

Academic Year	2022-23
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**B.P.H.E. Society's
Ahmednagar College, Ahmednagar
Internal Quality Assurance Cell
CO, PO, and PSO Attainment Sheet**

Department Name	Chemistry
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Program Name	B.Sc.
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Program Outcomes(PO)

PO1	A graduate student is expected to be capable of demonstrating comprehensive knowledge and understanding both theoretical and practical knowledge in all disciplines of Chemistry.
PO2	The course curriculum incorporates basics and advanced training in order to make a graduate student capable of expressing the subject through technical writing as well as through oral presentation.
PO3	The course curriculum also includes components that can be helpful to graduate students to develop critical thinking and to design, carry out, record and analyze the results of chemical reactions.
PO4	It is expected that the course curriculum will develop an inquisitive characteristics among the students through appropriate questions, planning and reporting experimental investigation.
PO5	The course curriculum has been designed to provide opportunity to act as team player by contributing in laboratory, field based situation and industry.
PO6	The course curriculum has been designed in such a manner as to enabling a graduate student to become a skilled project manager by acquiring knowledge about chemistry project management, writing
PO7	The course curriculum has been so designed to impart a good working knowledge in understanding and carrying out data analysis, use of library search tools, use of chemical simulation software and related computational work.
PO8	A graduate student requires understanding and developing ethical awareness or reasoning which is adequately provided through the course curriculum.
PO9	The course also helps them to understand the causes of environmental pollution and thereby applying environmental friendly policies instead of environmentally hazard ones in every aspect.
PO10	The course curriculum is designed to inculcate a habit of learning continuously through use of advanced ICT technique and other available e-techniques, e-books and e-journals for personal academic growth.
PO11	The course curriculum is designed in such a way that Chemistry graduate students can handle many Chemistry based software, decent instruments and advanced technologies to synthesize, characterize and analyze the chemical compounds very skillfully.
PO12	t Chemistry graduates are expected to be more aware about finding green chemical reaction routes for sustainable development. They are expected to maintain good laboratory practices and safety.

Program Specific Outcome(PSO)

PSO1	The chemistry graduates are expected to gain knowledge of the fundamental concepts of chemistry and applied chemistry through theory and practical. These fundamental concepts would be reflected in the latest understanding of the field to keep continues its progression.
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PSO2	Chemistry graduates are expected to achieve critical thinking ability to design, carry out, record and analyze the results of chemical reactions. They can have that much potential and confidence that they can overcome many difficulties with the help of their sharp scientific knowledge and logical approaches.
PSO3	Graduates are expected to be well trained with problem-solving philosophical approaches that are pertinent across the disciplines.

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Class		F.Y. BSC	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CH-101			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	PHYSICAL INORGANIC CHEMISTRY		CO1	2	2	1	1	1	1	1	2	2	3	1	2	2	1	
Semester No	1		CO2	2	2	3	2	1	2	1	2	2	1	1	2	3	2	
Teacher Name	Dr. A.K. KULKARNI		CO3	1	1	1	1	2	2	3	2	1	2	3	3	1	2	
Course Outcomes			CO4	1	1	2	0	2	31	2	1	2	1	3	3	2	2	
	CO1	Students should learn gas laws deviation of ideal gas from real gas, concept of Z	CO5	2	2	3	2	2	2	3	1	2	2	2	2	1	2	
	CO2	Student should learn properties of liquids such as viscosity boiling point,	Average	1.60	1.60	2.00	1.20	1.60	7.60	2.00	1.40	1.80	1.60	2.40	2.00	1.60	1.80	
	CO3	student can learn properties of surface, adsorption types of adsorption																
	CO4	Applications of adsorption																
	CO5	Student should learn concept of mole preparations of solution oxidation reduction reactions																

Class		FY BSc	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CH-102			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	PHYSICAL INORGANIC CHEMISTRY		CO1	1	2	2	1	1	2	1	1	2	2	3	2	2	1	
Semester No	2		CO2	2	2	3	2	1	2	1	2	2	1	1	2	3	2	
Teacher Name	Dr. A.K. Kulkarni		CO3	2	1	3	1	2	2	3	2	3	2	3	3	1	2	
Course Outcomes			CO4	1	1	2	0	2	3	2	3	2	2	3	3	2	2	

	CO1	Students should learn thermodynamic systems, properties, process, laws of thermodynamics, temperature scales and energy interactions, heat of reactions, temperature dependent heat of reaction	CO5	2	2	3	2	2	2	3	1	2	2	2	2	1	1	2
	CO2	Determine heat, work, internal energy, enthalpy for flow & non-flow process using First and Second Law of Thermodynamics. Determine change in internal energy, change in enthalpy and change in entropy.	Average	1.60	1.60	2.60	1.20	1.60	2.20	2.00	1.80	2.20	1.80	2.40	2.20	1.60	1.60	1.80
	CO3	To study structure of atom, Concept of Debroglies hypothesis, uncertainty principle																
	CO4	Students should learn quantum mechanical approach to atomic structure, Periodicity of elements																
	CO5	various theories for chemical bonding																

Class	FYBSC	Course Outcomes	Program Outcomes												PSOs			
Subject Code	CH- 103		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
Subject Name	Chemistry Practical Course I	CO1	1	2	3	2	2	1	2	3	1	2	2	2	1	0	2	
Semester No	I	CO2	2	3	3	2	2	3	1	2	1	1	3	1	2	1	2	
Teacher Name	Dr. Kawade V.A.	CO3	1	1	1	3	3	1	2	1	3	3	1	2	1	2	1	
Course Outcomes		CO4	3	2	2	2	1	2	3	2	1	1	2	1	1	2	2	
	CO1	Importance of chemical safety and Lab safety while performing experiments in laboratory	CO5	1	2	1	2	1	1	1	1	2	2	1	2	2	1	1
	CO2	Determination of thermochemical parameters and related concepts	Average	1.6	2	2	2.2	1.8	1.6	1.8	1.8	1.6	1.8	1.8	1.6	1.4	1.2	1.6
	CO3	Techniques of pH measurements																
	CO4	Preparation of buffer solutions																

CO5	Elemental analysis of organic compounds (non instrumental)
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Class		F.Y.B.Sc	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CH-201			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Inorganic Chemistry	CO1	2	1	3	1	1	2	3	1	2	3	1	1	1	1	3	
Semester No	II	CO2	2	2	2	2	1	1	2	3	3	3	1	2	3	2	2	
Teacher Name	Mrs.Tikone S.G.	CO3	2	3	3	3	1	2	3	1	2	2	3	2	2	2	1	
Course Outcomes		CO4	3	3	3		2	2	2	1	1	1	2	2	2	2	2	
	CO1	Students should learn quantum mechanical approach to atomic structure,	CO5															
	CO2	Student should learn Periodicity of elements	Average	2.25	2.25	2.75	2.00	1.25	1.75	2.50	1.50	2.00	2.25	1.75	1.75	2.00	1.75	2.00
	CO3	Student should learn various theories for chemical bonding																
	CO4	Student should learn chemistry of main group elements																
	CO5																	

