

“Dissemination of Education through Knowledge, Science and Culture”
-Shikshanmaharshi Dr. Babuji Salunkhe
Shri Swami Vivekanand Shikshan Sanstha, Kolhapur's

Vivekanand College, Kolhapur

(Empowered Autonomous)

(Affiliated with Shivaji University, Kolhapur)

DEPARTMENT OF CHEMISTRY

SYLLABUS COMPLITION REPORT

(2023-24)

Sr. No.	Name of Faculty	Designation
1	Dr. Mrs. S. D. Shirke	Head of Department
2	Prof. Dr. A. S. Kumbhar	Professor
3	Mr. S. S. Kadam	Assistant Professor
4	Dr. S. S. Ankushrao	Assistant Professor
5	Dr. Mrs. S. D. Shinde	Assistant Professor
6	Dr. Mrs. A. S. Tapase	Assistant Professor
7	Dr. D. S. Gaikwad	Assistant Professor
8	Dr. A. A. Patravale	Assistant Professor
9	Mr. A. T. Mane	Assistant Professor
10	Dr. Ms. S. D. Kharade	Assistant Professor
11	Ms. S. N. Inamdar	Assistant Professor
12	Ms. P. A. Gholap	Assistant Professor
13	Ms. V. S. Rajmane	Assistant Professor



S. D. Shirke

(Dr. Mrs. S. D. Shirke)

HEAD

**DEPARTMENT OF CHEMISTRY
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)**

Vivekanand College, Kolhapur (Empowered Autonomous)

Academic Year: 2023-24

Semesters: B.Sc. III, Sem-VI


Department: Chemistry

Subject: Chemistry

Course Title: DSE-III-1002F2: Organic Chemistry and Industrial

Name of the Teacher: Dr. Mrs. Shirke S.D.

Month December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	1. Organic Chemistry: Nuclear Magnetic Resonance Spectroscopy	<ul style="list-style-type: none"> • Introduction. • Definition, Principle. Magnetic and Nonmagnetic Nuclei, Precessional Frequency and spinning nucleus with flipping of proton spin state. Chemical Shift - Definition <p>Practicals – Separation of Organic Binary Mixtures-02, Estimation of M. W. of monobasic acid</p>
08	28	36		
Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Continued...	<ul style="list-style-type: none"> • Chemical Shift – Factors affecting chemical shift, Shielding and Deshielding, Spin- spin Coupling – n+1 Rule. Peak area and related Examples. • Practicals – Separation of Binary Mixtures-04
08	28	36		
Month: February			Module/Unit:	Sub-units planned
08	28	36	2. Industrial Chemistry	<ul style="list-style-type: none"> • Merits and Demerits of TMS, • Coupling Constant and its Types • Examples- Identify the structures from NMR data. <p>2. Sugar and Jaggery Industry- Manufacture of Raw Sugar – Extraction of juice, Clarification, Multiple effect evaporator- Concentration,</p>
Month: March			Module/Unit:	Sub-units planned
08	28	36	Continued...	Centrifugation , Drying. Manufacture of White sugar- All steps repeated. Refining of sugar.
				<ul style="list-style-type: none"> • Byproducts of sugar industry
Month: April			Module/Unit:	Sub-Units planned
04	14	18	Continued...	<ul style="list-style-type: none"> • Manufacture of Jaggery, • Antimicrobial testing of Jaggery


Dr. S. D. Shirke
Shirke




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Department of Chemistry Syllabus Completion Report 2023-24- : SEM- II, IV and VI

