

**Academic Year 2018-19**

**B.P.H.E. Society's  
Ahmednagar College, Ahmednagar  
Internal Quality Assurance Cell  
CO, PO, and PSO Attainment Sheet**

<b>Department Name</b>	Chemistry
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<b>Program Name</b>	M.Sc. Drug Chemistry
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<b>Program Outcomes(PO)</b>
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<b>PO1</b>	Describe different techniques of organic synthesis, mechanisms Describe different techniques of organic synthesis, mechanisms, their application to
<b>PO2</b>	Study of Receptor, membrane structure , classification and Design and develop lead molecules using CADD, understand cell selectivity
<b>PO3</b>	Understanding different drugs and their targets , understand mode of action of antibiotics
<b>PO4</b>	To acquire advanced knowledge of Pharmaceutical chemistry, Drug design and development, information of natural products
<b>PO5</b>	Significance of R&D ,FDA, knowlege of name reactions in synthesis
<b>PO6</b>	Gain knowledge of physico-chemical properties of drug substance, formulation, manufacturing, different application of name reactions
<b>PO7</b>	Physico-chemical properties of drug molecules in relation to drug ADME, reactivity of compounds
<b>PO8</b>	Structure activity relationships in relation to drug-target interactions, drug molecule and their uses in treatment
<b>PO9</b>	Classification of drugs based on their stucture, targets, synthetic strategy involved in preparation
<b>PO10</b>	Intellectual property rights, Understanding of industrial safety, recent drug developments
<b>PO11</b>	Different techniques on synthesis , isolation and characterization of drug molecules, understand development of various antibiotics
<b>PO12</b>	Preclinical and clinical trials in drug development, nomenclature of compounds

<b>Program Specific Outcome(PSO)</b>
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<b>PSO1</b>	Deep knowledge about diseases, drug molecules ,their synthesis and identification of active compounds,
<b>PSO2</b>	Understanding of Drug modelling, will understand diseases caused by various pathogen and their treatment
<b>PSO3</b>	Methods of preparation of organic and drug molecules, biochemical basis of cancer and different approach to treat cancer



<b>Academic Year :</b>	<b>2018-19</b>
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Class		M.Sc-I	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CHI-130		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Molecular Symmetry & Chemistry of p-block elements (4 credits)	CO1	3	2	2	1	1	1	2	1	2	3	2	2	1	2	1
Semester No		I	CO2	1	3	1	2	1	2	1	1	1	2	2	1	2	2	2
Teacher Name		Dr. Kawade V.A. and Mrs. Tikone S. G.	CO3	2	2	2	3	3	3	3	2	2	1	2	2	2	2	1
Course Outcomes			CO4	2	1	3	2	2	2	1	2	1	2	2	3	3	2	3
	CO1	Student should visualize/ imagine molecules in 3 dimensions.	CO5	1	2	2	2	1	1	2	3	2	1	1	2	2	1	2
	CO2	Student will able to explain representation of group	Average	1.80	2.00	2.00	2.00	1.60	1.80	1.80	1.80	1.60	1.80	1.80	2.00	2.00	1.80	1.80
	CO3	Student will able to explain the nature of bonding with the help of Symmetry Adapted Linear Combinations																
	CO4	Student should understand the detail chemistry of S and P block elements w.r.t. their compounds, their reactions and applications																
	CO5	To learn the advance chemistry of boranes, fullerene, zeolites, polymers etc.																

Class		M.Sc-I	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CHI-230		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Coordination and Bioinorganic Chemistry	CO1	2	3	3	1	2	3	2	2	1	2	1	1	2	1	2
Semester No		II	CO2	1	2	2	3	2	1	3	1	2	1	3	2	3	1	3

Teacher Name	Dr. Kawade V. A and Mrs. Tikone S. G.		CO3	3	1	1	2	1	2	2	3	2	3	2	1	2	2	1
Course Outcomes			CO4	2	2	3	2	2	3	2	1	3	2	2	3	1	1	1
	CO1	Student should know the concept of weak and strong ligand field.	CO5	1	2	2	1	3	1	1	2	1	2	1	2	2	3	2
	CO2	Importance of bioinorganic chemistry.	Average	1.80	2.00	2.20	1.80	2.00	2.00	2.00	1.80	1.80	2.00	1.80	1.80	2.00	1.60	1.80
	CO3	Student should able to find out the no of microstates and meaningful term symbols, construction of microstate table for various configuration																
	CO4	Role of metals in Metalloprotein and metalloenzymes.																
	CO5	Similarities in coordination theory for metal complexes and metal ions complexed with biological ligands.																

