



**FACULTY OF SCIENCE**  
**DEPARTMENT OF CHEMISTRY**

**COURSE: B.Sc.**

**SEMESTER: IV**

**SUBJECT NAME: Chemistry-VII**

**SUBJECT CODE: 4SC04CHC1**

**Teaching & Evaluation Scheme:-**

Teaching hours/week				Credit	Evaluation Scheme/semester							
Th	Tu	Pr	Total		Theory				Practical			Total Marks
					Sessional Exam		University Exam		Internal		University	
					Marks	Hrs	Marks	Hrs	Pr	TW		
3	0	0	3	3	30	1.5	70	3	--	--	--	100

**Objectives:-**

- To learn about organic chemistry and their reaction mechanism.
- To understand name rearrangement actions

**Prerequisites:-**

- Before learning organic chemistry, student should aware about basic principles and theories of organic chemistry, proteins, carbohydrate, dyes and other UG level chemistry.

**Course outline:-**

Sr. No.	Course Contents
1	<b>Name reactions and Rearrangement:</b> Ullman reaction, Meerwein-Ponndorf-Verley reduction, Knorr pyrrole reaction, Skraup synthesis, Ene reaction, Neber rearrangement, Stevens rearrangement. <b>Chemical Reagents:</b> Ozone, $\text{SeO}_3$ , Nitric acid, $\text{LiAlH}_4$ , Silane, Zinc acetate, $\text{KMnO}_4$ , $\text{SnCl}_2$



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<b>2</b>	<b>Terpenoids and Carotenoids</b> <b>Terpinoids:</b> Introduction of terpinoids, isoprene rule, classification of terpinoids, constitution and synthesis of citral and methol. <b>Carotenoids:</b> Introduction, geometrical isomerism Structure determination and synthesis of b-carotene and vitamin-A
<b>3</b>	<b>Carbohydrates:</b> Introduction, occurrence and classification of carbohydrates, constitution of glucose, osazone formation, reactions of glucose and fructose, mutarotation, cyclic structures – pyranose and furanose forms (determination of ring-size excluded), epimerization, chain- lengthening (Kiliani –Fischer method) and chainshortening (Ruff's method) in aldoses. Amino acids.
<b>4</b>	<b>Synthetic drugs and dyes</b> <b>Drugs</b> Introduction, Classification Synthesis and uses of sulpha triazole ( cibazole) , phenacetin, paludrine, chloramphenicol, veronal <b>Dyes</b> Introduction, Classification Synthesis and uses of methylorange, Diamomblack -f malachite green, Indigotin, Congored,

### **Learning Outcomes:-**

After the successful completion of the course, students will be able to

- Understand organic reactions.
- Determine reaction mechanism, carbohydrate, dyes, drugs etc.

### **Books Recommended:-**

1. 'March's Advanced Organic Chemistry Reactions, Mechanism and Structure', **Michael B Smith and Jerry March, Wiley.**
2. 'Reaction Mechanisms and Reagents in Organic Chemistry', **Gurudeep R. Chatwal.**
3. 'Organic chemistry, reaction mechanism', **V.K. Ahluvalia, R.K. Parashar.**

### **E-Resources:**

1. <http://www.organic-chemistry.org/>
2. [http://www.organicdivision.org/?nd=p\\_organic\\_web\\_links](http://www.organicdivision.org/?nd=p_organic_web_links)
3. <http://www.masterorganicchemistry.com/resource-guide/>
4. <http://orgchem.iisc.ernet.in/chemlink.html>
5. [http://www.mpcfaculty.net/ron\\_rinehart/organic.htm](http://www.mpcfaculty.net/ron_rinehart/organic.htm)
6. <http://web.usca.edu/chemistry/NewStudentInfo/helpful-websites-for-studying-organic-chemistry.dot>



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7. <http://pubs.rsc.org/en/journals/journalissues/oc#!recentarticles&all>
8. <http://www.chem.ox.ac.uk/vrchemistry/iom/#>
9. <http://ocw.mit.edu/courses/#chemistry>
10. <http://www.stolaf.edu/depts/chemistry/courses/toolkits/247/>
11. <http://iverson.cm.utexas.edu/courses/310M/MainPagesSp06/GoldenRules.html>
12. [http://www.abdn.ac.uk/curly-arrows/index.html%20\(click%20the%20Tutorials%20button\)](http://www.abdn.ac.uk/curly-arrows/index.html%20(click%20the%20Tutorials%20button))