Teacher Name: Dr. Mrs. S. D. Shirke

Class	Subject	Total Units	Completed Units	Remaining Units
B.Sc. I (Sem- II) NEP	Major and Minor Open Elective	----	----- No organic Chemistry paper in SEM-II Practicals – As per Syllabus	NIL
B.Sc. II (Sem IV)	Organic Chemistry	01	<ul style="list-style-type: none"> • Amines and Diazonium Salts :Introduction Amines- Definition , Classification, Preparation methods • Classification, Preparation of Primary , secondary and Tertiary amines.- Chemical Reactions • Diazonium Salts-Definition, examples • Preparation of diazonium salts from aromatic amines and HNO₂ Electrophilic Substitution reactions and Sandmeyer's reactions. Practicals –As per syllabus	NIL NIL
B.Sc. III Sem VI	Organic Chemistry	01	Unit I- NMR spectroscopy Spin states, Nuclear resonance, Precessional frequency, Instrumentation, , Chemical shift, shielding and Deshielding, Instrumentation and ,Coupling Constant, Chemical shift, , Coupling Constant, Peak area,-Problems on NMR.	NIL
	Industrial Chemistry	01	UNIT II- Sugar and Jaggary Industry: Manufacture of Raw Sugar – Extraction of juice, Clarification,, Multiple effect evaporator-Concentration Centrifugation, Drying . Manufacture of White sugar- All steps repeated., Refining of sugar, Byproducts of sugar industry	NIL
			<ul style="list-style-type: none"> • Manufacture of Jaggary, Antimicrobial testing of Jaggary Practicals –As per syllabus	NIL

S.D. Shirke
Dr. Mrs. S. D. Shirke



S.D. Shirke
(Head of Dept.)
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Vivekanand College, Kolhapur (Autonomous)
Syllabus Completion Report

Academic Year – 2023-24

Sem-III, Sem-V

Department - Chemistry

Name of the Teacher – **Dr. A. S. Kumbhar**

Name of the Class	Units Allotted	Units Completed	Remark
B.Sc.II	▪ Kinetic Theory of Gases	▪ Kinetic Theory of Gases	Completed
B.Sc.III	▪ IR Spectroscopy ▪ EMF	▪ IR Spectroscopy ▪ EMF	Completed

Dr. A. S. Kumbhar



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Syllabus Completion Report

Academic Year – 2023-24

Sem-III, Sem-VI

Department - Chemistry

Name of the Teacher – **Dr. A. S. Kumbhar**

Name of the Class	Units Allotted	Units Completed	Remark
B.Sc.II	<ul style="list-style-type: none">▪ Amino Acids and Proteins▪ Carbohydrates	<ul style="list-style-type: none">▪ Amines and Diazonium Salts▪ Carbohydrates	Completed
B.Sc.III	<ul style="list-style-type: none">▪ Reagents▪ Nuclear Chemistry	<ul style="list-style-type: none">▪ Reagents▪ Nuclear Chemistry	Completed

Dr. A. S. Kumbhar



Dr. Mrs. S. D. Shirke

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Syllabus Completion Report

Academic Year - 2023-24

Sem-I, Sem-III, Sem-V

Department- Chemistry

Name of the Teacher – **Mr. S. S. Kadam**

Name of the Class	Units Allotted	Units Completed	Remark
B.Sc.I (Major)	<ul style="list-style-type: none">Fundamentals of Organic ChemistryChemistry of aromatic compounds	<ul style="list-style-type: none">Fundamentals of Organic ChemistryChemistry of aromatic compounds	Completed
B.Sc.I (Minor)	<ul style="list-style-type: none">Fundamentals of Organic ChemistryChemistry of aromatic compounds	<ul style="list-style-type: none">Fundamentals of Organic ChemistryChemistry of aromatic compounds	Completed
B.Sc.I (Open Elective)	<ul style="list-style-type: none">Fundamentals of Organic ChemistryChemistry of aliphatic and aromatic compounds	<ul style="list-style-type: none">Fundamentals of Organic ChemistryChemistry of aliphatic and aromatic compounds	Completed
B.Sc.III	<ul style="list-style-type: none">Introduction to SpectroscopyUltra-Violet (UV) SpectroscopyCombined problems based on NMR,IR,UV	<ul style="list-style-type: none">Introduction to SpectroscopyUltra-Violet (UV) SpectroscopyCombined problems based on NMR,IR,UV	Completed
M.Sc.I	<ul style="list-style-type: none">Elimination Reaction & Study of Following reaction	<ul style="list-style-type: none">Elimination Reaction & Study of Following reaction	Completed