Class	M.Sc-I	Course Outcomes	Program Outcomes												PSOs			
Subject Code	CHD-150		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Basic organic chemistry	CO1	2	2	1	0	1	0	0	0	2	1	1	1	2	1	2	
Semester No	I	CO2	2	2	2	0	2	1	0	0	1	1	2	1	1	2	1	
Teacher Name	Dr. S. R. Deshmukh	CO3	3	3	2	1	1	2	1	0	2	1	2	1	1	2	2	
Course Outcomes		CO4	3	3	2	1	2	1	1	0	2	2	2	1	2	2	2	
	CO1	Students will be able to understand a) chemical bonding and basis of reactivity, Acidity and basicity & Aromaticity.																
	CO2	b) Structure and stability of reactive intermediates, carbenes, nitrenes, carbocations, carbanions and free radicals.	Average	2.50	2.50	1.75	0.50	1.50	1.00	0.50	0.00	1.75	1.25	1.75	1.00	1.50	1.75	1.75
	CO3	c) Aliphatic nucleophilic substitution with SN1, SN2, NGP, SNi mechanism.																
	CO4	d) Bonding other than covalent bonding.																
	CO5																	

Class		M.Sc-I	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CHD-250 (section I)			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	SECTION – I: Synthetic Organic Chemistry		CO1	3	2	2	1	2	0	1	0	2	1	1	0	1	1	2
Semester No	II		CO2	2	2	1	0	1	0	1	0	1	1	1	0	2	2	2
Teacher Name	Dr. S. R. Deshmukh		CO3	3	3	2	1	1	0	2	0	3	1	1	1	1	2	2
Course Outcomes			CO4	2	3	2	1	2	1	2	1	1	1	1	2	2	1	1
	CO1	Students will be able to understand a) Oxidation & reduction process in organic chemistry.	CO5															
	CO2	b) Different oxidizing and reducing agents with their selectivity and reaction mechanism.	Average	2.50	2.50	1.75	0.75	1.50	0.25	1.50	0.25	1.75	1.00	1.00	0.75	1.50	1.50	1.75
	CO3	c) Rearrangement reaction with reaction mechanism																
	CO4	d) Phosphorus, Nitrogen and Sulphur ylides with mechanism.																
	CO5																	

Class		M.Sc-I	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CHI-107			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Inorganic Chemistry Practical		CO1	2	2	1	0	1	0	0	0	2	1	1	1	2	1	2
Semester No	I aand II		CO2	2	2	2	0	2	1	0	0	1	1	2	1	1	2	1
Teacher Name	Dr.Kawade V.A. Mrs.Tikone S.G.		CO3	3	3	2	1	1	2	1	0	2	1	2	1	1	2	2
Course Outcomes			CO4	3	3	2	1	2	1	1	0	2	2	2	1	2	2	2
	CO1	Student will able to prepare solution of required conc. and the handle laboratory equipment properly.	CO5	2	3	1	3	2	1	3	2	3	2	1	2	3	1	
	CO2	Student should be Perform experiment accurately and able to perform calculation.	Average	2.40	2.60	1.60	1.00	1.60	1.00	1.00	0.40	2.00	1.40	1.60	1.20	1.80	1.60	1.75
	CO3	Student will able to Explain experiment and principal of experiment in detail.																