**C. U. SHAH UNIVERSITY**

## **FACULTY OF SCIENCE**

### **DEPARTMENT OF CHEMISTRY**

**COURSE: B.Sc.**

**SEMESTER: IV**

**SUBJECT NAME: Chemistry-VIII**

**SUBJECTCODE: 4SC04CHC2**

#### **Teaching & Evaluation Scheme:-**

Teaching hours/week				Credit	Evaluation Scheme/semester							
Th	Tu	Pr	Total		Theory				Practical			Total Marks
					Sessional Exam		University Exam		Internal		University	
					Marks	Hrs	Marks	Hrs	Pr	TW		
3	0	0	3	3	30	1.5	70	3	--	--	--	100

#### **Objectives:-**

- To understand how structure and bonding influence the physical properties and reactivity of inorganic molecules.
- To learn several theories of bonding, the advantages and disadvantages of each theory and coordination chemistry.
- History, occurrence and preparation of hydrogen.
- To gain an appreciation for how inorganic chemistry influences your everyday life.

#### **Prerequisites:-**

- Before studying Inorganic chemistry, all students have basic knowledge of inorganic and organic compounds, molecular structure, Molecular orbital theories and knowledge related to UG level chemistry.



## **Course outline:-**

<b>Sr. No.</b>	<b>Course Contents</b>
<b>1</b>	<b>Coordination compounds:</b> General concepts and brief explanation of coordination compounds, classification of ligands based on denticity, terminology in coordination compounds and IUPAC nomenclature, isomerism in coordination compounds: structural isomerism- ionization, linkage and coordination isomerism, stereoisomerism-geometrical and optical isomerism, Warner's theory of coordination, electronic interpretation of coordination, EAN rule, Introduction of Valence bond theory (VBT), Valence bond theory in octahedral, tetrahedral and square planar complexes.
<b>2</b>	<b>Hydrogen</b> History, occurrence and preparation of hydrogen by 1. Bosch process 2. Liquefaction process 3. H from hydrocarbon 4. Electronic process 5. Lane's process. Properties of H and position of H in Periodic Table, Nascent hydrogen, occluded hydrogen, atomic hydrogen, ortho and para hydrogen. Explanation for isotopes and isobars, isotopes of hydrogen such as deuterium and tritium, heavy water, physical and chemical properties of hydrogen, deuterium, H <sub>2</sub> O & D <sub>2</sub> O. Biological behavior, importance and compounds of D <sub>2</sub> O. Ortho and para deuterium and Tritium. Preparation properties and structure of H <sub>2</sub> O <sub>2</sub> .
<b>3</b>	<b>Noble gases :</b> Occurrence & uses, rationalization of inertness of noble gases, Clathrates; preparation and properties of XeF <sub>2</sub> and XeF <sub>4</sub> , XeF <sub>6</sub> ; Nature of bonding in noble gas compounds (Valence bond treatment and MO treatment for XeF <sub>2</sub> ). Molecular shapes of noble gas compounds (VSEPR theory).
<b>4</b>	<b>Organic Metallic Compounds:</b> Introduction. Classification based on nature of M-C Bond. Preparation, Properties and uses of Organo Lithium. Preparation of Organo Beryllium, OrganoAluminium and Zaise Salts. Structure of 1. Tri Methyl aluminium ( Dimer ) 2. Zaise Salt [ PtCl <sub>2</sub> -C <sub>2</sub> H <sub>4</sub> 3. Ferrocene.



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### **Learning Outcomes:-**

After the successful completion of the course, students will be able to

- Learn basic concepts of quantum chemistry and its applications.
- Understanding of magnetic properties, stereo chemical applications and other theoretical concepts.
- They can get idea of Mössbauer spectroscopy and its experimental techniques.
- Aware about general properties and uses of organic and inorganic reagents in inorganic chemistry.

### **Books Recommended:-**

1. 'Introduction to Quantum Chemistry', **A K Chandra**, *McGraw-Hill*.
2. 'Advanced Inorganic Chemistry', **Cotton Wilkinson**, *W S E Wiley*.
3. 'Vogel's Text book of Quantitative Inorganic Analysis', **Vogel**, *ELBS Press*.
4. 'Elements of Magnetochemistry', **Shyamal&Datta**, *East- West Press*.
5. 'Quantum Chemistry', **Ira N. Levine**, *Prentice-Hall International*.
6. 'Textbook of Inorganic Chemistry', **A.Singh&R.Singh**, *Campus*.
7. 'Physical Methods in Chemistry', **R.S.Drago**, **Saunders Colelge**.
8. 'Introduction to Magnetochemistry', **Alan Earnshaw**, *Academic Press*.