Mr. S. S. Kadam



Dr. Mrs. S. D. Shirke

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Syllabus Completion Report

Academic Year - 2023-24

Sem-II, Sem-IV, Sem-VI

Department- Chemistry

Name of the Teacher – **Mr. S. S. Kadam**

Name of the Class	Units Allotted	Units Completed	Remark
B.Sc.I (major)	<ul style="list-style-type: none">▪ Chemical Kinetics▪ Properties of liquids	<ul style="list-style-type: none">▪ Chemical Kinetics▪ Properties of liquids	Completed
B.Sc.I (minor)	<ul style="list-style-type: none">▪ Chemical Kinetics▪ Properties of liquids	<ul style="list-style-type: none">▪ Chemical Kinetics▪ Properties of liquids	Completed
B.Sc.II ⁺	<ul style="list-style-type: none">▪ Carboxylic acids and their derivatives▪ Transition Elements	<ul style="list-style-type: none">▪ Carboxylic acids and their derivatives▪ Transition Elements	Completed
B.Sc.III	<ul style="list-style-type: none">▪ Name reactions▪ Electrophilic addition to $>C=C<$ and $-C\equiv C-$ bonds	<ul style="list-style-type: none">▪ Name reactions▪ Electrophilic addition to $>C=C<$ and $-C\equiv C-$ bonds	Completed
M.Sc.I	<ul style="list-style-type: none">▪ Reduction & Protection of functional group	<ul style="list-style-type: none">▪ Reduction & Protection of functional group	Completed



Mr. S. S. Kadam



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Syllabus Completion Report

Academic Year – 2023-24

Sem-II, Sem-IV, Sem-VI

Department - Chemistry

Name of the Teacher – **Dr. S. S. Ankushrao**

Name of the Class	Units Allotted	Units Completed	Remark
B.Sc.I (Major)	▪ Thermodynamics	▪ Thermodynamics	Completed
B.Sc.I (Minor)	▪ Thermodynamics	▪ Thermodynamics	Completed
B.Sc.I (OE)	▪ Thermodynamics	▪ Thermodynamics	Completed
B.Sc.I SEC	▪ MSDS & Lab Safety Pictograms	▪ MSDS & Lab Safety Pictograms	Completed
B.Sc.II	▪ Crystal Field Theory	▪ Crystal Field Theory	Completed
B.Sc.III	▪ Corrosion and Passivity ▪ Introduction to Chemical Industry	▪ Corrosion and Passivity ▪ Introduction to Chemical Industry	Completed
M.Sc.I	▪ Thermal Analysis	▪ Thermal Analysis	Completed



Dr. S. S. Ankushrao



Dr. Mrs. S. D. Shirke
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Vivekanand College, Kolhapur (Empowered Autonomous)

Annual Teaching Plan

Academic Year: 2023-24

Semesters: M.Sc. II, Sem-IV

Department: Chemistry

Subject: Inorganic Chemistry

Course Title: CP 1141 D: Instrumental Techniques

Name of the Teacher: Dr. Mrs. Sarita Dattajirao Shinde

Month: December			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Nuclear Quadrapole Resonance (NQR) and X-Ray Fluorescence (XRF) Spectroscopy	A] Nuclear Quadra pole Resonance Spectroscopy [NQR]: <ul style="list-style-type: none"> • Basic concepts of NQR; • Nuclear electric quadruple moment, • Electric field gradient, • Energy levels and NQR frequencies, Effect of magnetic field on spectra.
4	-	4		
Month: January			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Nuclear Quadrapole Resonance (NQR) and X-Ray Fluorescence (XRF) Spectroscopy	<ul style="list-style-type: none"> • Factors affecting the resonance signal; line shape and position of resonance signal, • Relationship between electric field gradient and molecular structure, • Interpretation of NQR data
4	-	4		
Month: February			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Nuclear Quadrapole Resonance (NQR) and X-Ray Fluorescence (XRF) Spectroscopy	<ul style="list-style-type: none"> • B] X-ray Fluorescence Spectrometry (XRF): Introduction and basic theory, Instrumentation; • dispersive systems and detectors, • Matrix effects,
4	-	4		
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Nuclear Quadrapole Resonance (NQR) and X-Ray Fluorescence (XRF) Spectroscopy	<ul style="list-style-type: none"> • XRF with synchrotron radiation, Spectral analysis, Analytical information, • Elementary theory of recoil free emission and resonant absorption of gamma rays, • Applications.
3	-	3		
Month : April-May			Module/Unit:	Sub-units planned
Lectures	Practicals	Total		<ul style="list-style-type: none"> • Practical and theory Examination
-	-	-		

Shinde

Dr. S. D. Shinde



Shirke

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Vivekanand College, Kolhapur (Empowered Autonomous)