	CO4	Student should answer the cell constant, Define coordination complex, specific conductance, resistance, equilibrium constant, chromatography, absorbance, Beer's law, solubility product, etc.
	CO5	Student should understand the concept of Ion – Exchange Chromatography

Class		M.Sc. I	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CHP-110			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Physical Chemistry I		CO1	3	2	2	1	2	0	1	0	2	1	1	0	1	1	2
Semester No	I		CO2	2	2	1	0	1	0	1	0	1	1	1	0	2	2	2
Teacher Name	Dr. R. K. Dongare		CO3	3	3	2	1	1	0	2	0	3	1	1	1	1	2	2
Course Outcomes			CO4	2	3	2	1	2	1	2	1	1	1	1	2	2	1	1
	CO1	Students should be able to remember the concepts of thermodynamic parameters, quantum mechanical postulates, rate laws of chemical reactions and computation of macroscopic properties of matter.	CO5	1	2	3	2	2	3	2	3	2	1	2	3	2	1	2
	CO2	Students should understand the basics like state function and path function, Schrodinger wave equation, kinetics of fast reactions, partition functions and ensembles.	Average	2.20	2.40	2.00	1.00	1.60	0.80	1.60	0.80	1.80	1.00	1.20	1.20	1.60	1.40	1.80
	CO3	Students should be able to apply the knowledge of various quantum mechanical methods to determine the different molecular properties and built the concept of the relation between thermodynamics and quantum mechanics																
	CO4	Students should be able to analyze the rates of various chemical reactions both theoretically and experimentally and also observe the effect of catalyst and determine energies of activation of such reactions																

	CO5	Students should be able to evaluate variation of thermodynamic parameters for multi component systems and their variation with other extensive properties, Schrodinger wave equation and its application to hydrogen and hydrogen like atoms.
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Class		M.Sc. I	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CHP-210			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Physical Chemistry II		CO1	3	2	1	0	1	2	3	0	1	1	2	0	2	3	2
Semester No	II		CO2	3	3	2	0	2	1	2	0	2	1	2	1	2	2	3
Teacher Name	Dr. R. K. Dongare		CO3	2	3	3	2	2	3	2	0	2	0	2	1	2	3	2
Course Outcomes			CO4	2	2	1	2	3	2	2	1	3	1	2	1	3	3	3
	CO1	Remember basic concepts of molecular spectroscopy, selection rules, intensity of spectral lines, radioactive decay and decay kinetics.	CO5	3	3	2	3	3	2	3	2	3	2	3	2	3	3	3
	CO2	Understand principles and applications of rotational, vibrational, Raman, electronic and Mossbauer spectroscopy. Understand concepts of nuclear and radiation Chemistry. Applications of Radioisotopes	Average	2.60	2.60	1.80	1.40	2.20	2.00	2.40	0.60	2.20	1.00	2.20	1.00	2.40	2.80	2.60
	CO3	Apply various spectroscopic techniques for gaining insights into molecular structure																
	CO4	Analyse vibrating diatomic molecule, simple harmonic and anharmonic oscillator, Scattering of light, Raman Spectrum, interaction of $\gamma$ radiation with matter and radiation dosimetry.																
	CO5	Evaluate bond length, vibrational frequency, force constant and dissociation energy using spectral data																

Class		M.Sc. I	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CHG-290(P)			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Physical Chemistry Practicals		CO1	3	2	2	1	1	2	3	1	1	2	2	2	2	3	2

Semester No	II		CO2	2	3	2	2	2	1	2	2	2	2	2	2	2	3
Teacher Name	Dr. R. K. Dongare		CO3	2	3	3	2	2	3	2	2	2	2	2	2	2	2
Course Outcomes			CO4	3	3	2	2	3	2	2	1	3	2	2	2	3	3
	CO1	Students will grasp the concept of reaction rate and its significance in Chemical Kinetics.	CO5	3	3	2	3	3	2	3	2	3	3	3	2	3	3
	CO2	Students will learn how to use experimental data to deduce rate laws and rate constants.	Average	2.60	2.80	2.20	2.00	2.20	2.00	2.40	1.60	2.20	2.20	2.20	2.00	2.40	2.80
	CO3	Students will be familiar with the fundamental principles of colorimetry and spectrophotometry including Beer's law, Lambert- Beer's law and the relationship between absorbance and concentration.															
	CO4	Students will be able to operate the instruments like spectrophotometer and colorimeter															
	CO5	Students will be able to determine the densities of the solutions and can calculate molar volumes															



