Arts, Science a... erce College, Chikhaldara, Distt. Amravati (MS)
Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and Course Outcomes (Cos)

Bachelor of Science

rogramme Outcomes

O1: To introduce the fundamentals of science education
O2: To enrich students' knowledge in all basic sciences
O3: To develop interdisciplinary approach amongst students
O4: To inculcate sense of scientific responsibilities and social & environment awareness
O5: To help students build-up a progressive and successful career in academics and industry
O6: To motivate the students to contribute in the development of Nation

POs:

The students graduating with the degree B.Sc. with Botany will be able to

PO1.Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
PO2.Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
PO3. Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.
PO4. Effective Citizenship: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
PO5. Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.
PO6. Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.
PO7. Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes

PSOs:

Upon completion of the programme successfully, students would be able to

1. Identify major groups of plants and compare the characteristics of lower (microbes, algae ,fungi, bryophytes and pteridophytes) and higher (Gymnosperms and angiosperms).
2. use evidence based comparative botany approach to explain the evolution of organism and understand the genetic diversity.
3. explain various plant processes and functions, metabolism, concepts of gene, genome and how organism's function is influenced at the cell, tissue and organ level.
4. understand adaptation, development and behavior of different forms of life.
5. demonstrate the experimental techniques and methods of their area of specialization in Botany.

Department of Botany

Programme Specific Outcomes

PSO1: Provide knowledge of the medicinal plants of Melghat region to the students and promote them to use them as earning source

PSO2: Motivate the Botany students for exploration of Melghat flora

PSO3: Preserve the rare medicinal plants of the Melghat region

PSO4:Create recognized laboratory for the students of Botany and provide guidance to the research students

PSO5: Create awareness about plant propagation

PSO6: Develop open natural laboratory for the students of Botany

Department of English

PSOs

1. Comprehend various forms of literature like Prose, Poetry, Drama and Fiction
2. Develop the knowledge of grammatical system
3. Develop four language skills LSRW
4. Widen scope of employability and Entrepreneurship viz Teaching, Civil Services and Creative Writing

COs

1. Understand the basic knowledge of English language and literature
2. Understand and interpret prose, poem, short stories
3. Write the News Report, Letter, Essay, Paragraph etc.
4. Avail the pleasure of literary forms such as Novel, Poem, Play etc.
5. Develop interview technique, Reading Skills Writing Skills and Speaking Skills

Arts, Science and Commerce College, Chikhaldara, Distt. Amravati (MS)
Course Outcomes (Cos)

Department of Sociology

Course Outcomes

Course: Introduction to Sociology

By the completion of this course the student will be able to
CO1: learn origin and development of Sociology and its relations with other social science subjects.
CO2: introduce students with various social systems and their utility.
CO3: make students aware of basic social concepts like society, community, groups,etc.
CO4: teach them the importance of socialisation, culture, social control, etc.

Course: Indian Social Structure and Social Problems

By the completion of this course the student will be able to
CO1: introduce students with tribal, rural and civil socities.
CO2: bring primary Indian systems like family, caste, marriage, class to the notice of students.
CO3: make students aware of several social problems, their causes and remedeis thereof.

Course: Social Antropology

By the completion of this course the student will be able to
CO1: introduce students with origin, nature and ambit of Social Anthropology and its relations with other social science branches.
CO2: bring various social systems of tribal community like family, clan, marriage to the notice of students.
CO3: introduce students with tribal economy, faith, religion, magic and their political systems.
CO4: inform srudents about Problems of tribals, reformative programs and various schems addressing their problems.

H. U. Petkar
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Arts,Science & Commerce College,
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SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI

Part B

Syllabus Prescribed for Three Year UG Programme (CBCS)

Programme: B.Sc. with Chemistry

Semester 3

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)
CHE(3S)T	Chemistry 3S	84

COs:

By the end of this course, the students will be able to:

1. apply concepts of volumetric and gravimetric analysis
2. use commercial method for extraction of elements and acquaintance of transition series elements
3. compare functional group chemistry through the study of methods of preparation, properties and chemical reactions with underlying mechanism.
4. select correct synthetic approach to prepare derivatives of industrially important molecules
5. solve different numerical problem of varying difficulty associated with thermodynamics, phase equilibrium and colligative properties.
6. apply the concepts from advanced mathematics to solve the derivation of different chemical formulae.

