC-9	CYPBTT5	Molecular Spectroscopy	T - 4+1*	40	60	100	5	5
DSE-1	CYPBTD1	Instrumental Analytical Techniques	T - 4+1*	40	60	100	5	5
	CYPBTD2	Bio-inorganic Chemistry	T - 4+1*	40	60	100	5	
	CYPBTD3	Chemistry of Heterocycles	T - 4+1*	40	60	100	5	
	CYPBTD4	Solid State Chemistry	T - 4+1*	40	60	100	5	
<b>Remarks:</b> Any one course from DSE-1 will be offered to each student by the Department.								
VAC/ Certificate Course/ Optional	CYPATC1	Refer the List of Value-Added Course (p. 5)	T-2	40	60	100	2	Additional Credit Course
	CYPALC1		L-2	40	60	100	1	
<b>Total Credit</b>							<b>30</b>	
Semester-III								
CC-10	CYPCTT1	Computer Applications in Chemistry	T - 4+1*	40	60	100	5	5
RM	CYPCTA1	Research Methodology	T-2	40	60	100	2	2



OE-2	CYPCTO2	Medicinal Chemistry	T-3	40	60	100	3	5
	CYPCL02	Medicinal Chemistry Practical	L-4	40	60	100	2	
	CYPD03	Industrial Chemistry	T-3	40	60	100	3	
	CYPDLO3	Industrial Chemistry Practical	L-4	40	60	100	2	
<b>Remarks:</b> Any one course each from OE will be offered by the Department.								
DSE-2	CYPCTD1	Principles of Analytical Chemistry	T-3	40	60	100	3	5
	CYPCLD1	Analytical Chemistry Practical III	L-4	40	60	100	2	
	CYPCTD2	Organometallic Chemistry of Transition Metals	T-3	40	60	100	3	
	CYPCLD2	Inorganic Chemistry Practical III	L-4	40	60	100	2	
	CYPCTD3	Stereochemistry, Reactions and Rearrangements	T-3	40	60	100	3	
	CYPCLD3	Organic Chemistry Practical III	L-4	40	60	100	2	
	CYPCTD4	Electrochemistry	T-3	40	60	100	3	
	CYPCLD4	Physical Chemistry Practical III	L-4	40	60	100	2	
<b>Remarks:</b> Any one course from DSE-2 will be offered to each student by the Department.								
DSE-3	CYPCTD5	Chemical Analysis	T-3	40	60	100	3	5
	CYPCLD5	Analytical Chemistry Practical IV	L-4	40	60	100	2	
	CYPCTD6	Inorganic Rings, Chains, and Clusters	T-3	40	60	100	3	
	CYPCLD6	Inorganic Chemistry Practical IV	L-4	40	60	100	2	
	CYPCTD7	Chemistry of Natural Products	T-3	40	60	100	3	
	CYPCLD7	Organic Chemistry Practical IV	L-4	40	60	100	2	
	CYPCTD8	Quantum Chemistry	T-3	40	60	100	3	
	CYPCLD8	Physical Chemistry Practical IV	L-4	40	60	100	2	
<b>Remarks:</b> Any one course from DSE-3 will be offered to each student by the Department								
VAC/ Certificate Course/ Optional	CYPCTC1	Refer the List of Value-Added Course (p.5)	T-2	40	60	100	2	Additional Credit Course
	CYPCLC1		L-2	40	60	100	1	
<b>Total Credit</b>							<b>22</b>	
<b>Semester-IV</b>								
CC-11	CYPDTT6	Biological Chemistry	T-3	40	60	100	3	5
	CYPDTL6	Biological Chemistry Practical	L-4	20	30	50	2	
<b>Remarks:</b> Any one course each from OE-2 will be offered by the Department.								
DSE-4	CYPDTD1	Advanced Separation Techniques	T - 4+1*	40	60	100	5	5
	CYPDTD2	Structural Methods in Inorganic Chemistry	T - 4+1*	40	60	100	5	
	CYPDTD3	Organic Spectroscopy for Structural Elucidation	T - 4+1*	40	60	100	5	
	CYPDTD4	Statistical Mechanics	T - 4+1*	40	60	100	5	
<b>Remarks:</b> Any one course from DSE-4 will be offered to each student by the Department								
	CYPDTD5	Electroanalytical Methods	T - 4+1*	40	60	100	5	
	CYPDTD6	Special Topics in Inorganic Chemistry	T - 4+1*	40	60	100	5	



DSE-5	CYPDTD7	Reagents and Reactions in Organic Synthesis	T - 4+1*	40	60	100	5	5
	CYPDTD8	Chemical Kinetics	T - 4+1*	40	60	100	5	
<b>Remarks:</b> Any one course from DSE-5 will be offered to each student by the Department								
DSE-6	CYPDTD9	Environmental Chemistry	T - 4+1*	40	60	100	5	5
D	CYPDDD1	Dissertation/field work/ internship/project/ Industry visit	D-12	40	60	100	6	6
VAC/ Certificate Course/ Optional	CYPATC1	Refer the List of Value-Added Course (p. 5)	T-2	40	60	100	2	Additional Credit Course
	CYPALC1		L-2	40	60	100	1	
<b>Total</b>							<b>26</b>	
MOOC's <sup>#</sup>								
<b>Total Credit</b>							<b>Credit: 103</b>	

**CC = Core course DSE = Discipline specific Elective OE = Open Elective T= Theory L=Lab**  
**Course Structure:**

<b>List of Value-Added Course (Certificate Course)</b>	
1	Lab Safety Management (Prof. G. K. Patra)
2	Green Water Technology (Dr. S. K. Singh & Dr. U. P. Azad)
3	Agrochemicals Formulation (Dr. Charu Arora)
4	Cement Chemistry (Dr. S. S. Thakur & Prof. G. K. Patra)
5	Chemistry of Smart Materials and Technology (Dr. Arti Srivastava & Dr. Neeraj Kumari)
6	Food Adulteration and Testing (Dr. V. K. Rai and Dr. Manorama Singh)

#MOOC's courses may be offered at least one time during entire PG programme for the any of Core Course, Generic elective, Discipline specific elective, AEC course, Skill enhancement course available on MOOC's platform time to time. If any such course related to your subject is not available on MOOC's platform, department may continue with regular courses.

T - 4+1\*refer to 4 hours Lecture and 1 hour Tutorial

*Patra*