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Class		Msc Drug Chemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Subject Name	Semester No	Teacher Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CHD 363	Drug Discovery & development	3rd	Likkumary Devassy	1	0	1	0	0	0	0	0	3	0	0	0	1	1	0
				0	0	1	0	0	0	0	0	2	0	0	0	1	0	0
				3	0	1	0	0	2	1	2	1	0	0	1	1	0	0
				2	0	1	1	2	3	1	2	0	1	2	3	1	0	0
	CO1	Understanding Lead compounds, Pharmacophore ,Discovery of drug	CO5	0	0	1	2	3	3	0	0	0	3	0	0	1	0	0
	CO2	Mechanism of drug action on its molecular targets, sources	Average	1.20	0.00	1.00	0.60	1.00	1.60	0.40	0.80	1.20	0.80	0.40	0.80	1.00	0.20	0.00
	CO3	Understanding of different medicinal systems , different ways of drug administration ,formulation and dosage forms																
	CO4	Different phases of drug development, Screening process and toxicological studies																
	CO5	Intellectual property rights, Patents and procedure of patenting, trademark ,copyrights, pharmacopoeia and FDA																

Class		Msc Drug	Course Outcomes	Program Outcomes												PSOs		
Subject Code	Subject Name	Semester No	Teacher Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CHD 463	Principles and applications in Drug Design	4th	Likkumary Devassy	0	3	0	2	0	2	1	1	0	0	1	0	2	3	0
				2	1	1	1	0	1	1	3	0	0	3	0	1	2	0
				0	0	2	1	0	1	3	2	0	0	1	0	1	2	0
				0	1	1	1	0	1	1	1	0	0	1	0	1	3	2

	CO1	Detail understanding of membrane receptors, Designing of drug	CO5	1	0	1	1	0	1	1	1	0	0	1	0	1	1	0
	CO2	Structure analysis of drug molecules	Average	0.60	1.00	1.00	1.20	0.00	1.20	1.40	1.60	0.00	0.00	1.40	0.00	1.20	2.20	0.40
	CO3	Designing of drug based on pharmacokinetics, ADME process																
	CO4	Diffrent screening and synthesis process of drug molecules																
	CO5	Designing of drug by CADD																

Class		Msc Drug	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CHD361			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Chemistry of hererocycles and drug synthesis		CO1	1	0	3	0	3	0	2	0	2	0	0	0	1	1	0
Semester No	3rd		CO2	2	1	0	3	1	0	3	0	3	1	2	2	0	0	1
Teacher Name	balid srushti arun		CO3	2	0	2	3	0	1	0	1	2	3	2	1	3	2	0
Course Outcomes			CO4	2	0	0	0	1	0	3	0	3	0	0	0	1	0	1
	CO1	differnet applications of name reactions	CO5	0	1	2	2	0	0	2	3	2	3	1	0	3	1	0
	CO2	knowlege of name reaction	Average	1.40	0.40	1.40	1.60	1.00	0.20	2.00	0.80	2.40	1.40	1.00	0.60	1.60	0.80	0.40
	CO3	drug molecule and their uses in treatment																
	CO4	synthetic stratergy involved in preparation																
	CO5	recent drug development																

Class		Msc Drug	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CHD-462			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	advanced medicinal Chemistry		CO1	1	2	3	0	0	2	0	1	0	3	2	3	1	3	0
Semester No	4th		CO2	0	1	3	0	0	2	0	2	0	3	2	0	0	2	0
Teacher Name	balid srushti arun		CO3	1	3	0	0	0	0	1	2	2	0	1	0	1	0	3
Course Outcomes			CO4	1	2	1	0	0	1	0	1	1	0	0	0	2	0	2
	CO1	understand development of various antibiotics	CO5	2	1	2	0	0	2	0	2	0	2	2	0	0	1	0
	CO2	understand mode of action of different antibiotics	Average	1.00	1.80	1.80	0.00	0.00	1.40	0.20	1.60	0.60	1.60	1.40	0.60	0.80	1.20	1.00