Unit	Content
Unit I	**A) Volumetric Analysis:** (a) Introduction: -Volumetric analysis, titrant, titrate, end point, equivalence point, indicator etc. Requirements of volumetric analysis. Definition of standard solution, primary standard substance. Requirements of primary standard substance. Terms to express concentrations namely- molarity, normality, molality, mole fraction and percentage. (Simple numerical expected). (b) Acid-Base titrations: - Types of acid base titrations. pH variations during acid base titration. Acid base indicators. Modern theory (Quinoniod theory) of acid base indicators. Choice of suitable indicators for different acid base titrations. (c) Redox Titrations: -General principles involved in redox titrations (redox reactions, redox potentials, oxidant, reductant, oxidation number). Brief idea about use of $KMnO_4$, $K_2Cr_2O_7$ as oxidants in acidic medium in redox titrations. Use of I_2 in iodometry and iodimetry. Redox indicators-external and internal indicators. Use of starch as an indicator. Iodometric estimation of Cu (II). **B) Gravimetric Analysis:** Definition. Theoretical principles underlying various steps involved in gravimetric analysis with reference to estimation of barium as barium sulphate. Coprecipitation and post precipitation. (Definition, types and factors affecting). **Periods: 14**
Unit II	**A) P-Block Elements-**Comparative study of 16^{th} and 17^{th} group elements with reference to electronic configuration, ionization energy and oxidation states. Oxidising properties of halogens with reference to oxidation potential. Interhalogen compounds, structure and bondings. Introduction to fluorocarbons. **B) Chemistry of elements of transition series:** Definition of transition elements. General characteristics of transition elements. Comparative study of first transition series elements (3d) with reference to following properties: (i) Electronic configuration (ii) Atomic and ionic size (iii) Ionization energy (iv) Metallic nature (v) Oxidation states (vi) Magnetic properties (vii) Color of salts (viii) Catalytic properties (ix) Complex formation behaviour. Study of 4d and 5d series elements-Electronic configuration. Comparison of 3d series elements with 4d and 5d series elements with respect to size, oxidation states, magnetic properties and color. **Periods: 14**
Unit III	**A) Aldehydes and Ketones:** Introduction, Structure of carbonyl group, acidity of α hydrogen in carbonyl compounds. Preparation of aldehydes and ketones from appropriate alcohol, dihalide, alkyne.