### **E-Resources:-**

1. <http://pubs.acs.org/journal/inocaj>
2. [http://www.chemlin.de/chemistry/inorganic\\_chemistry.htm](http://www.chemlin.de/chemistry/inorganic_chemistry.htm)
3. <http://www.anorg.chem.uu.nl/home/index.html>
4. <http://www.springer.com/chemistry/inorganic+chemistry/journal/11502>
5. <http://libguides.stanford.edu/content.php?pid=149720&sid=1271547>
6. <http://www.science.uwaterloo.ca/~cchieh/cact/applychem/inorganic.html>
7. <http://pubs.rsc.org/en/journals/journalissues/ic#!recentarticles&all>
8. <http://www.chem.umass.edu/~samel/orginorgsites.html>
9. <http://www.sciencedirect.com/science/book/9780123851109>
10. [http://www.chemistryviews.org/details/event/1442119/2nd\\_EuCheMS\\_Inorganic](http://www.chemistryviews.org/details/event/1442119/2nd_EuCheMS_Inorganic)
11. <http://store.elsevier.com/Comprehensive-Inorganic-Chemistry-II/isbn-9780080977744/>
12. <http://chemistry.about.com/cs/generalchemistry/a/aa072103a.htm>
13. [http://www.ox.ac.uk/admissions/postgraduate\\_courses/course\\_guide/chemistry\\_1.html](http://www.ox.ac.uk/admissions/postgraduate_courses/course_guide/chemistry_1.html)
14. [http://www.researchgate.net/journal/0260-3594\\_Comments\\_on\\_Inorganic\\_Chemistry](http://www.researchgate.net/journal/0260-3594_Comments_on_Inorganic_Chemistry)
15. <http://www.cecarn.org/workshop-671>



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## **FACULTY OF SCIENCE**

### **DEPARTMENT OF CHEMISTRY**

**COURSE: B.Sc.**

**SEMESTER: IV**

**SUBJECT NAME: Chemistry-IX**

**SUBJECT CODE: 4SC04CHE1**

#### **Teaching & Evaluation Scheme:-**

Teaching hours/week				Credit	Evaluation Scheme/semester							
Th	Tu	Pr	Total		Theory				Practical			Total Marks
					Sessional Exam		University Exam		Internal		University	
					Marks	Hrs	Marks	Hrs	Pr	TW		
3	0	0	3	3	30	1.5	70	3	--	--	--	100

#### **Objectives:-**

- To understand concept and theories of basic physical chemistry.
- To get idea about chemical reaction, equilibrium and electrode potential.
- To understand applications of physical chemistry in daily life.
- To generate interest and curiosity about physical chemistry.

#### **Prerequisites:-**

- Before learning Physical chemistry, student should aware about basic principles and theories of physical chemistry, thermodynamics, electrode potential, chemical reactions and other UG level chemistry.



### **Course outline:-**

<b>Sr. No.</b>	<b>Course Contents</b>
<b>1</b>	<b>Basic physical chemistry I</b> <b>Gaseous state:</b> Gas laws, kinetic theory of gas, collision and gas pressure, derivation of gas laws from kinetic theory, average kinetic energy of translation, Boltzmann constant and absolute scale of temperature, Maxwell's distribution law of molecular speeds (without derivation), most probable, average and root mean square speed of gas molecules, principle of equipartition of energy (without derivation). Mean free path and collision frequencies. Heat capacity of gases (molecular basis); viscosity of gases. Real gases, compressibility factor, deviation from ideality, van der Waals equation of state, critical phenomena, continuity of states, critical constants. Liquid state: physical properties of liquids and their measurements: surface tension and viscosity.
<b>2</b>	<b>Basic physical chemistry II</b> <b>Liquid state:</b> Qualitative treatment of the structure of the liquid state; Radial distribution function; physical properties of liquids; vapour pressure, surface tension and coefficient of viscosity, and their determination.
<b>3</b>	<b>Solid state:</b> Nature of the solid state, law of constancy of interfacial angles, law of rational indices, Miller indices, elementary ideas of symmetry, symmetry elements and symmetry operations, qualitative idea of point and space groups, seven crystal systems and fourteen Bravais lattices; X-ray diffraction, Bragg's law, a simple account of rotating crystal method and powder pattern method.
<b>4</b>	<b>Physical properties of liquids:</b> The structure of liquids, Vacancy theory of liquids, free volume in a liquid, Physical properties of liquids: Vapour pressure- molar heat of vaporization, Trouton's rule, entropy of vapourisation, Surface tension- Effect of surface tension, measurement of surface tension by stalagmometer and tensiometer method, relationship between Parachor and surface tension. Viscosity- Determination of viscosity by Ostwald viscosity method, Refraction- Refractive index, Measurement of refractive indices by Abbe refractometer

