



SYLLABUS

Course Title	CHEMISTRY-V
Course Code	BSC501
Course Credit	Lecture : 04
	Tutorial : 00
	Practical : 03
	Total : 07

Detailed Syllabus:

Sr. No	Name of chapter & Details	Session Allotted
SECTION-I		
1	<p>Wave Mechanics</p> <ul style="list-style-type: none"> • Outline of basic concepts of wave mechanics • Operators algebra (addition, subtraction, multiplication), commutative property, linear operator, commutation operator, the operator DEL & DEL SQUERED, momentum operator, Hamiltonian operator • Particle in one dimensional box; normalized wave equation and energy related to a particle moving in one dimensional box, energy levels and interpretation of energy equation, linear polymers as one dimensional box, examples. • Particle in three dimensional box : Derivation of normalized wave equation, energy related with it, energy levels and degeneracy, examples. • Wave equation for hydrogen atom: To derive the relation between Cartesian and polar coordinates, derivation of volume element in polar coordinates, Schrodinger equation in polar coordinates, separation of variables. • Energy of 1s orbital, normalization condition and problems on it(in polar coordinates). 	10
2	<p>Crystal Field Theory</p> <ul style="list-style-type: none"> • Introduction • Concept of crystal field theory • Splitting of d-orbitals in octahedral and tetrahedral crystal field with CFSE concept. • Factors affecting splitting energy. • Weak field and strong field ligands. • High spin and low spin complexes with pairing energy. • Magnetic behaviour of transition metal complexes. • Orbital angular momentum contribution to magnetic momentum of complexes. 	10

	<ul style="list-style-type: none"> • Examples based on CFSE, Pairing energy and magnetic momentum. 	
3	<p>Transition metal complexes of π - acid ligands</p> <ul style="list-style-type: none"> • Metal carbonyls: Definition, preparation, physical and chemical properties, nature of M-CO linear bond based on M.O. Theory with spectral support, classification of metal carbonyls, types of CO groups and detection of CO groups using IR spectra. • Structure of $\text{Ni}(\text{CO})_4$, $\text{Fe}(\text{CO})_5$, $\text{Fe}_2(\text{CO})_9$, $\text{Co}_2(\text{CO})_8$, $\text{Fe}_3(\text{CO})_{12}$ and $\text{Mn}_2(\text{CO})_{10}$ • Metal nitrosyl. 	10
SECTION-II		
4	<p>Cement</p> <ul style="list-style-type: none"> • Introduction • Type of cement • Raw material for manufacture • Cement rock beneficiation • Manufacturing Processes (a) Dry Process (b) Wet Process • Setting of cement (a) Hydrolysis (b) Hydration • Properties of cement • Testing of cement • Indian Standard Institute (ISI) specification of cement • Mortar, concrete and RCC • Curing and decay of concrete • Uses of cement 	9
5	<p>Fertilizers</p> <ul style="list-style-type: none"> • Introduction • Plant nutrients and its role • Classification of fertilizers • Properties of fertilizers • Nitrogenous fertilizers • Ammonium nitrate (a) Manufacture by Prilling method (b) Manufacture by Stengel method • Ammonium sulphate (a) Manufacture from gypsum (Sindri Process) (b) Action as fertilizer • Urea (a) Manufacture from ammonium carbamate (b) Action as fertilizer • Calcium cyanamide (a) Manufacture by electric carbonate (b) Action as fertilizer • Phosphate fertilizer • Normal super phosphate • Manufacture 	9