	CO3	understand cell selectivity and side effects of various antibiotics
	CO4	study systematic diseases and their treatment
	CO5	study pharmacokinetics and pahrmacodynamics of antibiotics

Class		MSc drug	Course	Program Outcomes												PSOs		
Subject Code		CHD-469	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Practical course-3	CO1	1	3	4	0	3	0	1	0	2	1	3	0	0	0	3
Semester No		III	CO2	1	0	2	2	3	1	2	0	2	1	3	0	2	0	1
Teacher Name		likku , srushti Balid	CO3	1	0	0	1	2	0	3	0	2	2	0	0	2	0	2
Course Outcomes			CO4	1	0	0	0	1	2	1	0	1	2	1	0	1	0	2
	CO1	understanding of different name reactions	CO5	2	2	3	3	1	1	1	0	2	1	3	0	1	0	3
	CO2	learning mointoring of reactions	Average	1.20	1.00	1.80	1.20	2.00	0.80	1.60	0.00	1.80	1.40	2.00	0.00	1.20	0.00	2.20

	CO3	able to purify and characterize the reaction products																
	CO4	to understand handling of different instruments and apparatus																
	CO5	able to synthesize compounds of pharmaceutical importance																

Class		M.Sc II	Course	Program Outcomes												PSOs		
Subject Code		CHD 362	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Advanced Analytical Methods	CO1	3	2	2	1	1	2	3	0	1	1	2	0			
Semester No		III	CO2	3	3	2	0	2	1	2	0	2	1	2	1			
Teacher Name		Dr. S. B. Kasar	CO3	3	3	2	3	2	3	2	0	2	0	2	1			
Course Outcomes			CO4	2	2	1	2	3	2	2	1	3	1	2	1			
	CO1	This course typically focus on equipping students with advanced knowledge and skills in the field of spectroscopy	CO5	3	3	2	3	3	2	3	2	3	2	3	2			
	CO2	Students should gain deep understanding of PMR, CMR and Mass spectrometry	Average	2.80	2.60	1.80	1.80	2.20	2.00	2.40	0.60	2.20	1.00	2.20	1.00	#DIV/0!	#DIV/0!	#DIV/0!
	CO3	students should be deduce functional groups, connectivity, and stereochemistry																

	CO4	students should be able to solve combined problems on U.V. I. R. and NMR data
	CO5	students should be proficient in interpreting spectroscopic data sets involving multidimensional NMR and mass spectra

Class		M.Sc II	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CHO 364		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		<b>Stereochemistry Asymmetric synthesis, and pericyclic reactions</b>	CO1	2	0	0	1	3	2	3	0	2	1	2	0	2	0	2
Semester No		III	CO2	2	0	0	2	2	0	2	0	1	0	2	0	1	0	1
Teacher Name		S.V. Rohokale	CO3	1	0	0	0	3	2	2	0	2	1	1	0	1	0	0
Course Outcomes			CO4	2	0	0	0	2	0	3	0	3	1	2	0	1	0	0
	CO1	To learn different conformations of alicyclic rings and the interactions present.	CO5	1	0	0	0	2	1	3	0	2	2	3	0	2	0	1
	CO2	To evaluate the energy content in different conformations and comparing their stability.	Average	1.60	0.00	0.00	0.60	2.40	1.00	2.60	0.00	2.00	1.00	2.00	0.00	1.40	0.00	0.80
	CO3	To apply the stereochemical principles in reactivities of conformations.																
	CO4	To learn the stereoselective reactions of acyclic and cyclic compounds.																
	CO5	Students should know the importance of chirality and different strategies of asymmetric synthesis																

Class		M. Sc. II	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CHD-367		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Practical Course-1	CO1	2	0	0	1	3	2	3	0	2	1	2	0	2	0	2
Semester No		III	CO2	2	0	0	2	2	0	2	0	1	0	2	0	1	0	1
Teacher Name		Likkumarry and Shruti Balid	CO3	1	0	0	0	3	2	2	0	2	1	1	0	1	0	0

Course Outcomes			CO4	2	0	0	0	2	0	3	0	3	1	2	0	1	0	0
	CO1	students will know Hands on training of different lab equipments	CO5	1	0	0	0	2	1	3	0	2	2	3	0	2	0	1
	CO2	They learn set up of reaction sequence	Average	1.60	0.00	0.00	0.60	2.40	1.00	2.60	0.00	2.00	1.00	2.00	0.00	1.40	0.00	0.80
	CO3	they know the functional group transformations																
	CO4	to know the safety and hazards of chemical reagents and solvents																
	CO5	they know to perform green synthesis.																