	Preparation of benzaldehyde from benzene (Gatterman-Koch synthesis/reaction) and toluene. Preparation of acetophenone from benzene and ethyl benzene. **Chemical Reactions:** Reaction with HCN, ROH, $NaHSO_3$, NH_2 groups derivatives. Iodoform test, Reactions of aldehydes & /or ketones: Aldol condensations Reformatsky, Mannich, Perkin, Cannizaro's, Benzoin reaction with mechanism, Knoevenagel, Stobbe, Wittig reaction only. Clemmensen, Wolff-Kishner, MPV and $LiAlH_4$ reductions. **B) Carboxylic acids:** Structure and reactivity of carboxylic groups. Acidity of carboxylic acids, effects of substituents on acids strength. **Oxalic acid**: Preparation from ethylene glycol and cyanogen. Reactions: Reaction with ethyl alcohol, ammonia, glycerol and action of heat. **Lactic acid**: Preparation from acetaldehyde and pyruvic acid. Reactions: Reaction with ethanol, PCl_5, action of heat, oxidation and reduction. **Benzoic acid:** Preparation from toluene, benzyl alcohol, phenyl cyanide and benzamide. Reactions: Reaction with ethanol, PCl_5 and ammonia. **Salicylic acid**: Preparation by Reimer-Tiemann reaction. Reactions: Reaction with CH_3COCl, CH_3OH and C_6H_5OH. Hell- Vohlard -Zelinsky Reaction. **Periods: 14**
Unit IV	**Stereochemistry:** **A) Optical isomerism:** Isomerism, Types of isomerism, Stereoisomerism, Optical isomerism, assymetric carbon atom, Element of symmetry, chirality (up to two carbon atoms), enantiomers, diastereoisomers, meso compounds, configuration, relative and absolute configurations, DL and RS nomenclature (for up to 2 chiral carbon atoms), racemisation and resolution (by chemical method). optical isomerism in allenes and biphenyls. **B) Geometrical isomerism:** Cis-trans & E-Z nomenclature (for up to two C=C systems) with examples and applications. **C) Conformational isomerism:** Conformational isomers, Newman & Sawhorse projection formulae, conformations of ethane, n-butane and cyclohexane, their energy level diagrams. conformation of cyclic systems mono-substituted cyclohexanes. **Periods: 14**
Unit V	**A) Colligative Properties of Dilute Solutions:** Definition and examples of colligative properties. Importance and applications of colligative properties. Elevation of boiling point. Thermodynamic derivation of the relationship between elevation of boiling point and the molar mass of non-volatile solute. Cottrell's method for the determination of elevation of boiling point and hence the molar mass of solute. Depression of freezing point. Thermodynamic derivation of the relationship between depression of freezing point and the molar mass of non-volatile solute. Rast's method for the determination of molar mass of solute. Abnormal behaviour of solution. Van't Hoff's factor 'i'. Determination of degrees of association and degree of dissociation from Van't Hoff's factor. Numerical. **B) Phase rule:** Statement of Phase rule. Explanation of Phase, number of components and degrees of freedom. Application of phase rule to water and sulphur systems. Numerical. **Periods: 14**
Unit VI	**A) Thermodynamics:** First law of Thermodynamics and its limitations, Need of Second law. Carnot's heat engine, derivation of expression for the work done and efficiency of Carnot's engine. Statements of Second law of thermodynamics. Concept of Entropy, Physical significance of Entropy, Derivation of expression for the Entropy change for an ideal gas in terms of pressure, temperature and volume. Entropy change for an ideal gas for isothermal, isoberic and isochoric processes, Entropy of fusion, sublimation, vapourization, transition and its calculations. Entropy change for reversible and irreversible processes. Entropy change as a criteria for spontaneity. Numerical. **(B) Phase Equilibrium:** Raoult's Law and it's limitations. Ideal and non-ideal solution. Classification of binary solutions of completely miscible liquids (I, II and III) on the basis of Raoult's Law. Phase diagrams of Phenol-Water, Triethylamine-Water and Nicotine-Water system. Nernst distribution law and its applications to association and dissociation of solute in one of the immiscible solvents. Process of extraction. Derivation of the formula for the amounts of the solute left unextracted after nth extraction. Numerical. **Periods: 14**
***SEM:** A) Appropriate use of chemicals and glassware for determination of concentration, Applications of p-block and transition series elements	

B) Preparation of charts for organic reactions of aldehydes, ketones, and carboxylic acids, Model creation and drawings for different stereoisomers. C) Numerical associated with colligative properties and thermodynamics, Applications of laws of thermodynamics and phase equilibrium,	
COs: By the end of this module, the students will be able to: 1. Create models associated with stereochemistry 2. Use aldehydes, ketones and carboxylic acids as starting material for different commercially important molecules 3. Solve numerical problem associated with thermodynamics and colligative properties.	
**Activities:	Model creation, poster, chart preparation, memory maps, class tests, assignments, project, survey, group discussion, industrial visit, or any other innovative pedagogical method. Any two activities be conducted from above. Class tests are compulsory. Equal weightage for each activity.

Course Material/Learning Resources

Text books:

1. Text book of Inorganic Chemistry by K.N. Upadhyaya, Vikas Publishing House, Delhi.
2. A Text Book of Chemistry for third Semester of B.Sc. by AUCTA Association and DnyanPath Publication

Reference Books:

1. Principles of Inorganic Chemistry by Puri, Sharma and Kalia- S. Naginchand & Co., Delhi.
2. Inorganic Chemistry by A.K. De, Wiley East Ltd.
3. Selected Topics in Inorganic Chemistry by Malik, Tuli and Madan, S. Chand & Co.
4. Concise Inorganic Chemistry by J.D. Lee, ELBS.
5. Inorganic Chemistry by J.E. Huheey- and Kettle, Harper & Row.
6. Advanced Inorganic Chemistry, Vol-I, Satya Prakash, Madan, Tuli, Basu.
7. Organic Chemistry Vol. I, II and III by Mukharjee, Singh and Kapoor- Wiley Eastern.
8. Organic Chemistry by S.K. Ghosh.
9. Reaction Mechanism in Organic Chemistry by S.M. Mukharjee and S.P. Singh.
10. Stereochemistry and mechanism through solved problems by P.S. Kalsi.
11. Organic Chemistry by TWG Solomons, 8th edition, John Wiley
12. Organic chemistry by R. K. Bansal
13. Physical Chemistry: Walter, J. Moore, 5th edn., New Delhi.
14. Physical Chemistry: G.M. Barrow, McGraw Hill, Indian Edn.
15. Principles of Physical Chemistry: Maron and Prutton.
16. Principles of Physical Chemistry: Puri, Sharma, and Pathania.
17. Physical Chemistry: P.W. Atkins, 6th Edn.
18. Physical Chemistry: Levine
19. Practical Organic Chemistry by F.G. Mann, B.C. Saunders, Orient Longman.
20. Comparative Practical Organic Chemistry (Qualitative Analysis) by V.K. Ahluwalia and Sunita Dhingra, Orient Longman.

21. Comprehensive Practical Organic Chemistry (Preparation and Qualitative Analysis) by V.K. Ahluwalia and Renu Agrawal, Orient Longman.

22. Practical Physical Chemistry: Palit and De.

23. Practical Physical Chemistry: Yadao.

24. Practical Physical Chemistry: Khosla.

25. Advanced Practical Inorganic Chemistry by Gurdeep Raj, Goel Pulishing House, Meerut.

Weblink to Equivalent MOOC on SWAYAM if relevant:

Weblink to Equivalent Virtual Lab if relevant:

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

Sant Gadge Baba Amravati University, Amravati

Syllabus Prescribed for three Year UG/PG Programme

Programme: B.Sc. with Chemistry

Semester 3

Code of the Course/Subject	Title of the Course/Subject (Laboratory/Practical/practicum/hands-on/Activity)	(No. of Periods/Week)
CHE(3S)PR	Chemistry 3S	Total 26 per Semester

COs: At the end of Lab/Practical course, students will be able to -

1. estimate different metals using a variety of methods.
2. skilfully prepare solution of different concentrations.
3. determine molecular weight of an organic molecule.
4. determine thermodynamic parameters associated with a physical phenomenon and state.
5. use methods of determination of partition coefficient.

*** List of Practical/Laboratory Experiments/Activities etc.**

	Exercise-1 Inorganic
1	Estimation of Ba^{2+} as $BaSO_4$.
2	Estimation of Fe^{3+} as Fe_2O_3 using china and silica crucible.
3	Estimation of Ni^{2+} as Ni-DMG using sintered glass crucible.
4	Estimation of copper (II) in commercial copper sulphate sample by iodometric titration.
5	To determine the percentage of calcium carbonate in precipitated chalk.
6	To determine volumetrically the amounts of sodium carbonate and sodium hydroxide present together in the given solution
7	Preparation of standard solution of an acid (oxalic acid) & a base (sodium bicarbonate) by weighing and calculation of concentrations in terms of strength, normality, molarity, molality, formality, % by weight, % by volume , ppm, ppb and mole fraction.
8	Preparation of standard solution of hydrochloric acid by dilution and calculation of concentrations in terms of strength, normality, molarity, molality, formality, % by weight, % by volume , ppm, ppb and mole fraction.

	Exercise II: Physical Chemistry Experiments
9	Determination of molecular weight of solute by Rast's method
10	To determine activation energy of a reaction between $K_2S_2O_8$ and KI.
11	Determination of thermodynamic values (ΔS°, ΔH°, and ΔG°) from the dissociation of a weak acid.
12	To determine transition temperature of $MnCl_2.4H_2O$.
13	To study critical solution temperature (CST) of phenol water system.
14	To determine the partition coefficient of CH_3COOH between H_2O and CCl_4
15	To determine the partition coefficient of Benzoic acid between H_2O and toluene.