Class		FY BSc	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CH-202			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Analytical Chemistry	CO1	1	2	3	2	3	1	3	3	2	1	1	1	1	1	3	
Semester No	II	CO2	2	1	2	1	2	1	2	1	1	3	2	2	3	2	3	
Teacher Name	Dr. A.K. Kulkarni	CO3	3	2	1	1	1	2	3	3	1	3	2	3	1	3	2	
Course Outcomes		CO4	1	3	2	3	2	3	1	2	3	2	1	2	2	2	1	
	CO1	Students should understand the fundamentals of analytical chemistry, Basics of sampling, applications	CO5	1	2	0	1	2	3	1	0	1	2	3	0	2	1	1
	CO2	To study preparations of solutions, determine units of solutions, stoichiometric calculations in analytical Chemistry	Average	1.60	2.00	1.60	1.60	2.00	2.00	2.00	1.80	1.60	2.20	1.80	1.60	1.80	1.80	2.00

	CO3	To study type, elements, functional group of organic compounds, mixture separation, and to study methods for the purifications of organic compounds
	CO4	To study principles techniques and applications of adsorption, TLC, Column, SFC, Gas, HPLC, Chromatographic techniques
	CO5	Understand concept of pH, EMF calculations, Instrumentation of pH meter, applications of pH meter.

Class		FYBSC	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CH- 203			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Chemistry Practical –II	CO1	1	3	1	3	1	3	1	1	1	1	1	1	2	2	3	
Semester No	II	CO2	2	1	1	2	3	1	2	3	2	2	2	2	1	3	1	
Teacher Name	Dr. Kawade V.A.	CO3	2	2	2	1	1	2	3	2	1	3	2	2	2	2	3	
Course Outcomes		CO4	3	2	3	2	2	1	1	2	2	2	2	3	1	2	2	
	CO1	Student should know the Inorganic Estimations using volumetric analysis	CO5	2	1	2	3	1	2	3	3	2	1	3	2	3	1	3
	CO2	Student should know the Synthesis of Inorganic compounds	Average	2.00	1.80	1.80	2.20	1.60	1.80	2.00	2.20	1.60	1.80	2.00	2.00	1.80	2.00	2.40
	CO3	Student should know the Analysis of commercial products																
	CO4	Student should know the procedure of Purification of organic compounds																
	CO5	Student should able to do Preparations and mechanism of reactions involved																

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Class		S. Y. B. Sc.	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH- 301		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Physical and Analytical chemistry	CO1	2	1	2	2	2	1	3	1	1	0	2	3	3	1	1
Semester No		III	CO2	3	1	1	2	3	3	2	3	2	1	2	3	2	3	2
Teacher Name		Ghumare G. N.	CO3	1	2	2	3	2	2	3	2	3	3	1	1	2	1	3
Course Outcomes			CO4	0	1	3	1	3	2	1	2	1	2	3	2	3	2	0
	CO1	equations of different types of	CO5	2	3	1	2	1	3	2	3	2	2	2	2	0	1	2
	CO2	rate of reaction.	Average	1.60	1.60	1.80	2.00	2.20	2.20	2.20	2.20	1.80	1.60	2.00	2.20	2.00	1.60	1.60
	CO3	surface chemistry and applications																
	CO4	minimization of errors in																
	CO5	volumetric analysis.																

Class		S.Y.B.Sc	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH-302		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Inorganic and Organic Chemistry	CO1	1	2	3	1	2	3	1	2	3	1	2	3	12	3	3
Semester No		III	CO2	3	2	1	3	2	1	3	2	1	3	2	1	3	2	1
Teacher Name		S.A.Gunjal and S.G.Tikone	CO3	2	1	2	2	2	2	2	1	1	3	3	3	3	3	3
Course Outcomes			CO4	2	3	3	3	3	3	2	3	2	3	2	3	2	3	2
	CO1	for the formation of MO's from AO's.	CO5	3	3	3	2	2	2	3	3	2	2	3	2	3	2	3
	CO2	coordination compounds.	Average	2.20	2.20	2.40	2.20	2.20	2.20	2.20	2.20	1.80	2.40	2.40	2.40	4.60	2.60	2.40
	CO3	To correlate reagent and reactions.																
	CO4	aryl halides.																
	CO5	various reactions involved.																

Class		S. Y. BSC	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH -303		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3

Subject Name	Chemistry prctical	CO1	1	2	2	3	2	2	3	2	3	3	1	1	2	1	3
Semester No	III	CO2	1	1	3	1	3	2	1	2	1	2	3	2	3	2	0
Teacher Name	Dr. A.K. Kulkarni	CO3	2	1	1	2	1	3	2	3	2	2	2	1	0	1	2
Course Outcomes		CO4	1	3	2	1	3	2	2	3	1	2	1	2	3	2	2
	CO1 students should able to understand	CO5	2	2	3	2	2	1	0	2	1	1	2	3	2	3	1
	CO2 students should able to learn	Average	1.2	2.2	2.2	1.8	2.2	2.4	1.6	2.4	1.8	2	1.8	2	2	1.6	2
	CO3 student perform sephafation of																
	CO4 To study and apply in principle of																
	CO5 student should analyse Naze GS																

Class	S. Y. B. Sc.	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CH- 401		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	chemistry	CO1	1	2	2	3	2	2	3	2	3	3	1	1	2	1	3
Semester No	IV	CO2	0	1	3	1	3	2	1	2	1	2	3	2	3	2	0
Teacher Name	Ghumare G. N.	CO3	2	3	1	2	1	3	2	3	2	2	2	2	0	1	2
Course Outcomes		CO4	1	3	2	1	3	2	2	3	2	2	1	2	3	1	2
	CO1 equilibrium.	CO5	2	2	3	2	2	3	0	2	1	1	2	3	2	3	3
	CO2 To study the solutions of liquids in	Average	1.20	2.20	2.20	1.80	2.20	2.40	1.60	2.40	1.80	2.00	1.80	2.00	2.00	1.60	2.00
	CO3 electrolytic conductance and its																
	CO4 technique and its applications.																
	CO5 column chromatography and its																

Class	S.Y.B.Sc	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CH-402		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Inorganic and Organic Chemistry	CO1	1	2	2	3	2	2	3	2	3	3	1	1	2	1	3
Semester No	IV	CO2	2	1	3	1	3	1	1	2	1	2	3	2	3	2	0
Teacher Name	S.A.Gunjal and S. G. Tikone	CO3	1	3	1	1	1	3	2	3	2	2	2	2	0	1	2
Course Outcomes		CO4	1	1	2	1	3	2	2	3	2	2	1	2	3	1	2
	CO1 the structures aldehydes and ketones from their names or from	CO5	2	2	3	2	2	3	0	2	1	1	0	3	2	3	3
	CO2 reagent and reactions of aldehydes	Average	1.40	1.80	2.20	1.60	2.20	2.20	1.60	2.40	1.80	2.00	1.40	2.00	2.00	1.60	2.00
	CO3 and orbitals used for bonding.																
	CO4 conversion of functional groups.																
	CO5 and magnetic moment for various																