	<ul style="list-style-type: none"> • Triple super phosphate • Manufacture • Ammonium Phosphate <ul style="list-style-type: none"> (a) Manufacture of mono ammonium phosphate (b) Manufacture of diammonium phosphate • Potassium fertilizer • NPK fertilizer • Nomenclature 	
6	<p>Petrochemicals</p> <ul style="list-style-type: none"> • Introduction • Petrochemicals from Methane (C1), Ethylene (C2) and Propylene (C3) • Methane <ul style="list-style-type: none"> (a) Manufacture of Chloromethanes (Chlorinated hydrocarbons) (b) Manufacture of Synthetic gas • Ethylene <ul style="list-style-type: none"> (a) Manufacture of ethylene glycol from <ul style="list-style-type: none"> (1) Ethylene chlorohydrins (2) Ethylene oxide (b) Manufacture of ethyl alcohol by <ul style="list-style-type: none"> (1) Sulphuric acid process and (2) Catalytic hydration process • Propylene <ul style="list-style-type: none"> (a) Manufacture of glycerol <ul style="list-style-type: none"> (1) via allyl chloride and (2) via acrolein (b) Manufacture of acrylonitrile 	8

Instructional Method and Pedagogy:

1. Lectures will be conducted with the aid of multi-media projector, black board, OHP etc.
2. Assignments based on course content will be given to the students at the end of each unit/topic and will be evaluated at regular interval.
3. Surprise tests/Quizzes/Tutorials will be conducted.
4. The course includes a laboratory, where students have an opportunity to build an appreciation for the concepts being taught in lectures.
5. Minimum ten experiments shall be there in the laboratory related to course contents.

List of Practical (6 Hour/Week)

For volumetric exercise all the standard solutions are to be prepared by the students.

(i) Iodometry and Iodimetry

1. Estimation of Cu^{+2} and $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ in the given $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ using 0.05N $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$ solution.
2. Estimation of As^{+3} and As_2O_3 in the given As_2O_3 using 0.05N $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$ solution.

(ii) Complexometric titration:

1. Estimation of the amount of Ni^{+2} in the given $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$ solution using 0.02 N EDTA solution.
2. Estimation of the amount of Mg^{+2} and Pb^{+2} in the given solution containing a mixture of

Mg⁺² and Pb⁺² using 0.02 N EDTA solution

3. Estimation of the amount of Ca⁺² and Zn⁺² in the given solution containing a mixture of Ca⁺² and Zn⁺² using 0.02 N EDTA solution
4. Estimation of the amount of Fe⁺³ and Cr⁺³ in the given solution containing a mixture of Fe⁺³ and Cr⁺³ using 0.02 N/ 0.01 M Pb(NO₃)₂ and 0.02 N/ 0.01 M EDTA solution.

(iii) Redox titration:

1. Determination of the amount of NO₂⁻¹ in the given NaNO₂ or KNO₂ solution by reduction method using 0.1 N KMnO₄ solution.
2. Water Analysis: To determine the amount of chloride in the given sample of water using 0.02 N AgNO₃
3. To determine the purity of NaHCO₃ in the given sample

Students Learning Outcomes:

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

- Understand concepts of wave mechanics
- Apply the wave mechanics concept on the theory of partial in two and three dimensional box
- Understand theory and parameters of crystal field theory
- Solve the structure of metal carbonyls
- Understand industrial application and preparations of cement, fertilizers and petrochemicals.

Reference Books:

1. Quantum Chemistry – R.K. Prasad, New Age International Publishers
2. Inorganic Chemistry- James E Huheey (3rd Edition) Harper International SI Edition
3. Coordination chemistry – Gurdeep Chatwal and MS Yadav, Himalaya publishing House
4. Principles of Inorganic Chemistry – B.R.Puri, L.R. Sharma & K.C. Kalia; Vallabh Publications, Delhi
5. Modern aspects of Inorganic Chemistry- H.J. Emeleus and A.G. Sharpe; Routledge & Kegan Paul Ltd., 39 Store street, London WC1E7DD
6. Advance Inorganic Chemistry (3rd Edition)- F.A. Cotton and G. Wilkinson; Wiley Eastern Pvt. Ltd.
7. A Text Book of Petrochemicals by Bhaskar Rao
8. Advanced Petrochemicals by Dr. G.N. Sarkar
9. Chemicals from Petrochemicals by A.L. Waddam
10. Reigel's Handbook of Industrial Chemistry by James A. Kent
11. Engineering Chemistry by Jain and Jain
12. Outlines of Chemical Technology by Charles Dryden
13. Industrial Chemistry by B.K. Sharma