Syllabus Completion Report

Academic Year – 2023-24

Sem-I, Sem-III, Sem-V

Department- Chemistry

Name of the Teacher – **Dr. S. D. Shinde**

Name of the Class	Units Allotted	Units Completed	Remark
B.Sc.I (Maj+Min+OE)	<ul style="list-style-type: none">Atomic Structure and Periodicity of ElementsAcids and Basesp-Block Elements (Group13, 14, 15)	<ul style="list-style-type: none">Atomic Structure and Periodicity of ElementsAcids and Basesp-Block Elements (Group13, 14, 15)	Completed
B.Sc.II	-	-	-
B.Sc.III	<ul style="list-style-type: none">Metals, Semiconductors, Superconductors and NanomaterialsAcids, Bases and Non aqueous Solvents	<ul style="list-style-type: none">Metals, Semiconductors, Superconductors and NanomaterialsAcids, Bases and Non aqueous Solvents	Completed
M.Sc.II	<ul style="list-style-type: none">Metal Compounds in MedicineIntroduction to Nanotechnology and Nano Chemistry	<ul style="list-style-type: none">Metal Compounds in MedicineIntroduction to Nanotechnology and Nano Chemistry	Completed


Dr. S. D. Shinde




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Syllabus Completion Report

Academic Year – 2023-24

Sem-II, Sem-IV, Sem-VI

Department- Chemistry

Name of the Teacher – **Dr. S. D. Shinde**

Name of the Class	Units Allotted	Units Completed	Remark
B.Sc.I	-	-	-
B.Sc.II	<ul style="list-style-type: none">Valence Bond Theory [VBT]Crystal Field Theory [CFT]	<ul style="list-style-type: none">Valence Bond Theory [VBT]Crystal Field Theory [CFT]	Completed
B.Sc.III	<ul style="list-style-type: none">Coordination ChemistryChemistry of f-Block Elements	<ul style="list-style-type: none">Coordination ChemistryChemistry of f-Block Elements	Completed
M.Sc.II	<ul style="list-style-type: none">Nuclear Quadrapole Resonance (NQR) and X-Ray Fluorescence (XRF) SpectroscopyMetal Complexes in Medicine	<ul style="list-style-type: none">Nuclear Quadrapole Resonance (NQR) and X-Ray Fluorescence (XRF) SpectroscopyMetal Complexes in Medicine	Completed



Dr. S. D. Shinde



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 Syllabus Completion Report for Academic Year - 2023-24

Department- Chemistry, Sem. I, III

Name of the Teacher – **Dr. A. A. Patravale**

Class	Unit Allotted	Subject Code	Units Completed	Remark
M.Sc. I	Reaction mechanism	DSC14CHE22	Introduction of reaction mechanism and reactivity of carbocations and carbanions, free radicals, arynes, carbenes, N-heterocyclic carbene, nitrenes	Nil
M.Sc. I	Reaction mechanism Aliphatic Nucleophilic substitutions	DSC14CHE22	a) reactivity of nitrenes and Nitrogen, sulphur and phosphorus ylides. b) SN2 and SN1, SNi reactions with respects to mechanism and stereochemistry. Nucleophilic substitutions at an allylic, aliphatic trigonal, benzylic, aryl and vinylic carbons.c) Reactivity effect of substrate structure, effect of attacking nucleophiles, leaving groups and reaction medium.	Nil
M.Sc. II	Drug Designing	DSC14CHE31	Development of new drugs, procedures followed in drug design. History and development of Quantitative structure activity relationship (QSAR). Concepts of drug receptors, Relation of chemical structure and chemical activity. Antibiotics Introduction, β -lactam Antibiotics, cephalosporin Antibiotics, SAR of β -lactam and cephalosporin, Structural features of tetracycline & macrocyclic antibiotics (no synthesis).	Nil
M.Sc. II	Study of the Following types of drugs	DSC14CHE31	a) Antimalarials b) Analgesic & Antipyretics c) Anti- inflammatory d) Antitubercular & antileprotic e) Anaesthetics f)Antihistamines g) Tranquilizer h) Anti AIDS, Cardiovascular: j) Anti-neoplastic drugs,	Nil
M.Sc. II	Clinical Analysis	Paper: X	Biological significance, analysis of assay of enzyme (pesine, monoamine, oxidase, tyrosinase,). Composition and detection of some abnormal level of certain constituent leading to diagnosis of diseases, Sample collection and preservation of body fluid. Analytical * method of detection of body fluid, Estimation of Glucose, Cholesterol, Urea, uric acid, Creatinine, Calcium, Phosphate, Sodium, Potassium, Chloride	Nil
M.Sc. I	Organic chemistry Practicals	DSC14CHE29	a) Two step preparation and spectral problems b) Analytical practical	Nil