Class		S. Y. BSC	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH -403		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Chemistry prctical	CO1	1	3	2	1	1	2	2	2	2	2	2	2	2	3	2
Semester No		IV	CO2	2	3	2	2	2	1	2	2	2	2	2	2	2	2	3
Teacher Name		Dr. A.K. Kulkarni	CO3	2	1	1	2	2	3	2	2	2	2	2	2	2	3	2
Course Outcomes			CO4	1	3	2	1	2	2	2	3	3	2	2	2	3	3	3
	CO1	Students should able to understand	CO5	3	3	2	3	3	2	3	2	3	3	3	2	3	3	3
	CO2	Students should able to learn	Average	2.2	3	2.2	2	2.2	2	2.2	2.2	2.4	2.2	2.2	2	2.4	2.8	2.6
	CO3	Student perform sepafaton of																
	CO4	To study and apply in principle of																
	CO5	Student should analyse Na ₂ CO ₃ from soda, aspirin from APC tablets, complexometric titrations																

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Class		T. Y. B. Sc.	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH-501		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Physical Chemistry- I	CO1	3	1	3	3	3	1	3	3	3	3	3	3	3	3	3
Semester No		V	CO2	1	3	3	2	2	2	2	2	3	2	1	2	2	2	2
Teacher Name		Ghumare G.N.	CO3	3	3	1	2	1	2	3	3	3	2	3	1	3	3	3
Course Outcomes			CO4	3	1	3	2	2	2	3	3	2	2	3	2	2	2	2
	CO1	To study the fundamentals of quantum chemistry.	CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO2	To learn in detail about investigation of molecular structure, Important equations, applications of polarizability and dipole moment.	Average	2.60	2.20	2.60	2.40	2.20	2.00	2.80	2.80	2.80	2.40	2.60	2.20	2.60	2.60	2.60
	CO3	To study the microwave, infrared and Raman spectroscopy.																
	CO4	To study the fundamental laws of photochemistry.																
	CO5	To understand the concept of quantum yield. Phenomenon of fluorescence and phosphorescence. Types of photochemical reactions.																

Class	T. Y. B. Sc.	Course	Program Outcomes	PSOs
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Subject Code	CH-502	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Analytical Chemistry	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Semester No	V	CO2	3	3	3	2	2	2	2	2	3	2	3	2	2	2	2
Teacher Name	Dr. A.K. Kulkarni	CO3	3	3	2	2	1	2	3	3	3	2	3	1	3	3	3
Course Outcomes		CO4	3	3	3	2	2	2	3	3	2	2	3	2	2	2	2
	CO1	Recall the basic concepts and terminologies learned in topics like ionic equilibrium (concepts like common ion effect, α , pka, K_{sp}).	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO2	Learn and explain the newer concepts (like homogeneous precipitation, post precipitation, half wave potential, spectrophotometric titrations etc.) in Gravimetric analysis, polarography, and spectrophotometry by extending the basic concepts learnt previously.	3.00	3.00	2.80	2.40	2.20	2.40	2.80	2.80	2.80	2.40	3.00	2.20	2.60	2.60	2.60
	CO3	Compare the different thermogravimetric techniques by relating the changes measured / observed in physical characteristics w. r. t. temperature changes															
	CO4	To study inorganic qualitative analysis of binary mixture with borate and phosphate removal scheme															
	CO5	spectrophotometry, and define basic laws (like Beer's law).															

Class	T. Y. B. Sc.	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CH-503		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Physical Chemistry Practical	CO1	3	1	2	3	1	2	2	3	2	1	3	2	1	3	3

Semester No		v	CO2	2	3	3	3	2	2	2	2	2	2	2	3	2	3	3
Teacher Name		Ghumare G. N.	CO3	1	1	2	1	3	1	3	2	3	1	2	3	2	2	2
Course Outcomes			CO4	1	2	2	1	2	3	2	1	2	1	1	3	2	1	3
	CO1	To understand the refractometry technique and its applications , how to determine the molecular refraction of liquids	CO5	1	2	0	2	3	3	1	3	3	2	2	2	2	3	2
	CO2	To learn the spectrophotometry technique and its applications to estimate the amount of Cu(II) and Fe(II) ions in the given sample	Average	1.60	1.80	1.80	2.00	2.20	2.20	2.00	2.20	2.40	1.40	2.00	2.60	1.80	2.40	2.60
	CO3	To study the conductometry technique and its applications , to determine the concentration of sample solution and verification of onsagar equation																
	CO4	To know how determine the molecular weight of polymer by viscosity method																
	CO5	The analysis ofRiboflavin from vitamin capsul																

Class		T. Y. B. Sc.	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH-504		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Inorganic Chemistry-I	CO1	2	2	1	1	1	1	2	1	0	1	0	0	2	2	1
Semester No		v	CO2	1	2	2	2	1	2	2	3	1	1	1	1	3	1	2
Teacher Name		Dr. Kawade V.A.	CO3	2	2	2	3	1	2	1	3	2	2	1	0	2	3	1
Course Outcomes			CO4	3	2	2	2	2	1	1	2	1	1	1	1	1	2	2
	CO1	To understand the MOT of complexes, Charge transfer spectra,.	CO5	3	2	2	2	2	1	1	2	1	1	0	1	2	3	1

	CO2	To understand the classification of inorganic reaction and its mechanism, trans effect.	Average	2.20	2.00	1.80	2.00	1.40	1.40	1.40	2.20	1.00	1.20	0.60	0.60	2.00	2.20	1.40
	CO3	To understand the chemistry of d-block element and its trends in properties.																
	CO4	To understand the chemistry of meaning of term f-block elements, Inner transition elements, lanthanides, actinides																
	CO5	To understand the meaning of metal & semiconductor, and difference between metal, semiconductor and insulator																

Class		T.Y.B.Sc	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH-505		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Industrial Chemistry	CO1	2	2	1	1	1	1	2	3	0	1	0	0	2	2	1
Semester No		v	CO2	3	2	2	2	1	2	2	3	1	1	1	1	3	1	2
Teacher Name		Ms. S. A. Balid	CO3	2	2	2	3	1	2	1	3	2	2	1	0	2	3	1
Course Outcomes			CO4	3	2	2	2	2	1	1	2	1	1	1	1	2	2	2
	CO1	To understand the basic requirement of chemical industry including processes and different unit	CO5	3	2	2	2	1	1	1	2	1	1	0	1	2	3	2
	CO2	To study the manufacturing process of Ammonia , Nitric acid and Sulphuric acid	Average	2.60	2.00	1.80	2.00	1.20	1.40	1.40	2.60	1.00	1.20	0.60	0.60	2.20	2.20	1.60
	CO3	To study the details about Sugar Industry and Fermentation Industry and manufacture of fermented product																
	CO4	To understand Soap and detergent industry including their characteristics, preparation and uses.																
	CO5	To study the Dyes and and their reaction and Pigments																

Class		T.Y.B.Sc	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH-506		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Inorganic chemistry Practical	CO1	3	1	2	3	1	2	2	3	2	1	3	2	1	3	3
Semester No		V	CO2	2	3	3	3	2	2	2	2	2	2	2	3	2	3	3
Teacher Name		Mrs. Tikone S.G.	CO3	2	1	2	2	3	1	3	2	3	1	2	3	2	2	2
Course Outcome s			CO4	1	2	2	1	2	3	2	1	2	3	1	3	2	1	3
	CO1	Quantitative analysis using gravimetric principles	CO5	1	2	1	2	3	3	1	3	3	2	2	2	2	3	2
	CO2	Synthesis of metal complexes ,identification of metal and ligand using spot test	Average	1.80	1.80	2.00	2.20	2.20	2.20	2.00	2.20	2.40	1.80	2.00	2.60	1.80	2.40	2.60
	CO3	Principle and application of inorganic qualitative analysis																
	CO4	in order to avoid reagent and solvent loss spot test are important																
	CO5	seperation and identification of elements usinh particular reagenr.																

