

# **AKAL UNIVERSITY, TALWANDI SABO**

**(Estd. under Punjab State Act No. 25 of 2015)**

## **FACULTY OF PHYSICAL SCIENCES DEPARTMENT OF CHEMISTRY**

*Syllabi and outline of examination*

**For**

### **MASTER OF SCIENCE IN CHEMISTRY (UNDER HONOUR SCHOOL STREAM)**

**(Semester I to IV)**



**EXAMINATION: 2024-26**

**SEMESTER: I**  
**SCHEME OF TEACHING & EXAMINATION**

NATURE OF COURSE	COURSE CODE	Course Name/Title	SCHEDULE OF TEACHING (HOURS PER WEEK)		CREDITS	MARKS		
			LECTURE	PRACTICAL		INTERNAL	MCQ /PRACTICAL FILE	END SEMESTER EXAMINATION
Core Course	CHM06C101	Group Theory and Solid State	4	-	4	20	20	60
Core Course	CHM06C102	Organic Reaction Mechanism and Stereochemistry	4	-	4	20	20	60
Core Course	CHM06C103	Quantum Mechanics and Molecular spectroscopy	4	-	4	20	20	60
Core Course	CHM06C104	Coordination Chemistry: Bonding, spectra and reaction mechanism	4	-	4	20	20	60
Laboratory Course-I	CHM06L101	Inorganic Chemistry Lab	-	6	3	10	10	30
	CHM06L102	Organic Chemistry Lab	-	6	3	10	10	30
		TOTAL	16	12	22	100	100	300

**SEMESTER: II**  
**SCHEME OF TEACHING & EXAMINATION**

NATURE OF COURSE	COURSE CODE	Course Name/Title	SCHEDULE OF TEACHING (HOURS PER WEEK)		CREDITS	MARKS		
			LECTURE	PRACTICAL		INTERNAL	MCQ /PRACTICAL FILE	END SEMESTER EXAMINATION
Core Course	CHM06C201	Organic Reaction and Rearrangements	4	-	4	20	20	60
Core Course	CHM06C202	Chemical Kinetics, Thermodynamics and Chemical equilibrium	4	-	4	20	20	60
Core Course	CHM06C203	Organic Spectroscopy	4	-	4	20	20	60
Core Course	CHM06C204	Metal Clusters and Bioinorganic Chemistry	4	-	4	20	20	60
Laboratory Course -II	CHM06L201	Analytical Chemistry Lab	-	6	3	10	10	30
	CHM06L202	Physical Chemistry Lab	-	6	3	10	10	30
TOTAL			16	12	22	100	100	300

**SEMESTER: III**  
**SCHEME OF TEACHING & EXAMINATION**

NATURE OF COURSE	COURSE CODE	Course Name/Title	SCHEDULE OF TEACHING (HOURS PER WEEK)		CREDITS	MARKS		
			LECTURE	PRACTICAL		INTERNAL	MCQ /PRACTICAL FILE	END SEMESTER EXAMINATION
Core Course	CHM06C301	Organic Synthesis	4	-	4	20	20	60
Core Course	CHM06C302	Organometallic Chemistry	4	-	4	20	20	60
DSE		Choose any one*	4	-	4	20	20	60
Project work/ Dissertation	CHM06D301	-	-		10			50
Core Course		TOTAL	16	-	22	60	60	230
	CHM06C301	Organic Synthesis	4	-	4	20	20	60
Core Course	CHM06C302	Organometallic Chemistry	4	-	4	20	20	60

\*Students can select following Discipline Specific Courses:

1. CHM06E301 Electrochemistry, Statistical thermodynamics and colloidal chemistry
2. CHM06E302 Topics in Heterocyclic Chemistry
3. CHM06E303 Medicinal Chemistry
4. CHM05E304 Biochemistry

**SEMESTER: IV**  
**SCHEME OF TEACHING & EXAMINATION**

NATURE OF COURSE	COURSE CODE	Course Name/Title	SCHEDULE OF TEACHING (HOURS PER WEEK)		CREDITS	MARKS		
			LECTURE	PRACTICAL		INTERNAL	MCQ /PRACTICAL FILE	END SEMESTER EXAMINATION
Core Course	CHM06C401	Photochemistry and Pericyclic Chemistry	5	-	5	20	20	60
DSE		Choose any one*	5	-	5	20	20	60
Project work/ Dissertation	CHM06D401	-			10			50
		TOTAL	10	-	20	40	40	170

\*Students can select following Discipline Specific Courses:

1. CHM06E301 Electrochemistry, Statistical thermodynamics and colloidal chemistry
2. CHM06E302 Topics in Heterocyclic Chemistry
3. CHM06E303 Medicinal Chemistry
4. CHM05E304 Biochemistry