### **Learning Outcomes:-**

After the successful completion of the course, students will be able to

- Understand Thermodynamics and its applications.
- Concept of fugacity and its determination.
- Understand about solutions, its properties and vapor pressure curves.
- They can be able to apply basics into their experiment as well as their routine life.





### **Books Recommended:-**

1. 'A Textbook of physical chemistry', **K.K. Sharma, L.K. Sharma.**
2. 'Physical Chemistry', **Dr.D.R. Pandit, A.R. Rao and Padke.**
3. 'A Textbook of physical chemistry', **Samuel Glasstone.**
4. 'A Textbook of physical chemistry', **B.K. Sharma.**
5. 'Principles of Physical Chemistry', **P.W.Marron and C.F. Prutton.**
6. 'Chemical Kinetics', **K. J. Laidler, McGraw Hill.**
7. 'Chemistry for Engineers', **Dr. B. K. Ambasta, Laxmi Publications (P) LTD., New Delhi.**
8. 'Elements of Physical Chemistry', **P.W.Atkins, Oxford.**
9. 'Elements of Physical Chemistry', **Peter Atkins, Julio de Paula, 4<sup>th</sup> Edition, Oxford University Press.**
10. 'A Textbook of Physical Chemistry', **A. S. Negi& S. C. Anand, New Age International Publishers.**
11. 'Comprehensive Physical Chemistry for B.Sc', **B. K. Vermani, VivekPathania and S. KiranVermani, Laxmi Publications (P) LTD., New Delhi.**
12. 'A Textbook of Physical Chemistry', **K. L. Kapoor, Macmillan.**
13. 'Essentials of Physical Chemistry', **B.S.Bahl, ArunBahl and G.D.Tuli, S.Chand&Company.**
14. 'Advanced Practical Physical Chemistry', **J. B. Yadav, Goel Publishing house, Krishna Prakashan Media (P) Ltd.**
15. 'Experimental Physical Chemistry', **V. D. Athawale&ParulMathur, New Age International Publishers.**
16. 'Practicals in Physical Chemistry: A Modern Approach', **P. S. Sandhu, Macmillan.**
17. 'Advanced Viva Voca in Physical Chemistry Experiments', **Subhash-Satish&Dr.Kudesia, PragatiPrakashan, Meerut.**

### **E-Resources:-**

1. <http://ukcatalogue.oup.com/product/9780199543373.do#UkOsGtI3Bsk>
2. <http://web.mit.edu/speclab/www/links.html>
3. <http://library.duke.edu/research/subject/guides/chemistry/>
4. <http://www.chem.ox.ac.uk/cheminfo/internet.html>
5. <http://www.science.fau.edu/chemistry/links.htm>
6. <http://pubs.rsc.org/en/journals/journalissues/cp#!recentarticles&all>
7. <http://www.rsc.org/ConferencesandEvents/ISACS/PhysicalChemistryandNanoscience/index.ex>
8. <http://pubs.acs.org/loi/jpchax>
9. <http://www.csulb.edu/~lhenriqu/chem.htm>
10. <http://libguides.stanford.edu/content.php?pid=114712&sid=991132>
11. [http://simple.wikipedia.org/wiki/Physical\\_chemistry](http://simple.wikipedia.org/wiki/Physical_chemistry)
12. [http://chemistry.olivet.edu/chemistry\\_library.htm](http://chemistry.olivet.edu/chemistry_library.htm)
13. <http://as.wiley.com/WileyCDA/WileyTitle/productCd-EHEP000800.html>
14. <http://www.chemsoc.dk/KFlinks.htm>
15. <http://www.library.auckland.ac.nz/subject-guides/chem/chemmeta.htm>