Class		T.Y.BSc Chemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH 507		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Organic Chemistry-I	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Semester No		V	CO2	3	3	3	2	2	2	2	2	3	2	3	2	2	2	
Teacher Name		Kasab V. M.	CO3	3	3	2	2	2	2	3	3	3	2	3	1	3	3	
Course Outcome s			CO4	3	3	3	2	2	2	3	3	3	2	3	2	2	2	

CO1	Students will understand Aromaticity and aromatic compounds their properties and chemical reactions.	CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO2	Students will understand Active methylene containing compounds their properties, chemical reactions and their applications in organic chemistry.	Average	3.00	3.00	2.80	2.40	2.40	2.40	2.80	2.80	3.00	2.40	3.00	2.20	2.60	2.60	2.60	2.60
CO3	Students will understand Organic Chemical Rearrangements to make them familiar with reaction mechanisms involved in them.																	
CO4	Students will understand Elimination reactions and chemistry involved in getting Carbon Carbon double bond. Will get familiar with different mechanisms involved in Elimination reactions and practicing writing mechanisms in elimination reactions																	
CO5	Students will practice various Organic reaction mechanisms in above mentioned reactions students will be ready for various entrance examinations by solving MCQ's.																	

Class		T.Y.BSc	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH-508		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Chemistry of Biomolecules	CO1	3	3	3	2	2	2	2	3	1	1	2	2	2	3	3
Semester No		v	CO2	3	3	3	2	2	2	2	2	3	2	3	2	2	2	2
Teacher Name		Ms. Sucheta Jadhav	CO3	3	2	2	2	2	2	3	3	3	2	3	1	3	3	3
Course Outcomes			CO4	2	1	3	2	1	2	3	3	3	2	3	2	2	2	2

	CO1	Introduction to molecular logic of life: The student will understand Cell types, Biological composition and organization of cell membrane, structure and function of various cell organelles of plant and animal cell. Concepts of biomolecules, Bonds that link monomeric units to form macromolecule	CO5	2	1	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO2	Carbohydrates and Lipids: The student will understand the types of carbohydrates and lipids, their biochemical significance in living organisms, structure of carbohydrates and lipids, reactions of carbohydrates with Glucose as example. Properties of carbohydrate and lipids	Average	2.60	2.00	2.80	2.20	2.00	2.20	2.60	2.80	2.60	2.00	2.80	2.00	2.40	2.60	2.60
	CO3	Amino acids and proteins: The student will understand the structure and types of amino acids. Reactions of amino acids. Properties of amino acids. Peptide bond formation. Types of proteins. Structural features in proteins. Effect of pH on structure of amino acid, Determination of N and C terminus of peptide chain.																
	CO4	Enzymes: The student know the classes of enzymes with subclasses and examples. Enzyme specificity, Equations of enzyme kinetics Km and its significance, features of various types of enzyme inhibitions, industrial applications of enzymes																
	CO5	Hormones: Basic concepts of Endocrinology. Types of Endocrine glands and their hormones. Biochemical nature of hormones. Mechanism of action of lipophilic and hydrophilic hormones.																

Class		T.Y.BSc Chemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH 509		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Organic Chemistry Practical-I	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	

Semester No		V	CO2	3	3	3	2	2	2	2	2	2	3	2	3	2	2	2	2
Teacher Name		Kasab V. M.	CO3	3	3	2	2	1	2	3	3	3	2	3	1	3	3	3	3
Course Outcomes			CO4	3	3	3	2	2	2	3	3	2	2	3	2	2	2	2	2
	CO1	The students will be able to perform Organic Qualitative analysis.	CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO2	Preparations of various Organic compound will make the students gain the necessary knowledge and skills to get desired/ expected organic compound with rather ease	Average	3.00	3.00	2.80	2.40	2.20	2.40	2.80	2.80	2.80	2.40	3.00	2.20	2.60	2.60	2.60	2.60
	CO3	Students will be able to achieve necessary knowledge/skills for getting utmost purity for their products by using various purification techniques.																	
	CO4	Students will understand how to monitor their reaction and products by using techniques like TLC																	
	CO5																		

Class		T.Y.BSc Chemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH-510(B)		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Polymer Chemistry	CO1	3	2	3	2	3	3	3	3	3	3	3	3	3	3	3
Semester No		V	CO2	3	3	3	3	2	2	2	2	3	2	3	2	2	2	2
Teacher Name		S. B. Shinde	CO3	3	3	2	2	2	2	3	3	3	2	3	1	3	3	3
Course Outcomes			CO4	2	3	3	2	2	2	3	3	2	2	3	2	2	2	2
	CO1	Understand basic concepts of Polymer chemistry	CO5	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3
	CO2	Understand principles and applications of Polymerization reactions	Average	2.80	2.80	2.80	2.40	2.20	2.40	2.80	2.80	2.80	2.40	3.00	2.20	2.60	2.60	2.60

	CO3	Apply various techniques to know molecular weights of polymers
	CO4	Students will know various commercial polymers and their applications
	CO5	Students will know various commercial polymers and their applications

Class		T.Y.BSc Chemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH-511(A)		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Environmental Chemistry	CO1	3	2	3	2	3	3	2	3	3	3	3	3	3	3	3
Semester No		V	CO2	2	1	3	3	2	2	2	2	3	2	3	2	2	2	2
Teacher Name		Mrs A. K. Wadhawa	CO3	3	3	2	2	1	2	3	3	3	2	3	1	3	3	3
Course Outcomes			CO4	2	3	1	2	2	2	3	3	2	2	3	2	2	2	2
	CO1	Understand basic concepts of Environmental Chemistry	CO5	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3
	CO2	Understand principles and applications and scope of Environmental Chemistry	Average	2.60	2.40	2.40	2.40	2.00	2.40	2.60	2.80	2.80	2.40	3.00	2.20	2.60	2.60	2.60
	CO3	Apply various techniques to know hydrosphere and water pollution																
	CO4	Students will know various analytical techniques in water analysis																
	CO5	Students will know water pollution and its treatment method																