Class		M. Sc. II	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CHD-468		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Micro/Biochem practical	CO1	2	0	0	1	3	2	3	0	2	1	2	0	2	0	2
Semester No		IV	CO2	2	0	0	2	2	0	2	0	1	0	2	0	1	0	1
Teacher Name		Tak R. D. and Tungikar Vishal	CO3	1	0	0	0	3	2	2	0	2	1	1	0	1	0	0
Course Outcomes			CO4	2	0	0	0	2	0	3	0	3	1	2	0	1	0	0
	CO1	Understanding Lead compounds, Pharmacophore ,Discovery of drug	CO5	1	0	0	0	2	1	3	0	2	2	3	0	2	0	1
	CO2	Mechanism of drug action on its molecular targets, sources	Average	1.60	0.00	0.00	0.60	2.40	1.00	2.60	0.00	2.00	1.00	2.00	0.00	1.40	0.00	0.80
	CO3	Understanding of different medicinal systems , different ways of drug administration ,formulation and dosage forms																
	CO4	Different phases of drug development, Screening process and toxicological studies																
	CO5	Intellectual property rights, Patents and procedure of patenting, trademark ,copyrights, pharmacopoeia and FDA																

Class		M. Sc. II	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CHD-461		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Advanced synthetic methods	CO1	2	0	0	1	3	2	3	0	2	1	2	0	2	0	2

Semester No		IV	CO2	2	0	0	2	2	0	2	0	1	0	2	0	1	0	1
Teacher Name		S. V. Rohokale	CO3	1	0	0	0	3	2	2	0	2	1	1	0	1	0	0
Course Outcomes			CO4	2	0	0	0	2	0	3	0	3	1	2	0	1	0	0
	CO1	To remember the use of organometallic reagents in organic transformations.	CO5	1	0	0	0	2	1	3	0	2	2	3	0	2	0	1
	CO2	To learn the advanced transformations involving formations of C-C and C-X bonds.	Average	1.60	0.00	0.00	0.60	2.40	1.00	2.60	0.00	2.00	1.00	2.00	0.00	1.40	0.00	0.80
	CO3	To understand the catalytic cycles with the intermediates involved.																
	CO4	To design the synthesis of organic compounds using coupling reactions.																
	CO5	To learn olefin metathesis , concept of click reaction and multicomponent reactions.																