Course Title	CHEMISTRY-VI	
Course Code	BSC502	
Course Credit	Lecture	: 04
	Tutorial	: 00
	Practical	: 03
	Total	: 07
Detailed Syllabus:		
Sr. No	Name of chapter & Details	Session Allotted
SECTION-I		
1	Name Reactions, Rearrangement and Reagents: <ul style="list-style-type: none"> • Reactions <ol style="list-style-type: none"> a. Arndt Eistert Reaction b. Bischler Napierski Reaction c. Leuckart Wallach Reaction • Rearrangements <ol style="list-style-type: none"> a. Hoffmann Rearrangement b. Curtius Rearrangement c. Fries Rearrangement • Reagents <ol style="list-style-type: none"> a. Lithium Aluminium Hydride LiAlH_4 b. Triphenyl phosphine c. Sodamide 	6
2	Alkaloids <ul style="list-style-type: none"> • Introduction, Occurrence, Classification, Isolation, General method of proving structure of Alkaloids, Constitution, Properties and Synthesis of: <ol style="list-style-type: none"> a. Coniine b. Nicotine c. Papaverine 	6
3	Carbohydrates <ul style="list-style-type: none"> • Introduction, Classification and nomenclature, General reactions of Monosaccharides (with reference to Glucose and Fructose) • Inter-conversions: <ol style="list-style-type: none"> a. Conversion of Aldose to the corresponding Ketose b. Conversion of Aldose to the next higher Ketose (Wolforn method) c. Conversion of Aldose to the Ketose having two more carbon atoms (Sowden method) 	6

	<p>d. Conversion of Ketose to the corresponding Aldose</p> <ul style="list-style-type: none"> • Step-up reactions (Ascending in Aldose series) <ul style="list-style-type: none"> a. Kiliani Reaction b. Swoden Nitromethane reaction • Step-down reactions (Descending in Aldose series - Aldohexose to Aldopentose) by Ruff's Method • Configuration of monosaccharides • Ring structure of Aldoses • Determination of ring size of Glucose by <ul style="list-style-type: none"> a. Methylation method b. Periodic oxidation method • Mutarotation of D (+) glucose 	
4	<p>Synthetic Drugs, Dyes and Sweetening Agents</p> <ul style="list-style-type: none"> • Only Synthesis and Uses of Drugs: Ibuprofen, Atenlol and Adrenaline Dyes: Orange II, Crysodine G, Auramine O Sweetening Agents: Saccharin, p-anisylurea and Dulcin 	6
5	<p>Synthesis of Heterocyclic Compounds containing two hetero atoms</p> <ul style="list-style-type: none"> • Preparation of: <ol style="list-style-type: none"> 1) Pyrazole 2) Imidazole 3) Isoxazole 4) Thiazole 5) Pyrimidine 6) Pyridazine 7) Oxazine 8) Thiazine 9) Dioxane 	6
SECTION-II		
6	<p>Molecular symmetry</p> <ul style="list-style-type: none"> • Introduction, • symmetry elements and symmetry operation with illustration • Definition of Properties of group, subgroup and classes • Products of symmetry operations • Symmetry point group. C₁, C_s, C_i, C_n, C_{nv}, C_{nh}, D_n, D_{nh}, D_{nd}, C_∞, D_{∞h}, T_d, O_h <p>Multiplication tables for C_{2v}, C_{3v} and C_{2h} point groups.</p>	10
7	<p>U.V. spectroscopy</p> <ul style="list-style-type: none"> • Introduction • Theory of ultra-violate spectra • Instrumentation • Type of transition in organic molecules; auxochrome, chromophore; • Explanation of bathochromic shift and hypsochromic shift, • Hyper chromic effects • Types of bands • Effect of solvent, franck condon principles • Application of UV spectra • Calculation of λ-max (1) Dienes and conjugated dienes (2) enones and 	8