Class		T. Y. B. Sc.	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH-601		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Physical Chemistry-II	CO1	3	2	3	1	3	3	2	3	3	3	3	3	3	3	3

Semester No		VI	CO2	2	2	3	3	2	2	2	2	3	2	3	2	2	2	2
Teacher Name		Ghumare G.N.	CO3	3	3	1	2	1	2	3	3	3	2	3	1	3	3	3
Course Outcomes			CO4	1	3	1	2	2	2	3	3	2	2	3	2	2	2	2
	CO1	To learn the construction of electrochemical cells. Nernst equation for E.M.F. of electrodes and electrochemical cells.	CO5	3	3	3	3	2	1	3	3	3	3	3	3	3	3	3
	CO2	To understand the construction and working of chemical cells and concentration cells. Applications of e.m.f. measurements.	Average	2.40	2.60	2.20	2.20	2.00	2.00	2.60	2.80	2.80	2.40	3.00	2.20	2.60	2.60	2.60
	CO3	To study the laws of crystallography and crystal structure analysis.																
	CO4	To study the phenomenon of radioactivity and kinetics of radioactive decay.																
	CO5	To study the applications of radioisotopes and measurement of radioactivity.																

Class		T. Y. B. Sc.	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH-602		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Physical Chemistry III	CO1	2	2	2	2	1	3	1	2	3	3	1	2	2	2	1
Semester No		VI	CO2	2	2	1	3	1	2	3	3	1	2	2	1	3	1	2
Teacher Name		Dr. Dongare R. K	CO3	2	2	2	2	2	1	2	2	2	2	2	2	2	3	1
Course Outcomes			CO4	1	1	3	2	2	1	3	2	2	1	3	3	2	2	2

	CO1	Remember basic concepts of colligative properties and kinetics.	CO5	0	2	2	1	2	2	2	1	2	2	2	3	2	3	2
	CO2	Understand principles and applications Electronic structure and macroscopic properties	Average	1.40	1.80	2.00	2.00	1.60	1.80	2.20	2.00	2.00	2.00	2.00	2.20	2.20	2.20	1.60
	CO3	Apply various techniques for gaining insights Kinetics of Reactions in the Solid State																
	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	Evaluate Molecular weights of polymers: Average Molecular weight, Number Average & Weight Average Molecular weight, degree of polymers																

Class		T. Y. B. Sc.	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH-603		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Physical Chemistry Practical	CO1	2	2	3	2	1	3	1	3	3	3	1	2	2	2	1
Semester No		VI	CO2	2	1	1	3	2	2	3	3	1	2	2	1	3	1	2
Teacher Name		Ghumare G. N.	CO3	2	2	2	2	2	1	2	2	2	2	2	2	2	3	1
Course Outcomes			CO4	1	1	3	2	2	1	2	2	2	1	3	3	2	2	2
	CO1	To determine the dissociation constant and PKa value of weak acid, formal redox potential and composition of complexes by potentiometric titrations	CO5	1	2	2	2	2	2	2	1	2	2	2	3	2	3	2

	CO2	To learn pH metry technique and its applications, to determine degree of hydrolysis of aniline hydrochloride,dissociation constant of weak acid.	Average	1.60	1.60	2.20	2.20	1.80	1.80	2.00	2.20	2.00	2.00	2.00	2.20	2.20	2.20	1.60
	CO3	To measure the radioactivity of radioactive material by G.M. counter.																
	CO4	To study the colligative properties of electrolyte solutions and its applications																
	CO5	To know how to determine the concentration of sulphate and chloride ions by turbidometry technique																

Class		T. Y. B. Sc.	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH-604		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Inorganic Chemistry –II	CO1	2	2	1	1	1	1	2	3	0	1	0	0	2	2	1
Semester No		VI	CO2	3	2	2	2	1	2	2	3	1	1	1	1	3	1	2
Teacher Name		Dr. Kawade V.A.	CO3	2	2	2	3	1	2	1	3	2	2	1	0	2	3	1
Course Outcomes			CO4	3	2	2	2	2	1	1	2	1	1	1	1	2	2	2
	CO1	To understand the organ metallic compound, its applications, M-C bond formation.	CO5	3	2	2	2	1	1	1	2	1	1	0	1	2	3	2
	CO2	To understand the homogeneous and heterogeneous catalysis reactions, Types of catalysis, differences between homogeneous and heterogeneous catalysis.	Average	2.60	2.00	1.80	2.00	1.20	1.40	1.40	2.60	1.00	1.20	0.60	0.60	2.20	2.20	1.60
	CO3	To understand role of metal in bioinorganic chemistry, different types of metalloprotein.																

CO4	To understand different types of polymers, comparison between the inorganic and organic polymers.
CO5	To understand the ionic liquid Inorganic solids/ionic liquids and its application in reactions.

Class		T.Y.B.Sc	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH-605		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Inorganic chemistry III	CO1	2	3	1	1	3	1	2	3	0	1	0	0	2	2	2
Semester No		VI	CO2	3	2	2	2	1	2	2	3	1	1	2	1	3	1	2
Teacher Name		Mrs.Tikone S.G.	CO3	2	2	3	3	2	2	1	3	2	2	1	0	2	3	2
Course Outcomes			CO4	2	2	2	3	2	1	2	2	1	1	1	1			
	CO1	different theories of acids and bases	CO5	3	2	2	2	1	1	1	2	1	1	0	1	2	3	2
	CO2	History of zeolite and applications of zeolites.	Average	2.40	2.20	2.00	2.20	1.80	1.40	1.60	2.60	1.00	1.20	0.80	0.60	2.20	2.20	2.00
	CO3	Nanomaterial synthesis and applications																
	CO4	to know the effect of toxic chemicals																
	CO5	know thw crystal structure of ionic solid																

Class		T.Y.B.Sc	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH-606		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Inorganic Chemistry Practical	CO1	2	2	1	2	1	3	1	2	3	3	1	2	2	2	1
Semester No		VI	CO2	2	2	2	3	1	2	3	3	1	2	1	1	3	1	2

Teacher Name	Mrs.Tikone S.G.	CO3	2	2	2	2	2	1	2	2	2	2	2	2	2	2	3	1
Course Outcomes		CO4	3	1	3	2	1	1	3	2	1	1	3	3	2	2	2	2
CO1	Quantitative estimation using volumetric analysis	CO5	3	2	2	2	1	1	1	2	1	1	0	1	2	3	2	
CO2	detection of element by using flame photometer.	Average	2.40	1.80	2.00	2.20	1.20	1.60	2.00	2.20	1.60	1.80	1.40	1.80	2.20	2.20	1.60	
CO3	solution preparation in ppm																	
CO4	nanomaterial synthesis and applications																	
CO5	student should understand column chromatography																	