Note:

Distribution of Marks for Practical Examination

Time : 04 hours (One Day Examination)

Total Practical Marks 50, Duration of Exam 04 Hours	
Internal Practical Exam (25 Marks)	**External Practical Exam* (25 Marks)**
Attendance, Students Performance, Activity, Practical Record Book / Laboratory Manual/Journal Report : 20 Internal Viva/Assignment/Quiz/Test : 05	Experiment 1 Performance / Demonstration : 10 Experiment 2 Performance / Demonstration : 10 External Viva (by External and Internal Examiner: 05
Total : 25	**Total : 25**

*Note: One practical from respective exercise

Part B

Syllabus Prescribed for Three Year UG/PG Programme

Programme: B.Sc. with Chemistry

Semester 4

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)
CHE(4S)T	Chemistry 4S	84

COs: By the end of this course, the students will be able to:

1. Application of methods of synthesis of soaps and detergents
2. Commercial method for extraction of elements and acquaintance of transition series elements
3. Compare functional group chemistry through the study of methods of preparation, properties and chemical reactions with underlying mechanism.
4. Choose correct synthetic approach to prepare derivatives of industrially important molecules
5. Solve different numerical problem of varying difficulty associated with electrochemistry and photochemistry.
6. Apply the concepts of UV and IR spectroscopy for structure elucidation.

Unit	Content
Unit I	**A) Noble Gases-**Inertness of noble gases. Compounds of noble gases-only structure and bonding in XeF2, XeF4, XeF6, XeO3, and XeO. **B) Polarisation-**Definition, polarising power, polarizability, effect of polarization on nature of bond. Fajan's rules of polarisation and its applications. **B) General Principles of Metallurgy:** Definition of metallurgy, steps in metallurgy. Ore dressing by gravity separation, froth floatation and electromagnetic separation. Calcination, roasting, smelting and refining of metals. Meaning of terms hydrometallurgy and pyrometallurgy. **Periods: 14**
Unit II	**A) Inner transition elements:** Definition, Lanthanides and Actinides. Comparative study of Lanthanides with respect to following properties:(i) Electronic configuration (ii) Atomic and ionic radii lanthanide contraction-definition, cause and effect of lanthanide contraction (iii) Oxidation states (iv) Magnetic properties (v) Colour of salts (vi) Complex formation behaviour. Occurrence of lanthanides. Isolation of lanthanides by ion exchange method. Actinides- Electronic configuration and oxidation states. Comparison of lanthanides and actinides. **B) Extraction of elements:** Principles involved in extraction of elements. Major methods of extraction of elements. Factors affecting choice of extraction method. Thermodynamics of reduction processes-Ellingham diagrams for oxides and importance of this diagram (only preliminary ideas). **Periods: 14**
Unit III	**A) Soaps and Detergents** **Soaps: -**Introduction, Manufacture of soaps by i)Kettles process, ii) Hydrolyser process, Cleansing action of soap. **Synthetic Detergents: -**Introduction, Synthetic detergent classification, i)Anionic detergent, ii) Cationic detergents, iii) Non-ionic detergents. Synthetic detergent versus soaps, Soft versus Hard detergents. **B) Reactive methylene compounds:** Malonic Ester: Synthesis from acetic acid, Synthetic applications-Synthesis of acetic acid, succinic acid, glutaric acid, crotonic acid and malonyl urea. Acetoacetic ester: Synthesis from ethyl acetate, Synthetic applications- Synthesis of acetic acid, propionic acid, isobutyric acid, succinic acid, glutaric acid, crotonic acid, acetyl acetone and 4-methyl uracil. **C) Carbohydrates:** Constitution of glucose, cyclic structure, Pyranose and Furanose structure, Epimerization, conversion of glucose to fructose and vice-versa, Introduction to fructose, ribose, 2-deoxyribose, maltose, sucrose. (their structures only- determination not needed).