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## **FACULTY OF SCIENCE**

### **DEPARTMENT OF CHEMISTRY**

**COURSE: B.Sc.**

**SEMESTER: IV**

**SUBJECT NAME: Chemistry- X SUBJECT CODE: 4SC04CHE2**

#### **Teaching & Evaluation Scheme:-**

Teaching hours/week				Credit	Evaluation Scheme/semester							
Th	Tu	Pr	Total		Theory				Practical			Total Marks
					Sessional Exam		University Exam		Internal		University	
					Marks	Hrs	Marks	Hrs	Pr	TW		
3	0	0	3	3	30	1.5	70	3	--	--	--	100

#### **Objectives:-**

- To learn about analytical instrumentation and their applications in analytical chemistry.
- To understand fundamentals of analytical chemistry and its laboratory applications.
- Aware about industrial chemistry, Chromatography, pesticides.

#### **Prerequisites:-**

- Before learning chemistry, student should aware about basic principles and theories of industrial and analytical chemistry, instrumental methods of analysis and other UG level chemistry.

#### **Course outline:-**

Sr. No.	Course Contents
1	<b>Industrial chemistry I</b> Introduction, Fertilizers: Manufacture of ammonia and ammonium salts, urea, superphosphate, biofertilizers. Glass and Ceramics: Definition and manufacture of glasses, optical glass and coloured glass. Clay and feldspar, glazing and vitrification, glazed porcelain, enamel.



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<b>2</b>	<b>Industrial chemistry II:</b> Fuels: Classification of fuel, heating values. Origin of coal, carbonization of coal, coal gas, producer gas, water gas, coal based chemicals. Origin and composition of petroleum, petroleum refining, cracking, knocking, octane number, anti-knock compounds, Kerosene, liquefied petroleum gas (LPG), liquefied natural gas (LNG), petrochemicals (C1 to C3 compounds and their uses).
<b>3</b>	<b>Cement, ceramic and glass:</b> Definition of Cement, ceramic and glass, industrial manufacture of Cement, ceramic and glass, reaction involves in Cement, ceramic and glass. <b>Pesticides:</b> Common pesticides: Production, applications and residual toxicity of gammaxane, aldrin, parathion, malathion, DDT, paraquat, decamethrin.
<b>4</b>	<b>Chromatography:</b> Principle of adsorption and partition chromatography. Column chromatography: adsorbents, classification of adsorbents, solvents, preparation of column, adsorption and applications. Thin Layer Chromatography: choice of adsorbent, choice of solvent, preparation of chromatogram, sample, R <sub>f</sub> value and its applications. Paper chromatography, solvent used, R <sub>f</sub> value, factors which affect R <sub>f</sub> value.

### **Learning Outcomes:-**

After the successful completion of the course, students will be able to

- Understand Thermodynamics and its applications.
- Concept of fugacity and its determination.
- Understand about solutions, its properties and vapor pressure curves.
- They can be able to apply basics into their experiment as well as their routine life.

### **Books for References:**

1. 'Pollution control in chemical and allied industries', by **S.P.Mahajan**.
2. 'Pollution control in industries. A series of books', by **H.R. Jones**.
3. 'System's approach to air pollution control', **R.J. Bibbero and I.G.Young**.
4. 'Air pollution Volume', **A.C. Stern**, *Academic press*.
5. 'Air pollution technologies', **Painter D. E.**, *Reston publishing company*.
6. 'Effluent treatment in process industries and waste disposal', **Instrumentation of chemical engineering**.
7. 'Industrial instrumentation', **D.P. Eckman**, *John – Wiley's and sons*.
8. 'Applied instrumentation in process industries', **W.G. Andrews**, *Gulf publication*.
9. 'Instrumentation and control for the process industries', **S. Borer**, *Elsevire applied science publisher*.
10. 'Chemical engineers handbook', **J.H. Perry and D. Green**, *McGraw Hill publishing company*, New York.
11. 'Industrial chemistry', **B.K. Sharma**, *S.Chand& Company*.