**CO-PO Mapping**

		Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	
FY	FY	1 CHI-130	1.80	2.00	2.00	2.00	1.60	1.80	1.80	1.80	1.60	1.80	1.80	1.80	2.00
		2 CHI-230	1.80	2.00	2.20	1.80	2.00	2.00	2.00	1.80	1.80	2.00	1.80	1.80	1.80
		3 CHD-150	2.50	2.50	1.75	0.50	1.50	1.00	0.50	0.00	1.75	1.25	1.75	1.75	1.00
		4 CHD-250 (sectio	2.50	2.50	1.75	0.75	1.50	0.25	1.50	0.25	1.75	1.00	1.00	1.00	0.75
		5 CHI-107	2.40	2.60	1.60	1.00	1.60	1.00	1.00	0.40	2.00	1.40	1.60	1.60	1.20
		6 CHP-110	2.20	2.40	2.00	1.00	1.60	0.80	1.60	0.80	1.80	1.00	1.20	1.20	1.20
		7 CHP-210	2.60	2.60	1.80	1.40	2.20	2.00	2.40	0.60	2.20	1.00	2.20	2.20	1.00
		8 CHG-290(P)	2.60	2.80	2.20	2.00	2.20	2.00	2.40	1.60	2.20	2.20	2.20	2.20	2.00
SY	SY	1 CHD 363	1.20	0.00	1.00	0.60	1.00	1.60	0.40	0.80	1.20	0.80	0.40	0.80	
		2 CHD 463	0.60	1.00	1.00	1.20	0.00	1.20	1.40	1.60	0.00	0.00	1.40	0.00	
		3 CHD361	1.40	0.40	1.40	1.60	1.00	0.20	2.00	0.80	2.40	1.40	1.00	0.60	
		4 CHD-462	1.00	1.80	1.80	0.00	0.00	1.40	0.20	1.60	0.60	1.60	1.40	0.60	
		5 CHD-469	1.20	1.00	1.80	1.20	2.00	0.80	1.60	0.00	1.80	1.40	2.00	0.00	
		8 CHD 362	2.80	2.60	1.80	1.80	2.20	2.00	2.40	0.60	2.20	1.00	2.20	1.00	
		9 CHO 364	1.60	0.00	0.00	0.60	2.40	1.00	2.60	0.00	2.00	1.00	2.00	0.00	
		10 CHD-367	1.60	0.00	0.00	0.60	2.40	1.00	2.60	0.00	2.00	1.00	2.00	0.00	
		11 CHD-468	1.60	0.00	0.00	0.60	2.40	1.00	2.60	0.00	2.00	1.00	2.00	0.00	
		12 CHD-461	1.60	0.00	0.00	0.60	2.40	1.00	2.60	0.00	2.00	1.00	2.00	0.00	

<b>CO-PO ATTAINMENT</b>
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PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
0.552	0.613333	0.613333	0.613333333	0.490667	0.552	0.552	0.552	0.490667	0.552	0.552	0.613333
0.552	0.613333	0.674667	0.552	0.613333	0.613333	0.613333	0.552	0.552	0.613333	0.552	0.552
0.5	0.5	0.35	0.1	0.3	0.2	0.1	0	0.35	0.25	0.35	0.2
0.5	0.5	0.35	0.15	0.3	0.05	0.3	0.05	0.35	0.2	0.2	0.15
2.4	2.6	1.6	1	1.6	1	1	0.4	2	1.4	1.6	1.2
0.909333	0.992	0.826667	0.413333333	0.661333	0.330667	0.661333	0.330667	0.744	0.413333	0.496	0.496
0.797333	0.797333	0.552	0.429333333	0.674667	0.613333	0.736	0.184	0.674667	0.306667	0.674667	0.306667
2.6	2.8	2.2	2	2.2	2	2.4	1.6	2.2	2.2	2.2	2
0.24	0	0.2	0.12	0.2	0.32	0.08	0.16	0.24	0.16	0.08	0.16
0.216	0.36	0.36	0.432	0	0.432	0.504	0.576	0	0	0.504	0
0.504	0.144	0.504	0.576	0.36	0.072	0.72	0.288	0.864	0.504	0.36	0.216
0.306667	0.552	0.552	0	0	0.429333	0.061333	0.490667	0.184	0.490667	0.429333	0.184
0.432	0.36	0.648	0.432	0.72	0.288	0.576	0	0.648	0.504	0.72	0
0.858667	0.797333	0.552	0.552	0.674667	0.613333	0.736	0.184	0.674667	0.306667	0.674667	0.306667
0.576	0	0	0.216	0.864	0.36	0.936	0	0.72	0.36	0.72	0
0.746667	0	0	0.28	1.12	0.466667	1.213333	0	0.933333	0.466667	0.933333	0
0.32	0	0	0.12	0.48	0.2	0.52	0	0.4	0.2	0.4	0
0.746667	0	0	0.28	1.12	0.466667	1.213333	0	0.933333	0.466667	0.933333	0