(Signature)

Dr. A. A. Patravale

(Signature)

Dr. Mrs. S. D. Shirke

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Vivekanand College, Kolhapur (Empowered Autonomous)
Syllabus Completion Report for Academic Year - 2023-24

Department- Chemistry. Sem. II, IV

Name of the Teacher -- Dr. A. A. Patravale

Class	Unit Allotted	Subject Code	Units Completed	Remark
M.Sc. II	Benzenoid and Non benzenoid aromatic Compounds	DSC14CHE41	Polycyclic aromatic compounds: Synthesis, reactions, Linear and non-linear ortho fused polynuclear hydrocarbons.	Nil
M.Sc. I	Synthesis and applications of perfumery	DSC14CHE42	Introduction to perfumery compounds and its commercial process, essential oil, method of preparation and important, synthesis of 2-Phenylethanol, Yara-yara, vanillin. Preparation and important, synthesis of other food flavours, synthetic musk, Jasmine, ionones, beta-ionones from citral, phenyl acetic acid and its ester, benzyl acetate.	Nil
M.Sc. II	Analysis of Soil and Fertilizer	Paper XVI(A) Elective	Introduction, Method of Soil analysis, Soil fertility, determination of inorganic constitution of plant, Classification of fertilizer, clinical Analysis as measure of soil fertility, fertilizer and its detection method.	Nil
M.Sc. II	Dyes and Intermediates	DSC14CHE42	Classification and synthesis of important dye intermediates by using nitration, sulphonation, diazotization reactions. Commercial processes for azo-dyes, reactive dyes, optical brighteners, thermal sensitive dyes, dispersed dyes and reactive dyes.	Nil
M.Sc. I	Oxidation Hydroboration and enamines	DSC14CHE22	Oxidation of alcohol to aldehyde, ketone or acid: Jones reagent, Swern oxidation, Collins reagent, Fetizon's reagent, PCC, PDC, IBX, Activated MnO ₂ , Chromyl chloride (Etard reaction), TEMPO, NMO, Moffatt oxidation. b) Mechanism and Synthetic Application. Formation and reactivity of enamines	Nil
M.Sc. I	Organic chemistry Practicals	DSC14CHE29	a) Binary Mixture Analysis b) Three step preparation	Nil

Dr. A. A. Patravale

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S. Shirke

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Vivekanand College, Kolhapur (Empowered Autonomous)
Syllabus Completion Report for Academic Year - 2023-24

Sem. I, III

Department- Chemistry

Name of the Teacher – Dr. D. S. Gaikwad

Class	Unit Allotted	Subject Code	Units Completed	Remark
M.Sc. I	Organometallic chemistry	DSE14CHE11	Applications of Gilman reagent, lithium, cobalt, Zinc, Mercury, Titanium and Aluminium in organic synthesis.	Nil
M.Sc. II	Applications of following metal in organic synthesis	CC-1145C	Pd, Mg, Rh, Ti, Si, use of Cu in Click chemistry	Nil
M.Sc. II	Mass Spectrometry	CC-1144C	Introduction, ion production- EI, CI, FD and FAB, factors affecting fragmentation, ion analysis, ion abundance; Mass spectral fragmentation of aldehydes, ketones, aromatic hydrocarbons, carboxylic acids, ethers, alcohols, amines, nitro, cyano compounds; molecular ion peak, metastable ion peak; High resolution mass spectrometry (HRMS), MALDI, TOF; Problems associated with Mass Spectroscopy.	Nil
M.Sc. II	Carbon-13 NMR Spectroscopy	CC-1144C	a) General introduction to ¹³ C NMR spectroscopy; chemical shift values [aliphatic, olefinic, alkyne, aromatic, heteroaromatic and carbonyl compounds]; proton coupled, proton decoupled ¹³ C NMR spectra, advanced ¹³ C NMR techniques (NOE, DEPT, Off resonance, HETCOR). Heteronuclear coupling, problems associated with ¹³ C NMR. b) Structural problems based on combined spectroscopic techniques (including reaction sequences)	Nil
M.Sc. II	Hyphenated Techniques	CC-2201C	Introduction to hyphenated techniques: Introduction and principal of UV, IR, NMR, Mass, ¹³ C NMR, HPLC, GSMS, LCMS Techniques.	Nil
M.Sc. II	Organic chemistry Practicals	CPP-1145C & CPP1146C	a) Ternary Mixture analysis b) Two step preparation and spectral problems	Nil