	dienones ie. unsaturated carbonyl compounds, (3) aromatic carbonyl system	
8	Infrared Spectroscopy <ul style="list-style-type: none"> • Introduction • Range of IR, theory of IR • Modes of fundamental vibration • IR active, force constant • Vibration coupling • Fermi resonance • Finger print region • Instrumentation • Application of IR • Structure of organic molecules from IR • Interpretation of IR for given molecules and problems 	8
Instructional Method and Pedagogy:		
<ol style="list-style-type: none"> 1. Lectures will be conducted with the aid of multi-media projector, black board, OHP etc. 2. Assignments based on course content will be given to the students at the end of each unit/topic and will be evaluated at regular interval. 3. Surprise tests/Quizzes/Tutorials will be conducted. 4. The course includes a laboratory, where students have an opportunity to build an appreciation for the concepts being taught in lectures. 5. Minimum ten experiments shall be there in the laboratory related to course contents. 		
List of Practical (6 Hour/Week)		
Separation & Analysis of an organic mixture containing: (a) Two solid components using water, NaHCO ₃ , NaOH and HCl for separation (b) Liquid + liquid component - separation by physical method. (c) Liquid + solid component - separation by physical method.		
Students Learning Outcomes:		
After Successful completion of the above course, students will be able to: <ul style="list-style-type: none"> ▪ Understand theory and application of various Name Reactions, Rearrangement and Reagents ▪ Learn the general structural determination method for alkaloids. ▪ Understand properties and synthesis of some alkaloids. ▪ Understand the chemistry of carbohydrates. ▪ Synthesis of some Drugs, Dyes and Sweetening Agents. ▪ Synthesis of Heterocyclic Compounds containing two hetero atoms. ▪ Understand the fundamentals of spectroscopy. ▪ Understand Molecular symmetry and various symmetry point group. ▪ Understand theory and applications of UV and IR spectroscopy. 		
Reference Books:		
<ol style="list-style-type: none"> 1. Advanced Organic Chemistry by Arun Bahl and B.S.Bahl 2. Text Book of Organic Chemistry for BSc students by B.S. Bahl 3. Organic Chemistry by Morrison and Boyd 4. Fundamentals of Organic Chemistry by Solomon, John Wiley. 		

5. Textbook of Organic Chemistry by P.L. Soni and H.M. Chawla
6. March's Advanced Organic Chemistry Reactions, Mechanism and Structure by Michael B Smith and Jerry March
7. Reaction Mechanisms and Reagents in Organic Chemistry by Gurudeep R. Chatwal
8. Advanced Organic Reaction Mechanism by N. Tewari
9. Organic Chemistry by I.L.Finar
10. Spectrometric identification of organic compounds By Silverstrin Bassler (16th Editim)
11. Elementary organic spectroscopy by Y. R. Sharma.
12. Spectroscopy of organic compounds by John R. Dyer.
13. Spectroscopy of organic compounds by P. S. Kalsi
14. Chemical Application of Group theory by F Albert Cotton
15. Symmetry in chemistry by H. M. Jahe.
16. Molecular spectroscopy by B. K. Sharma.
17. Organic Spectroscopy by B. K. Sharma



SYLLABUS

Course Title	CHEMISTRY-VII
Course Code	BSC503
Course Credit	Lecture : 04
	Tutorial : 00
	Practical : 03
	Total : 07

Detailed Syllabus:

Sr. No	Name of chapter & Details	Session Allotted
SECTION-I		
1	Second Law of Thermodynamics <ul style="list-style-type: none"> • Limitation of first law of thermodynamics • Spontaneous process • Carnot cycle and theorem • Statements of second law of thermodynamics • Perpetual motion of second kind (briefly) • Concept of entropy, Definition of entropy • ΔS in reversible and irreversible (spontaneous) process • ΔS in ideal gases • ΔS of mixture of ideal gas • ΔS in physical transformations • Entropy and second law of thermodynamics • Physical significance of entropy 	8
2	Free Energy and Chemical Equilibrium <ul style="list-style-type: none"> • Work function: its physical significance and variation with V and T • Free Energy: its significance and variation with P and T • ΔG for ideal gases, Gibbs Helmholtz equation and its applications • Criteria for chemical equilibrium • Vant Hoff reaction isotherm • Vant Hoff isochore • Law of active mass • Clausius Clapeyron equation 	7
3	Crystalline State <ul style="list-style-type: none"> • Difference between crystalline and amorphous solid, Crystal and crystallography 	8