**Percentage CO-PO ATTAINMENT**

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
30.66667	30.66667	30.66667	30.66666667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667
30.66667	30.66667	30.66667	30.66666667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667
20	20	20	20	20	20	20	#DIV/0!	20	20	20	20
20	20	20	20	20	20	20	20	20	20	20	20
100	100	100	100	100	100	100	100	100	100	100	100
41.33333	41.33333	41.33333	41.33333333	41.33333	41.33333	41.33333	41.33333	41.33333	41.33333	41.33333	41.33333
30.66667	30.66667	30.66667	30.66666667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667
100	100	100	100	100	100	100	100	100	100	100	100
20	#DIV/0!	20	20	20	20	20	20	20	20	20	20
36	36	36	36	#DIV/0!	36	36	36	#DIV/0!	#DIV/0!	36	#DIV/0!
36	36	36	36	36	36	36	36	36	36	36	36
30.66667	30.66667	30.66667	#DIV/0!	#DIV/0!	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667
36	36	36	36	36	36	36	#DIV/0!	36	36	36	#DIV/0!
30.66667	30.66667	30.66667	30.66666667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667	30.66667
36	#DIV/0!	#DIV/0!	36	36	36	36	#DIV/0!	36	36	36	#DIV/0!
46.66667	#DIV/0!	#DIV/0!	46.66666667	46.66667	46.66667	46.66667	#DIV/0!	46.66667	46.66667	46.66667	#DIV/0!
20	#DIV/0!	#DIV/0!	20	20	20	20	#DIV/0!	20	20	20	#DIV/0!
46.66667	#DIV/0!	#DIV/0!	46.66666667	46.66667	46.66667	46.66667	#DIV/0!	46.66667	46.66667	46.66667	#DIV/0!

**CO-PSO MAPPING**

	Course	PSO1	PSO2	PSO3
1	CHI-130	2.00	2.00	1.80
2	CHI-230	2.00	1.60	1.80
3	CHD-150	1.50	1.75	1.75
4	CHD-250 (section I)	1.50	1.50	1.75
5	CHI-107	1.80	1.60	1.75
6	CHP-110	1.60	1.40	1.80
7	CHP-210	2.40	2.80	2.60
8	CHG-290(P)	2.40	2.80	2.60
1	CHD 363	1.00	0.20	0.00
2	CHD 463	1.20	2.20	0.40
3	CHD361	1.60	0.80	0.40
4	CHD-462	0.80	1.20	1.00
5	CHD-469	1.20	0.00	2.20
9	CHO 364	1.40	0.00	0.80
10	CHD-367	1.40	0.00	0.80
11	CHD-468	1.40	0.00	0.80
12	CHD-461	1.40	0.00	0.80

**CO-PSO ATTAINMENT**

Course	PSO1	PSO2	PSO3
CHI-130	0.613333	0.613333	0.552
CHI-230	0.613333	0.490667	0.552
CHD-150	0.3	0.35	0.35
CHD-250 (section I)	0.3	0.3	0.35
CHI-107	1.8	1.6	1.75
CHP-110	0.661333	0.578667	0.744
CHP-210	0.736	0.858667	0.797333
CHG-290(P)	2.4	2.8	2.6
CHD 363	0.2	0.04	0
CHD 463	0.432	0.792	0.144
CHD361	0.576	0.288	0.144
CHD-462	0.245333	0.368	0.306667
CHD-469	0.432	0	0.792
CHO 364	0.504	0	0.288
CHD-367	0.653333	0	0.373333
CHD-468	0.28	0	0.16
CHD-461	0.653333	0	0.373333

**Percentage CO-PSO ATTAINMENT**

Course	PSO1	PSO2	PSO3
CHI-130	30.66667	30.66667	30.66667
CHI-230	30.66667	30.66667	30.66667
CHD-150	20	20	20
CHD-250 (	20	20	20
CHI-107	100	100	100
CHP-110	41.33333	41.33333	41.33333
CHP-210	30.66667	30.66667	30.66667
CHG-290(P	100	100	100
CHD 363	20	20	#DIV/0!
CHD 463	36	36	36
CHD361	36	36	36
CHD-462	30.66667	30.66667	30.66667
CHD-469	36	#DIV/0!	36
CHO 364	36	#DIV/0!	36
CHD-367	46.66667	#DIV/0!	46.66667
CHD-468	20	#DIV/0!	20
CHD-461	46.66667	#DIV/0!	46.66667

FY

SY