D. S. Gaikwad

Dr. D. S. Gaikwad



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Vivekanand College, Kolhapur (Empowered Autonomous)
Syllabus Completion Report for Academic Year - 2023-24
 Sem. II, IV

Department- Chemistry

Name of the Teacher – **Dr. D. S. Gaikwad**

Class	Unit Allotted	Subject Code	Units Completed	Remark
B.Sc. III	Iron and Steel	DSE-1002F2	Reduction, Roasting, Smelting and Leaching, Extraction of iron by Blast furnace. Steel: Definition and types, Heat treatment on steel, Conversion of Cast iron into steel by Bessemer process and LD process. Heat treatment on steel.	Nil
M.Sc. I	Study of following reactions and Alkylation and Acylation	DSC14CHE21	a) Mechanism of condensation reaction involving enolates, Dieckmann, Wagner-Meerwein, Robinson annulation, Reimer-Tieman, Chichibabin, Pummerer, Payne rearrangement, Simon-Smith, Ulmann, Mc-Murry, Dakin. b) Introduction, Types of alkylation and alkylating agents: C-Alkylation and Acylation of active methylene compounds and their applications.	Nil
M.Sc. II	Analysis of Paint, Pigment and Petroleum products	CC-2207D	Composition of paint, Preliminary inspection of sample, test on the total coating, separation and estimation of pigments, Binder and thinner of latex paints. Flash points, Practical applications and examples in analytical chemistry and research. Introduction to petroleum products, quality control, Specific gravity, Viscosity, cloud point, pour point, flash point, vapour pressure. Calorific value by bomb calorimeter.	Nil
M.Sc. II	Stereochemistry: Allenes and spiranes	CC-1150D	Stereochemistry of compounds containing no chiral carbon atoms and diastereoisomerism (Geometrical isomerism). a) Stereochemistry of Allenes, Spiranes and Biphenyls. Assignment of configuration b) Configuration of diastereomers (Geometrical isomerism) based on physical and chemical methods.	Nil
M.Sc. II	Alkaloids	CC-1151D	Introduction, occurrence, isolation and functions of alkaloids, Structure, stereochemistry and synthesis of the following: Morphine, Reserpine, Atropine and Conin.	Nil
M.Sc. II	Vitamins	CC-1151D	Introduction of Vitamins, Classification and nomenclature of Vitamins, Sources of vitamins and their deficiency, Synthesis, structure and biological functions of vitamin B1, B2, B5, B6 and Biotin (Vitamin H).	Nil
M.Sc. II	Organic chemistry Practicals	CPP-1154D & CPP1155D	a) Estimation of Nitrogen and Sulphur b) Three step preparation	Nil

Dr. D. S. Gaikwad

Dr. D. S. Gaikwad



Dr. Mrs. S. D. Shirke

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Syllabus Completion Report

Academic Year - 2023-24

Sem-I, Sem-III,

Department - Chemistry

Name of the Teacher — Mr. A.T. Mane

Name of the Class	Units Allotted	Units Completed	Remark
M.Sc.I	Unit I :a) Chemistry of transition elements b) Bioinorganic Chemistry Unit II : a)Non-aqueous solvent b) Nuclear and radiochemistry Unit III : Electronic, Electric and Optical behaviour of Inorganic materials	Unit I :a) Chemistry of transition elements b) Bioinorganic Chemistry Unit II : a) Non-aqueous solvent b) Nuclear and radiochemistry Unit III : Electronic, Electric and Optical behaviour of Inorganic materials	Completed
M.Sc.II (Inorganic chemistry)	Unit I :Photochemistry of metal complexes Unit III : Magnetic properties of Transition metal complexes.	Unit I :Photochemistry of metal complexes Unit III : Magnetic properties of Transition metal complexes.	Completed