Class	T.Y.B.Sc	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CH-607		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Organic Chemistry II	CO1	3	2	2	2	1	3	2	2	3	3	1	2	2	2	1
Semester No	VI	CO2	2	2	2	3	1	2	3	3	1	2	1	1	3	1	2
Teacher Name	Dr. S. B. Kasar	CO3	2	2	2	2	2	1	2	2	2	2	2	2	3	1	
Course Outcomes		CO4	3	2	3	2	2	1	3	2	2	2	3	3	2	2	2
CO1	This course typically focus on equipping students with basic knowledge and skills in the field of spectroscopy	CO5	3	2	2	2	2	1	1	2	1	1	0	1	2	3	2
CO2	Students should gain basic understanding of U. V. , I. R. and PMR	Average	2.60	2.00	2.20	2.20	1.60	1.60	2.20	2.20	1.80	2.00	1.40	1.80	2.20	2.20	1.60
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 able to predict basic values in U. V. , I. R. and PMR
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Class		T.Y.BSc Chemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH 608		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Organic Chemistry -III	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
Semester No		VI	CO2	3	2	3	2	2	2	2	3	2	3	2	2	2	2	
Teacher Name		Kasab V. M.	CO3	3	3	2	2	1	2	3	2	3	2	3	1	3	3	
Course Outcomes			CO4	3	3	3	2	2	2	3	3	2	2	3	2	2	2	
	CO1	Students will understand concept of Retrosynthetic analysis and different terms involved. Practice retrosynthetic analysis of some simple compounds.	CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
	CO2	Students will understand few named reactions. Practice mechanisms for them, understand various parameters and conditions required for pushing the reactions towards facile pathways	Average	3.00	2.80	2.80	2.40	2.20	2.40	2.80	2.60	2.80	2.40	3.00	2.20	2.60	2.60	
	CO3	Students will understand various chemical reagents their usage, their applications and proper methods for handling them. They will be able to solve/ practice some reaction mechanisms on paper																
	CO4	To introduce students various Natural products, ways to classify them, and isolate them. Planning for synthesis of few simple natural products																
	CO5	Students will practice various Organic reaction mechanisms in above mentioned reactions students will be ready for various entrance examinations by solving MCQ's.																

Class		T.Y.BSc Chemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH 609		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Organic Chemistry Practical-II	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Semester No		VI	CO2	3	2	3	2	2	2	2	2	3	2	3	2	2	2	2
Teacher Name		Kasab V. M.	CO3	3	3	2	3	1	2	3	2	2	2	3	1	3	3	3
Course Outcomes			CO4	3	3	3	2	2	2	3	3	2	2	3	2	2	2	2
	CO1	Students will be able to Interpret IR and PMR Spectra	CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	CO2	Students will be able to understand Quantitative analysis of Organic Compounds. The students will be able to do find their way forward to quantify using appropriate techniques and do the necessary computations to get the results	Average	3.00	2.80	2.80	2.60	2.20	2.40	2.80	2.60	2.60	2.40	3.00	2.20	2.60	2.60	2.60
	CO3	Students will be able to understand various Organic Extractions methods for isolation of various natural products																
	CO4	Students will be able to understand concept of column chromatography and will be able to purify some mixtures of organic compounds.																
	CO5	Students will be able to develop a rational approach to tackle issues that may come across chemical laboratory																

Class		T.Y.BSc Chemistry	Course Outcomes	Program Outcomes												PSOs		
Subject Code		CH-610(A)		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name		Chemistry of Soil and Agrochemicals	CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Semester No		VI	CO2	3	2	3	2	2	2	2	2	3	2	3	2	2	2	2

Teacher Name	Mrs A. K. Wadhawa	CO3	3	3	2	3	1	2	3	2	2	2	3	1	3	3	3
Course Outcomes		CO4	3	3	3	2	2	2	3	3	2	2	3	2	2	2	2
CO1	Know the different components and properties of soil.	CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO2	Know classification of soil on the basis of pH.	Average	3.00	2.80	2.80	2.60	2.20	2.40	2.80	2.60	2.60	2.40	3.00	2.20	2.60	2.60	2.60
CO3	Identify the problematic soil and recommend method for their reclamation.																
CO4	Know the different plant nutrients required for plants and their functions.																
CO5	Know the role of various fertilizers and manures required for plant growth.																

Class	T.Y.B.Sc	Course Outcomes	Program Outcomes												PSOs		
Subject Code	CH-611(A)		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Subject Name	Analytical chemistry	CO1	2	2	1	1	1	1	2	3	0	1	0	0	2	2	1
Semester No	VI	CO2	3	2	2	2	1	2	2	3	1	1	1	1	3	1	2
Teacher Name	Mr.Kadamdhad Kunal J.	CO3	2	2	2	3	1	2	1	3	2	2	1	0	2	3	1
Course Outcomes		CO4	3	2	2	2	2	1	1	2	1	1	1	1	2	2	2
CO1	To understand the principle of solvent extraction and their theoretical concepts	CO5	3	2	2	2	1	1	1	2	1	1	0	1	2	3	2
CO2	To understand and study the different techniques of chromatography	Average	2.60	2.00	1.80	2.00	1.20	1.40	1.40	2.60	1.00	1.20	0.60	0.60	2.20	2.20	1.60
CO3	To study liquid and gas chromatography in detail																
CO4	To study atomic adsorption chromatography in detail																
CO5	To study flame emission spectroscopy																