	<ul style="list-style-type: none"> • Three laws of crystallography • Structure of crystals • Space lattice and Unit cell, Bravice lattices • Type of cubic lattice and inter planar spacing • X- rays Diffraction: Brags equation, Experimental methods (Rotating crystal and Powder method), Structure of Rock salt (NaCl) and Sylvin (KCl) • Liquid Crystals: Introduction, Definition and Classification of liquid crystals (Smectic, Nematic, Cholesteric and Disc shaped) 	
4	<p>Phase Rule</p> <ul style="list-style-type: none"> • Three component system, • Method of graphical presentation, • Types of partially miscible three liquid systems: <p>(1) One partially miscible pair: Effect of adding third compenent,Nature of tie line, Plait point, Binodle curve, Characteristics of diagram, A is added to binery system, A is constant and B and C varied,</p> <p>(2) Formation of two pairs of partially miscible liquid,</p> <p>(3) Formation of three pairs of partially miscible liquid.</p> <ul style="list-style-type: none"> • Application of ternary liquid diagram 	7
SECTION-II		
5	<p>Errors and statistics</p> <ul style="list-style-type: none"> • Introduction • Explanation of errors and mistake • Classification of errors, Determinate and indeterminate errors, Operational and personal error, Instrumental errors and reagent errors, additive and proportional error • Accuracy and precision, minimization of error • Calibration of Instruments , blank measurement , independent method parallel method, Standard addition method • Explanation of Significant figure and its laws with complete interpretation • Mean and standard deviation , variance and coefficient of variance • Absolute error and relative error, mean value, deviation and relative mean deviation. Gaussian curve and its explanation • Importance of Q – test and T -test (Student T test) • Example on errors, significant figures , Q test and T test 	6
6	<p>Basic Principle of Qualitative analysis only separation</p> <ul style="list-style-type: none"> • Separation of the following in presence of each other (by any method) <p>(1) Cl^- , Br^- , I^- (2) NO^{-2} , NO^{-3} , Br^-</p> <p>(3) S^{-2} , SO_3^{-2} , SO_4^{-2} (4) PO_4^{-3} , AsO_3^{-3} , AsO_4^{-3}</p> <p>(5) CO_3 , SO_3 , S^{-2} (6) Cu^{+2} , Cd^{+2}</p>	6

7	<p>Colourimetry</p> <ul style="list-style-type: none"> • Introduction • Growth Drapper law, Lambert's Law, Beayer's Law, Lambert's- Beayer's Law and Derivation, application and deviation of Lambert's Law • Spectro photometric titration with graph and proper explanation <ul style="list-style-type: none"> (1) Deficit of absorbance by product and Titrant (2) Deficit of absorbance by product and Reagent (3) Deficit of absorbance by Reagent and Titrant (4) Deficit of absorbance by product only 	6
8	<p>Volumetric analysis with example of calculation based on pH, normality, molarity, Ksp etc.</p> <ul style="list-style-type: none"> • Ostwald's law- Regarding indicator – necessary derivation and formula of indicator used in Neutralization, redox, precipitation titration. • Primary and secondary standard explanation <ul style="list-style-type: none"> (1) Explanation of neutralization titration with graph. <ul style="list-style-type: none"> a) Strong acid - Strong base titration b) Weak acid - Strong base titration c) Strong acid – Weak base titration. d) Poly protic acid - Strong base titration (2) Redox Titration: <ul style="list-style-type: none"> ➤ Principle of external and internal indicator in redox titration. e.g. Diphenyl amine , starch & $K_3[Fe(CN)_6]$ ➤ Redox Titration with graph and calculation ➤ Iodometry and Iodimetry titration ➤ preparation of standard sodium thiosulphate solution (3) Precipitation Titration: <ul style="list-style-type: none"> ➤ Argentometric Titration (I) Mohar's method (II) Fazan's method (III) olhard's method with use of proper indicator, graph and it's practical application ➤ Examples of calculation based on pH, Normality, Molarity, Ksp etc 	8
Instructional Method and Pedagogy:		
<ol style="list-style-type: none"> 1. Lectures will be conducted with the aid of multi-media projector, black board, OHP etc. 2. Assignments based on course content will be given to the students at the end of each unit/topic and will be evaluated at regular interval. 3. Surprise tests/Quizzes/Tutorials will be conducted. 4. The course includes a laboratory, where students have an opportunity to build an appreciation for the concepts being taught in lectures. 5. Minimum ten experiments shall be there in the laboratory related to course contents. 		
List of Practical (6 Hour/Week)		
<p>Conductometry</p> <ol style="list-style-type: none"> 1. To determine normality and gms/lit of xN HCl and also determine Specific conductance by conductometry. 		