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### **E-Resources:-**

1. <http://pubs.acs.org/loi/jpchax>
2. <http://www.csulb.edu/~lhenriqu/chem.htm>
3. <http://libguides.stanford.edu/content.php?pid=114712&sid=991132>
4. [http://simple.wikipedia.org/wiki/Physical\\_chemistry](http://simple.wikipedia.org/wiki/Physical_chemistry)
5. [http://chemistry.olivet.edu/chemistry\\_library.htm](http://chemistry.olivet.edu/chemistry_library.htm)
6. <http://as.wiley.com/WileyCDA/WileyTitle/productCd-EHEP000800.html>
7. <http://www.chemsoc.dk/KFlinks.htm>



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## FACULTY OF SCIENCE

### DEPARTMENT OF CHEMISTRY

**COURSE: B.Sc.**

**SEMESTER: IV**

**SUBJECT NAME: Chemistry Practical-IV**

**SUBJECT CODE: 4SC04CHP1**

#### Teaching & Evaluation Scheme:-

Teaching hours/week				Credit	Evaluation Scheme/semester							
Th	Tu	Pr	Total		Theory				Practical			Total Marks
					Sessional Exam		University Exam		Internal		University	
					Marks	Hrs	Marks	Hrs	Pr	TW		
0	0	6	6	3	--	--	--	--	10	10	30	50

#### Objectives:-

- To understand inorganic compounds and identification
- To learn practical principles related to inorganic chemistry and chromatography
- To learn and understand titrations and estimations
- To create interest in students in learning basic chemistry.

#### Prerequisites:-

- Before studying practical of chemistry, all students have basic knowledge of inorganic and organic compounds, properties, molecular structure and knowledge related to UG level chemistry.

#### Course outline:-

Sr. No.	Course Contents
1	<b>Inorganic Qualitative Analysis:</b> Qualitative Analysis of an inorganic mixture containing four radicals, excluding $\text{PO}_4^{3-}$ , $\text{CrO}_4^{2-}$ , $\text{Cr}_2\text{O}_7^{2-}$ , $\text{AsO}_3^{3-}$ , $\text{AsO}_4^{3-}$ , $\text{BO}_3^{3-}$ and $\text{S}^{2-}$
2	<b>Physicochemical Exercise</b> 1. To determine the specific reaction rate of the hydrolysis of methyl acetate / Ethyl acetate catalyzed by $\text{H}^+$ ion at room temperature. 2. To study the rate of reaction between $\text{K}_2\text{S}_2\text{O}_8$ and KI. 3. To study the rate of reaction between $\text{KBrO}_3$ and KI.



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	4. To determine the relative strength of HCl and $H_2SO_4$ . 5. To determine the temperature coefficient and Energy of activation for the hydrolysis of ester at two different temperatures. 6. To determine the temperature coefficient and Energy of activation for the reaction between $K_2S_2O_8$ and KI at two different temperatures.
<b>3</b>	<b>Chromatography</b> a. Separation of a mixture of two amino acids by ascending and horizontal paper chromatography b. Separation of a mixture of two sugars by ascending paper chromatography

### **Learning outcomes:-**

After the successful completion of the course, students will be able to:

- Understand basic principal of chemistry practical's
- Understand Qualitative Analysis of an inorganic mixture
- Understand estimation and titrations
- Separation of a mixture by chromatography.

### **Books for References:**

1. 'Textbook of practical chemistry', **Vogel**.
2. 'Practical chemistry', **Pandey**.
3. 'Practical in inorganic chemistry & analytical chemistry', **H.G. Raval, Nirav & Rupal Prakashan**.

### **E-Resources:-**

1. <http://pubs.acs.org/journal/inocaj>
2. [http://www.chemlin.de/chemistry/inorganic\\_chemistry.htm](http://www.chemlin.de/chemistry/inorganic_chemistry.htm)
3. <http://www.anorg.chem.uu.nl/home/index.html>
4. <http://www.springer.com/chemistry/inorganic+chemistry/journal/11502>
5. <http://libguides.stanford.edu/content.php?pid=149720&sid=1271547>
6. <http://www.science.uwaterloo.ca/~cchieh/cact/applychem/inorganic.html>



## FACULTY OF SCIENCE

**COURSE: B.Sc.**

**SEMESTER: IV**

**SUBJECT NAME: Professional Communication Skills (PCS)**

**SUBJECT CODE: 4SC04PCS1**

### Teaching & Evaluation Scheme:-

Teaching Scheme				Credit	Evaluation Scheme						
Th	Tu	Pr	Total		Th	Hrs	Sessional Exam	Hrs	Term Work	Practical / Comprehensive Viva	Total
02	02	--	04	03	70	3	30	1.5	20	30	150

### Objectives:

- To give a global competitive edge to the students by way of honing their Professional Communication Skills.
- To make them aware of the societal setting of the professional life.
- To train them in basic fundamentals skills of Communication – LSRW

### Prerequisites:

- Students should have basic knowledge of English Language and grammar.
- Students should have ability to speak and write correct sentences in their day to day language.
- Students should be familiar with correct usage of language.