CO-PO Mapping

		Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	
FY	FY	1 CH-101	1.60	1.60	2.00	1.20	1.60	7.60	2.00	1.40	1.80	1.60	2.40	2.00	
		2 CH-102	1.60	1.60	2.60	1.20	1.60	2.20	2.00	1.80	2.20	1.80	2.40	2.20	
		3 CH-103	1.60	2.00	2.00	2.20	1.80	1.60	1.80	1.80	1.60	1.80	1.80	1.60	
		4 CH-201	2.25	2.25	2.75	2.00	1.25	1.75	2.50	1.50	2.00	2.25	1.75	1.75	
		5 CH-202	1.60	2.00	1.60	1.60	2.00	2.00	2.00	2.00	1.80	1.60	2.20	1.80	1.60
		6 CH-203	2.00	1.80	1.80	2.20	1.60	1.80	2.00	2.20	1.60	1.80	2.00	2.00	2.00
SY	SY	1 CH-301	1.60	1.60	1.80	2.00	2.20	2.20	2.20	2.20	1.80	1.60	2.00	2.20	
		2 CH-302	2.20	2.20	2.40	2.20	2.20	2.20	2.20	2.20	1.80	2.40	2.40	2.40	
		3 CH-303	1.20	2.20	2.20	1.80	2.20	2.40	1.60	2.40	1.80	2.00	1.80	2.00	
		4 CH-401	1.20	2.20	2.20	1.80	2.20	2.40	1.60	2.40	1.80	2.00	1.80	2.00	
		5 CH-402	1.40	1.80	2.20	1.60	2.20	2.20	1.60	2.40	1.80	2.00	1.40	2.00	
		6 CH-403	2.20	3.00	2.20	2.00	2.20	2.00	2.20	2.20	2.40	2.20	2.20	2.00	
TY	TY	1 CH-501	2.60	2.20	2.60	2.40	2.20	2.00	2.80	2.80	2.80	2.40	2.60	2.20	
		2 CH-502	3.00	3.00	2.80	2.40	2.20	2.40	2.80	2.80	2.80	2.40	3.00	2.20	
		3 CH-503	1.60	1.80	1.80	2.00	2.20	2.20	2.00	2.20	2.40	1.40	2.00	2.60	
		4 CH-504	2.20	2.00	1.80	2.00	1.40	1.40	1.40	2.20	1.00	1.20	0.60	0.60	
		5 CH-505	2.60	2.00	1.80	2.00	1.20	1.40	1.40	2.60	1.00	1.20	0.60	0.60	
		6 CH-506	1.80	1.80	2.00	2.20	2.20	2.20	2.00	2.20	2.40	1.80	2.00	2.60	
		7 CH-507	3.00	3.00	2.80	2.40	2.40	2.40	2.80	2.80	3.00	2.40	3.00	2.20	
		8 CH-508	2.60	2.00	2.80	2.20	2.00	2.20	2.60	2.80	2.60	2.00	2.80	2.00	
		9 CH-509	3.00	3.00	2.80	2.40	2.20	2.40	2.80	2.80	2.80	2.40	3.00	2.20	
		10 CH-510(B)	2.80	2.80	2.80	2.40	2.20	2.40	2.80	2.80	2.80	2.40	3.00	2.20	
		11 CH-511(A)	2.60	2.40	2.40	2.40	2.00	2.40	2.60	2.80	2.80	2.40	3.00	2.20	
		12 CH-601	2.40	2.60	2.20	2.20	2.00	2.00	2.60	2.80	2.80	2.40	3.00	2.20	
		13 CH-602	1.40	1.80	2.00	2.00	1.60	1.80	2.20	2.00	2.00	2.00	2.00	2.20	
		14 CH-603	1.60	1.60	2.20	2.20	1.80	1.80	2.00	2.20	2.00	2.00	2.00	2.20	
15 CH-604	2.60	2.00	1.80	2.00	1.20	1.40	1.40	2.60	1.00	1.20	0.60	0.60			
16 CH-605	2.40	2.20	2.00	2.20	1.80	1.40	1.60	2.60	1.00	1.20	0.80	0.60			
17 CH-606	2.40	1.80	2.00	2.20	1.20	1.60	2.00	2.20	1.60	1.80	1.40	1.80			
18 CH-607	2.60	2.00	2.20	2.20	1.60	1.60	2.20	2.20	1.80	2.00	1.40	1.80			
19 CH-608	3.00	2.80	2.80	2.40	2.20	2.40	2.80	2.60	2.80	2.40	3.00	2.20			
20 CH-609	3.00	2.80	2.80	2.60	2.20	2.40	2.80	2.60	2.60	2.40	3.00	2.20			
21 CH-610(A)	3.00	2.80	2.80	2.60	2.20	2.40	2.80	2.60	2.60	2.40	3.00	2.20			
22 CH-611(A)	2.60	2.00	1.80	2.00	1.20	1.40	1.40	2.60	1.00	1.20	0.60	0.60			

CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
0.832	0.832	1.04	0.624	0.832	3.952	1.04	0.728	0.936	0.832	1.248	1.04
0.32	0.32	0.52	0.24	0.32	0.44	0.4	0.36	0.44	0.36	0.48	0.44
1.6	2	2	2.2	1.8	1.6	1.8	1.8	1.6	1.8	1.8	1.6
1.17	1.17	1.43	1.04	0.65	0.91	1.3	0.78	1.04	1.17	0.91	0.91
0.32	0.4	0.32	0.32	0.4	0.4	0.4	0.36	0.32	0.44	0.36	0.32
1.253333	1.128	1.128	1.378667	1.002667	1.128	1.253333	1.378667	1.002667	1.128	1.253333	1.253333
0.832	0.832	0.936	1.04	1.144	1.144	1.144	1.144	0.936	0.832	1.04	1.144
1.144	1.144	1.248	1.144	1.144	1.144	1.144	1.144	0.936	1.248	1.248	1.248
1.2	2.2	2.2	1.8	2.2	2.4	1.6	2.4	1.8	2	1.8	2
0.624	1.144	1.144	0.936	1.144	1.248	0.832	1.248	0.936	1.04	0.936	1.04
0.728	0.936	1.144	0.832	1.144	1.144	0.832	1.248	0.936	1.04	0.728	1.04
2.2	3	2.2	2	2.2	2	2.2	2.2	2.4	2.2	2.2	2
1.352	1.144	1.352	1.248	1.144	1.04	1.456	1.456	1.456	1.248	1.352	1.144
1.56	1.56	1.456	1.248	1.144	1.248	1.456	1.456	1.456	1.248	1.56	1.144
1.6	1.8	1.8	2	2.2	2.2	2	2.2	2.4	1.4	2	2.6
1.144	1.04	0.936	1.04	0.728	0.728	0.728	1.144	0.52	0.624	0.312	0.312
0.52	0.4	0.36	0.4	0.24	0.28	0.28	0.52	0.2	0.24	0.12	0.12
1.8	1.8	2	2.2	2.2	2.2	2	2.2	2.4	1.8	2	2.6
1.88	1.88	1.75466667	1.504	1.504	1.504	1.754667	1.754667	1.88	1.504	1.88	1.378667
2.184	1.68	2.352	1.848	1.68	1.848	2.184	2.352	2.184	1.68	2.352	1.68
3	3	2.8	2.4	2.2	2.4	2.8	2.8	2.8	2.4	3	2.2
2.8	2.8	2.8	2.4	2.2	2.4	2.8	2.8	2.8	2.4	3	2.2
2.184	2.016	2.016	2.016	1.68	2.016	2.184	2.352	2.352	2.016	2.52	1.848
2.016	2.184	1.848	1.848	1.68	1.68	2.184	2.352	2.352	2.016	2.52	1.848
1.4	1.8	2	2	1.6	1.8	2.2	2	2	2	2	2.2
1.6	1.6	2.2	2.2	1.8	1.8	2	2.2	2	2	2	2.2
1.906667	1.466667	1.32	1.466667	0.88	1.026667	1.026667	1.906667	0.733333	0.88	0.44	0.44
1.12	1.026667	0.933333333	1.026667	0.84	0.653333	0.746667	1.213333	0.466667	0.56	0.373333	0.28
2.4	1.8	2	2.2	1.2	1.6	2	2.2	1.6	1.8	1.4	1.8
1.352	1.04	1.144	1.144	0.832	0.832	1.144	1.144	0.936	1.04	0.728	0.936
1.72	1.605333	1.605333333	1.376	1.261333	1.376	1.605333	1.490667	1.605333	1.376	1.72	1.261333
3	2.8	2.8	2.6	2.2	2.4	2.8	2.6	2.6	2.4	3	2.2
1.72	1.605333	1.605333333	1.490667	1.261333	1.376	1.605333	1.490667	1.490667	1.376	1.72	1.261333
2.045333	1.573333	1.416	1.573333	0.944	1.101333	1.101333	2.045333	0.786667	0.944	0.472	0.472