2. To determine normality and gms/lit of the mixture of HCl+CH₃COOH by conductometry.
3. To determine the normality of weak acid by conductometry.
4. To determine the concentration of Ni⁺² using 0.1M EDTA solution.
5. To determine the normality of xN AgNO₃ using 0.5N NaCl by Conductometry.

pH metry

1. To determine normality of xN HCl by pH metry.
2. To determine normality and dissociation constant of weak acid (xN CH₃COOH) by pH metry.
3. To determine normality and dissociation constant of dibasic acid (xN oxalic acid/malonic acid/maleic acid) using 0.1N NaOH Solution.

Colourimetry

1. Find out the amount of Ni⁺² in the given solution by colourimetry method.
2. Find out the amount of Fe⁺³ in the given solution by colourimetry method.

Viscosity

1. To determine relative and absolute viscosity of pure liquid A, B, C, D by Ostwald's viscometer.
2. Prepare three different 10%, 5%, 2.5% aqueous solution of Glycerine. Find viscosity of these three solutions as well as unknown Concentration solution with the help Ostwald's viscometer.

Refractometer

1. To determine specific refractivity and molecular refractivity of given pure liquid A, B, C, D.
2. To determine specific refractivity and molecular refractivity of glycerine (10%, 5%, 2.5%) and unknown glycerine solution.

Students Learning Outcomes:

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

- Understand Second law of thermodynamics..
- Understand concept of free energy and chemical equilibrium.
- Different types of crystalline states.
- Description of phase rule.
- Different types of errors occur in chemistry practical's
- Types of titrations methods

Reference Books:

1. Elements of Physical Chemistry, S Glasstone and D Lewis, Macmillon and Co Ltd., New Delhi.
2. Principles of Physical Chemistry, S H Maron and C F Prutton, Oxford and IBH , New Delhi.
3. Thermodynamics for Chemists, S Glasstone, Affiliated East West Press Pvt Ltd, New Delhi
4. Elements of Physical Chemistry, B R Puri, L R Sharma, M S Pathania Vishal publishing Co Jalandhar.
5. Advanced Physical Chemistry, J. N. Gurtu, Pragati Prakashan, Meerut.
6. Physical Chemistry, N. Kundu and S. K. Jain, S. Chandand Co. New Delhi.
7. Physical Chemistry, K. L. Kapoor, Macmillan India Ltd. Delhi.
8. Physical Chemistry, B. K. Sharma Goel Publishing House, Meerut.
9. Thermodynamics, Dr. Gurdeep Raj, Goel Publishing House Meerut.
10. Fundamental of analytical chemistry by skoog & west.
11. Instrumental method of chemical analysis By B. K. Sharma 22 wilhim
12. Water analysis and nater pollution by V. P. Kudesia

13. Instrumental method of chemical analysis By Chatwal Amreli
14. Thin layer chromatography by Egal stall
15. Book for water analysis: By R.K. Trivali, V. P. Kulesiya.
16. Analysis cal chemistry by click
17. Inorganic inflictive analysis by Vogel and Gehani Parekh
18. Electronic methods of analysis by brewing
19. Principle of instrumental analysis by S korg.