Mr. A. T. Mane



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Syllabus Completion Report
Academic Year - 2023-24
Sem-II, Sem-IV,
Department - Chemistry
Name of the Teacher — Mr. A.T. Mane

Name of the Class	Units Allotted	Units Completed	Remark
M.Sc.I	Unit I: Chemistry of non-transition elements	Unit I: Chemistry of non-transition elements	Completed
M.Sc.II (Inorganic chemistry)	Unit I: Mossbauer spectroscopy Unit II: Electron Spin resonance Spectroscopy Unit III: Coordination Polymer Unit IV: Application of Coordination Compounds	Unit I: Mossbauer spectroscopy Unit II: Electron Spin resonance Spectroscopy Unit III: Coordination Polymer Unit IV: Application of Coordination Compounds	Completed



Mr. A. T. Mane



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Syllabus Completion Report

Academic Year - 2023-24 M. Sc. Part-I & II (Sem- I & III)

Department - Chemistry

Name of the teacher: **Dr. S. D. Kharade**

Name of the Class	Units Allotted	Units Completed	Remark
M. Sc. I Sem I	Chemistry of Transition metal carbonyls and related compounds	Chemistry of Transition metal carbonyls and related compounds	Completed
M. Sc. II Sem III (Inorganic Chemistry)	1. Organo Transition Metal Chemistry 2. Transition Metal π -Complexes 3. NMR and X-ray Photoelectron Spectroscopy (XPS)	1. Organo Transition Metal Chemistry 2. Transition Metal π -Complexes 3. NMR and X-ray Photoelectron Spectroscopy (XPS)	Completed Completed Completed
M. Sc. II Sem III (Analytical Chemistry)	Advanced Instrumentation Techniques-A	Advanced Instrumentation Techniques-A	Completed



Dr. S. D. Kharade



Head

Department Of Chemistry

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Vivekanand College, Kolhapur (Empowered Autonomous)
Syllabus Completion Report

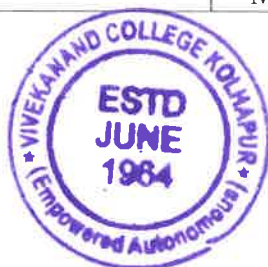
Academic Year - 2023-24 M. Sc. Part-I & II (Sem- II & IV)

Department - Chemistry

Name of the Teacher: Dr. S. D. Kharade

Name of the Class	Units Allotted	Units Completed	Remark
M. Sc. I Sem-II	1. A) Stereochemistry and bonding in main group compounds B) Metal - ligand equilibria in solution	1. A) Stereochemistry and bonding in main group compounds B) Metal - ligand equilibria in solution	Completed
M. Sc. II Sem IV (Inorganic Chemistry)	1. Inorganic Reaction Mechanism 2. Reaction Mechanism of Transition Metal complexes 3. Air Pollution and Control Methods 4. Water Pollution and Monitoring Control Methods	1. Inorganic Reaction Mechanism 2. Reaction Mechanism of Transition Metal complexes 3. Air Pollution and Control Methods 4. Water Pollution and Monitoring Control Methods	Completed Completed Completed Completed

Dr. S. D. Kharade



Head

Department Of Chemistry

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Syllabus Completion Report

Academic Year - 2023-24

Sem- II, Sem- IV

Department - Chemistry

Name of the teacher: Miss. S.N. Inamdar

Name of the class	Units Allotted	Units Completed	Remark
M.Sc.II (Inorganic Chemistry)	<ul style="list-style-type: none">Advanced Synthetic Methods of Inorganic Nanomaterials	<ul style="list-style-type: none">Chemical kinetics	Completed
	<ul style="list-style-type: none">Nanotoxicity and Biosafety	<ul style="list-style-type: none">Study and applications of lanthanides and actinides	Completed
M.Sc.II (Analytical Chemistry)	<ul style="list-style-type: none">Analysis of cosmetics products	<ul style="list-style-type: none">Spectroscopic techniques	Completed
M.Sc. I (Elective Inorganic chemistry)	<ul style="list-style-type: none">Oxygen Transport and Storage	<ul style="list-style-type: none">Oxygen transport and storageRaman and IR spectroscopy	Completed



Miss. S.N. Inamdar



Dr. S. D. Shrike

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Academic Year - 2023-24
Sem- II, Sem- IV
Department - Chemistry
Name of the teacher: Miss. P. A. Gholap