### Course outline:

Sr. No.	Course Content (Title of the Unit)	Minimum Number of Hours
0	Prerequisites	02
1	Behavioural Communication	08
2	Mastering LSRW Skills	05
3	Presentation Skills	05
4	Reading Skill	03
5	Writing Skill	10
6	Learning Phonetics for Effective Speaking	06
7	Revision of Grammar	06
8	Vocabulary Building	03
	<b>PART-B Prose and Poetry</b>	12
9	One Act Play	
10	Poems	
	Total Hours	60



## Detail Course Content:

Unit No.	Content In Details Including Its Sub Topics
	<b>PART – A Professional Communication</b>
1	<b>Behavioural Communication</b> <ul style="list-style-type: none"> <li>Basics of Behavioral Communication</li> <li>Importance of Behavioral Communication in Professional World</li> <li>Types of Behavioral Communication</li> <li>Verbal Communication v/s Non Verbal Communication</li> <li>Grooming and Etiquettes</li> </ul>
2	<b>Mastering LSRW Skills</b> <ul style="list-style-type: none"> <li>Story Making and Telling</li> <li>Movie Review (Writing and Speaking)</li> <li>Book Review (Writing and Speaking)</li> </ul>
3	<b>Presentation Skills</b> <ul style="list-style-type: none"> <li>What is presentation?</li> <li>Purpose of Presentation</li> <li>Preparatory Steps of Presentation</li> <li>Nuances of Delivery</li> <li>Importance of Audio-Visual Aids in Presentation</li> </ul>
4	<b>Business &amp; Technical Letter Writing</b> <ul style="list-style-type: none"> <li>Introduction to Letter Writing</li> <li>Personal Letter Vs Business Letter</li> <li>Style of writing Business Letter</li> <li>Principles of writing Business Letter</li> <li>Layout of Business Letter</li> <li>Types of Letter – Inquiry, Order, Quotation, Claim &amp; Adjustment, Sales Letter</li> </ul> <b>Report Writing:</b> <ul style="list-style-type: none"> <li>What is Report?</li> <li>Characteristics of Report</li> <li>Types of Informal Reports</li> </ul>
6	<b>Learning Phonetics for Effective Speaking</b> <ul style="list-style-type: none"> <li>Speech Mechanism</li> <li>Sounds, Vowels &amp; Consonants</li> <li>Accents, Tone, Syllable, Intonation Patent &amp; Phonetics Transcription</li> </ul>
7	<b>Revision of Grammar</b> Some of the grammatical topics should be revised to strengthen LSRW SKILLS of the students
8	<b>Vocabulary Developing</b> <ul style="list-style-type: none"> <li>Homophones</li> <li>Homonyms</li> <li>One word Substitute</li> </ul>
9	<b>PART – B Literature</b>
	<b>Prose (One Act Play)</b> <ul style="list-style-type: none"> <li>“A Marriage Proposal” by Anton Chekhov</li> </ul>





## **C. U. SHAH UNIVERSITY**

	<b>Poetry</b> <ul style="list-style-type: none"><li>• “The Night of Scorpion ” by NissimEzekeil</li><li>• “The Lamb” by William Black</li><li>• “The Pulley ” by George Herbert</li></ul>
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### **Resources:**

- Green Andy, Effective Personal Communication Skills For Public Relations, Kogan Page, Limited, 2006
- Technical Communication, by D.K.Chakradev, Tech-max publication
- Basic Business Communication, by Flatly and Lesicar
- Basic Communication Skills for Technology, by Andrea J. Rutherford, by Pearson Education
- From sentence to paragraph, by William J. Kelly and Deborah L. Lawton, by Longman
- Technical Communication : Principles and Practice, by Meenaxi Raman andSangeeta Sharma, Oxford University Press
- An Intermediate English Grammar, Raymond Murphy, Cambridge University Press
- A High School English Grammar, Wren & Martin, S. Chand Publication
- A Course in Phonetics for Spoken English, Sethi&Dhamija
- Masks: One Act Plays(Ed) D. S. Maini. Macmillan.
- Wing word: A Collection of Poetries.