Percentage CO-PO ATTAINMENT

PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
52	52	52	52	52	52	52	52	52	52	52	52
20	20	20	20	20	20	20	20	20	20	20	20
100	100	100	100	100	100	100	100	100	100	100	100
52	52	52	52	52	52	52	52	52	52	52	52
20	20	20	20	20	20	20	20	20	20	20	20
62.66667	62.66667	62.66666667	62.66667	62.66667	62.66667	62.66667	62.66667	62.66667	62.66667	62.66667	62.66667
52	52	52	52	52	52	52	52	52	52	52	52
52	52	52	52	52	52	52	52	52	52	52	52
100	100	100	100	100	100	100	100	100	100	100	100
52	52	52	52	52	52	52	52	52	52	52	52
52	52	52	52	52	52	52	52	52	52	52	52
100	100	100	100	100	100	100	100	100	100	100	100
52	52	52	52	52	52	52	52	52	52	52	52
52	52	52	52	52	52	52	52	52	52	52	52
100	100	100	100	100	100	100	100	100	100	100	100
52	52	52	52	52	52	52	52	52	52	52	52
20	20	20	20	20	20	20	20	20	20	20	20
100	100	100	100	100	100	100	100	100	100	100	100
62.66667	62.66667	62.66666667	62.66667	62.66667	62.66667	62.66667	62.66667	62.66667	62.66667	62.66667	62.66667
84	84	84	84	84	84	84	84	84	84	84	84
100	100	100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100	100	100
84	84	84	84	84	84	84	84	84	84	84	84
84	84	84	84	84	84	84	84	84	84	84	84
100	100	100	100	100	100	100	100	100	100	100	100
100	100	100	100	100	100	100	100	100	100	100	100
73.33333	73.33333	73.33333333	73.33333	73.33333	73.33333	73.33333	73.33333	73.33333	73.33333	73.33333	73.33333
46.66667	46.66667	46.66666667	46.66667	46.66667	46.66667	46.66667	46.66667	46.66667	46.66667	46.66667	46.66667
100	100	100	100	100	100	100	100	100	100	100	100
52	52	52	52	52	52	52	52	52	52	52	52
57.33333	57.33333	57.33333333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333
100	100	100	100	100	100	100	100	100	100	100	100
57.33333	57.33333	57.33333333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333	57.33333
78.66667	78.66667	78.66666667	78.66667	78.66667	78.66667	78.66667	78.66667	78.66667	78.66667	78.66667	78.66667

CO-PSO MAPPING

	Course	PSO1	PSO2	PSO3
1	CH-101	1.60	1.60	1.80
2	CH-102	1.60	1.60	1.80
3	CH- 103	1.40	1.20	1.60
4	CH-201	2.00	1.75	2.00
5	CH-202	1.80	1.80	2.00
6	CH- 203	1.80	2.00	2.40
1	CH- 301	2.00	1.60	1.60
2	CH-302	4.60	2.60	2.40
3	CH -303	2.00	1.60	2.00
4	CH- 401	2.00	1.60	2.00
5	CH-402	2.00	1.60	2.00
6	CH -403	2.40	2.80	2.60
1	CH-501	2.60	2.60	2.60
2	CH-502	2.60	2.60	2.60
3	CH-503	1.80	2.40	2.60
4	CH-504	2.00	2.20	1.40
5	CH-505	2.20	2.20	1.60
6	CH-506	1.80	2.40	2.60
7	CH 507	2.60	2.60	2.60
8	CH-508	2.40	2.60	2.60
9	CH 509	2.60	2.60	2.60
10	CH-510(B)	2.60	2.60	2.60
11	CH-511(A)	2.60	2.60	2.60
12	CH-601	2.60	2.60	2.60
13	CH-602	2.20	2.20	1.60
14	CH-603	2.20	2.20	1.60
15	CH-604	2.20	2.20	1.60
16	CH-605	2.20	2.20	2.00
17	CH-606	2.20	2.20	1.60
18	CH-607	2.20	2.20	1.60
19	CH 608	2.60	2.60	2.60
20	CH 609	2.60	2.60	2.60
21	CH-610(A)	2.60	2.60	2.60
22	CH-611(A)	2.20	2.20	1.60

CO-PSO ATTAINMENT

	Course	PSO1	PSO2	PSO3
	CH-101	0.832	0.832	0.936
	CH-102	0.32	0.32	0.36
	CH- 103	1.4	1.2	1.6
	CH-201	1.04	0.91	1.04
	CH-202	0.36	0.36	0.4
	CH- 203	1.128	1.253333	1.504
	CH- 301	1.04	0.832	0.832
	CH-302	2.392	1.352	1.248
	CH -303	2	1.6	2
	CH- 401	1.04	0.832	1.04
	CH-402	1.04	0.832	1.04
	CH -403	2.4	2.8	2.6
	CH-501	1.352	1.352	1.352
	CH-502	1.352	1.352	1.352
	CH-503	1.8	2.4	2.6
	CH-504	1.04	1.144	0.728
	CH-505	0.44	0.44	0.32
	CH-506	1.8	2.4	2.6
	CH 507	1.629333	1.629333	1.629333
	CH-508	2.016	2.184	2.184
	CH 509	2.6	2.6	2.6
	CH-510(B)	2.6	2.6	2.6
	CH-511(A)	2.184	2.184	2.184
	CH-601	2.184	2.184	2.184
	CH-602	2.2	2.2	1.6
	CH-603	2.2	2.2	1.6
	CH-604	1.613333	1.613333	1.173333
	CH-605	1.026667	1.026667	0.933333
	CH-606	2.2	2.2	1.6
	CH-607	1.144	1.144	0.832
	CH 608	1.490667	1.490667	1.490667
	CH 609	2.6	2.6	2.6
	CH-610(A)	1.490667	1.490667	1.490667
	CH-611(A)	1.730667	1.730667	1.258667

CO-PSO ATTAINMENT

	Course	PSO1	PSO2	PSO3
	CH-101	52	52	52
	CH-102	20	20	20
	CH- 103	100	100	100
	CH-201	52	52	52
	CH-202	20	20	20
	CH- 203	62.66667	62.66667	62.66667
	CH- 301	52	52	52
	CH-302	52	52	52
	CH -303	100	100	100
	CH- 401	52	52	52
	CH-402	52	52	52
	CH -403	100	100	100
	CH-501	52	52	52
	CH-502	52	52	52
	CH-503	100	100	100
	CH-504	52	52	52
	CH-505	20	20	20
	CH-506	100	100	100
	CH 507	62.66667	62.66667	62.66667
	CH-508	84	84	84
	CH 509	100	100	100
	CH-510(B)	100	100	100
	CH-511(A)	84	84	84
	CH-601	84	84	84
	CH-602	100	100	100
	CH-603	100	100	100
	CH-604	73.33333	73.33333	73.33333
	CH-605	46.66667	46.66667	46.66667
	CH-606	100	100	100
	CH-607	52	52	52
	CH 608	57.33333	57.33333	57.33333
	CH 609	100	100	100
	CH-610(A)	57.33333	57.33333	57.33333
	CH-611(A)	78.66667	78.66667	78.66667

FY

SY

TY