Name of the class	Units Allotted	Units Completed	Remark
M.Sc. I (Physical chemistry)	<ul style="list-style-type: none">• Thermodynamic• Elecytrochemistry	<ul style="list-style-type: none">• Thermodynamic• Elecytrochemistry	Completed Completed
M.Sc. I (Analytical chemistry)	<ul style="list-style-type: none">• Advanced Liquid Chromatographic Techniques	<ul style="list-style-type: none">• Advanced Liquid Chromatographic Techniques	Completed
M.Sc. II (Analytical chemistry)	<ul style="list-style-type: none">• Analysis of Commercial materials	<ul style="list-style-type: none">• Analysis of Commercial materials	Completed
M.Sc. II (Inorganic chemistry)	<ul style="list-style-type: none">• X-ray Diffraction Techniques	<ul style="list-style-type: none">• X-ray Diffraction Techniques	Completed



P.A. Gholap

Miss. P. A. Gholap

S.D. Shrike

Dr. Mrs. S. D. Shrike
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Department of Chemistry

Academic Year - 2023-24

M. Sc. Part-I & II (Sem- II & IV)

Syllabus Completion Report

Name of the Teacher: Ms. V. S. Rajmane

Name of the Class	Units Allotted	Units Completed	Remark
M. Sc. I Sem I	UNIT-III: Chromatographic Techniques.	UNIT-III: Chromatographic Techniques.	Completed
M. Sc. I Sem I	UNIT-I: Study of following chromatographic Techniques	UNIT-I: Study of following chromatographic Techniques	Completed
M. Sc. II Sem III (Analytical Chemistry)	UNIT-IV: X-ray spectroscopy UNIT-III: Ion Chromatography	UNIT-IV: X-ray spectroscopy UNIT-III: Ion Chromatography	Completed Completed
M. Sc. II Sem III (Organic Chemistry)	UNIT – IV A) Kinetic and thermodynamic control of reactions	UNIT – IV A) Kinetic and thermodynamic control of reactions	Completed

Rajmane
Ms. V. S. Rajmane



S.P. Dik
Head

Department of Chemistry
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Department of Chemistry

Academic Year - 2023-24

M. Sc. Part-I & II (Sem- I & III)

Syllabus Completion Report

Name of the Teacher: Ms. V. S. Rajmane

Name of the Class	Units Allotted	Units Completed	Remark
M. Sc. I Sem I	UNIT III: Electroanalytical Techniques	UNIT III: Electroanalytical Techniques	Completed
M. Sc. I Sem I	Unit IV: Atomic Absorption & Inductively Coupled Plasma Spectroscopy	Unit IV: Atomic Absorption & Inductively Coupled Plasma Spectroscopy	Completed
M. Sc. II Sem III (Analytical Chemistry)	Unit IV: A) Ion selective electrodes Unit III: Voltametric Techniques	Unit IV: A) Ion selective electrodes Unit III: Voltametric Techniques	Completed Completed
M. Sc. II Sem III (Organic Chemistry)	Unit IV: (A) Five- Study of five and six-membered heterocycles containing one membered heterocycles	Unit IV: (A) Five- Study of five and six-membered heterocycles containing one membered heterocycles	Completed


Ms. V. S. Rajmane





Head

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Department of Chemistry

Academic Year - 2024-25

M. Sc. Part-I & II (Sem- I & III)

Syllabus Completion Report

Name of the Teacher: Ms. V. S. Rajmane

Name of the Class	Units Allotted	Units Completed	Remark
M. Sc. I Sem I	UNIT III: Electroanalytical Techniques	UNIT III: Electroanalytical Techniques	Completed
M. Sc. II Sem III (Analytical Chemistry)	Unit IV: A) Ion selective electrodes Unit III: Advanced Analytical Techniques-B	Unit IV: A) Ion selective electrodes Unit III: Advanced Analytical Techniques-B	Completed Completed
M. Sc. II Sem III (Organic Chemistry)	Unit IV: (A) Five- Study of five and six-membered heterocycles containing one membered heterocycles	Unit IV: (A) Five- Study of five and six-membered heterocycles containing one membered heterocycles	Completed

Rajmane
Ms. V.S. Rajmane



V. S. Rajmane

Head

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