SYLLABUS

Course Title		CAMPUS TO CORPORATE TRAINING– II	
Course Code		CD605	
Course Credit		Lecture	: 03
		Tutorial	: 00
		Practical	: 00
		Total	: 03
Detailed Syllabus:			
Sr. No	Name of chapter & Details		Session Allotted
VERBAL ABILITY			
1	Verbal Ability: <ul style="list-style-type: none"> • Understand and apply techniques to develop their verbal ability skills • Spotting errors, selecting words, Idioms and phrases, Verbal analogies, synonyms, sentence corrections, ordering of sentences, antonyms, change of speech. 		8
ESSAY WRITING			
2	Report Writing <ul style="list-style-type: none"> • Analyse and identify the techniques of report writing • Sketch the layout of report writing on the basis of the video/statistics/charts • Organize the ideas/views and draft the report/essay 		4
INTERVIEW READINESS			
3	CV/ Resume Building <ul style="list-style-type: none"> • Understand the format and design of the documents. • Apply Lexical showcasing their individual skills • Design their own document 		3
4	Cover Letter & Research on Company details <ul style="list-style-type: none"> • Identify the importance of a job profile from different companies. • Assess their own cover letter based on the power verbs from the job profile. • Reproduce the document highlighting the requisite areas 		2
5	Presentation Skill <ul style="list-style-type: none"> • Classify the do's and don'ts of presentation skills. • Locate the technique for handling questions during presentation. • Analyse their presentation based on the vision and mission of a company 		3

	<ul style="list-style-type: none"> Employ the skills acquired in delivering the presentation.8) Thiazine 	
6	<p>Grooming & Communication Skills</p> <ul style="list-style-type: none"> Understand the importance of the first impression Apply good grooming habits for corporate culture Locate gender inferiority problems if any Review importance of gestures and body language Dramatize the developed skills to overcome cross cultural sensitivity Discriminate the traits creating barrier in communication 	2
7	<p>FAQs & Open Ended Questions</p> <ul style="list-style-type: none"> Understand and analyse the significance of nonverbal skills while facing interview. Apply the identified techniques handling stressful situation Self-assess their individual strengths/weakness based on the key skills to handle FAQs 	8
GROUP DISCUSSION		
8	<p>Interpersonal Skill – GD</p> <ul style="list-style-type: none"> Understand the concept of GD over a Debate. Locate the importance of Interpersonal Skills in a GD Demonstrate the acquired skill in role-plays Analyse the key areas of improvement after demonstrating 	4
NON – VERBAL ABILITY		
9	<p>Series, Analytical Reasoning, Embedded Images:</p> <ul style="list-style-type: none"> Understand the types of problems asked in company tests. Apply the identified techniques Recognize the steps Solve the problems with time management 	3
10	<p>Paper Folding, Image Analysis, Mirror Images, Shape Construction:</p> <ul style="list-style-type: none"> Understand the types of problems asked in company tests. Understand the short cut methods Apply the identified techniques Recognize the steps Solve the problems with time management 	3
11	<p>Analogy, Pattern Completion, Paper Cutting, Dot Situation:</p> <ul style="list-style-type: none"> Understand the types of problems asked in company tests. Recognize the steps Understand the short cut methods Solve the problems with time management 	2
12	<p>Cubes and Dice, Classification, Water Images, Figure Matrix</p> <ul style="list-style-type: none"> Understand the types of problems asked in company tests. Understand the short cut methods Recognize the steps Solve the problems with time management 	3
	Total Hours	45
Instructional Method and Pedagogy:		

1. Participative – Student Centric Learning Method
2. Activities and Role Plays and Audio-Visual tools will be used to enhance student participation.

Students Learning Outcomes:

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

- **Develop** their comprehensive approach on job skills & they will be ready for placements.
- **Understand** the importance of Portfolio & Resume preparation and **apply** the techniques to develop their individual documents.
- **Assess** their individual skills and develop all IFS on the basis of their strength areas.
- **Evaluate** how to perform During GD & how to stand out of the Crowd.
- **Cultivate** Public Speaking Skills and overcome with the stage fear.
- **Employ** all the IFS skills during mock interview.

Additional Resources:

www.indiabix.com