	Periods: 14
Unit IV	**A) Aromatic nitro compounds:** Nitrobenzene: Synthesis from benzene, Reduction of nitrobenzene in acidic, neutral and alkaline medium. **B) Amino Compounds:** Basicity and effect of substituents. Methods of preparation of aniline from nitrobenzene, Reactions: with acetyl and benzoyl chlorides, Br_2 (aq) and $Br_2(CS_2)$, Carbylamine reaction, alkylation, Hoffmann's exhaustive methylation and its mechanism. **C) Diazonium Salts:** Preparation benzene diazonium chloride, Synthetic applications- Preparation of benzene, phenol, halobenzene, nitrobenzene, benzonitrile, coupling with phenol and aniline. **D) Amino acids and Proteins:** Classification, Strecker and Gabriel phthalimide synthesis, Zwitterion structure, Isoelectric point, peptide synthesis, Structure determination of polypeptides by end group analysis. **Periods: 14**
Unit V	**A) Electrochemistry -I:** Conductance of electrolyte solution. Specific, equivalent and molar conductance. Determination of conductance of electrolyte solution, variation of specific and equivalent conductance with dilution for strong electrolyte. Conductometric titrations. Applications of conductometric titration. Migration of ions under the influence of electric field. Transport number of ions. Determination of transport number by Hottorf's method and Moving boundary method. Kohlrausch's law of independent migration of ions. Determination of ⅄ and degree of dissociation a of a weak electrolyte. Determination of dissociation constant of weak electrolyte. Numerical. **B) Electrochemistry-II** pH of a solution and pH scale. Determination of pH of solution using Hydrogen, Quinhydrone and Glass electrodes. Advantages and Disadvantages of these electrodes. pH metric titrations. Determination of pKa of a weak acid by pH metric titration. Potentiometric titration. Advantages of Potentiometric titrations. Study of following potentiometric titrations- (a) Acid-Base (b) Redox (c) Precipitation. Numerical. **Periods: 14**
Unit VI	**Photochemistry:** Photochemical and thermal reactions. Lambert's law (Statement and derivation). Beer's law (Statement and derivation). Reasons for deviations from Beer's law. Laws of photochemistry- Grotthus-Draper law, Stark-Einstein law. Quantum yield of photochemical reaction. Reasons for high and low quantum yields. Experimental determination of quantum yield. Photosensitized reactions. Kinetics of photochemical decomposition of HI. Fluorescence and Phosphorescence. Selection rule for electronic transitions. Internal conversion and Intersystem crossing. Explanation of Fluorescence and Phosphorescence on the basis of Joblonski Diagram. Chemiluminescence and Bioluminescence (with examples). Numerical. **Periods: 14**
***SEM:** A) Extraction of metals, synthesis of soaps and detergents. B) Applications of nitrogen-based compounds and groups as starting materials for commercial compounds C) Numerical associated with electrochemistry and photochemistry.	
COs: By the end of this module, the students will be able to: 1. Create charts and posters for nitrogen-based compounds and groups 2. Use of carbonyl compounds for starting material for different commercially important molecules 3. Solve numerical problem associated with thermodynamics and colligative properties.	
**Activities:	Model creation, poster, chart preparation, memory maps, Class tests, assignments, project, survey, group discussion, industrial visit, or any other innovative pedagogical method. Any two activities be conducted from above. Class tests are compulsory. Equal weightage for each activity.

Sant Gadge Baba Amravati University, Amravati

Syllabus Prescribed for three Year UG/PG Programme

Programme: B.Sc. with Chemistry

Semester 4

Code of the Course/Subject	Title of the Course/Subject (Laboratory/Practical/practicum/hands-on/Activity)	(No. of Periods/Week)
CHE(4S)PR	Chemistry 4S	Total 26 per Semester

COs: At the end of Lab/Practical course, students will be able to -

1. prepare soap from available oil or fat and determine its different parameters.
2. extract different constituents of milk.
3. prepare glucose from cane sugar
4. use advanced instruments like pH-meter, potentiometer, conductometer, etc.
5. determine electrode potential of a metal.
6. determine pH of given soil sample.

*** List of Practical/Laboratory Experiments/Activities etc.**

	Exercise-1 organic
1	To prepare glucose from cane sugar.
2	To determine the iodine value of the given Oil or Fat.
3	Determination of equivalent weight of an organic acid.
4	Determination of equivalent weight of an ester by saponification.
5	Preparation of soap from oil or fat.
6	Determination of properties of soaps (at least two samples) with respect to pH, Foam, interaction with oil, and hard water test.
7	Isolation of casein from milk.
8	Isolation of lactose from milk.
	Exercise II: Physical Chemistry Experiments
9	Determination of standard electrode potential of Cu/Cu^{+2} or Zn/Zn^{+2} electrodes potentiometrically.
10	To determine dissociation constant of weak acid by conductometry.
11	To determine dissociation constant of weak acid by potentiometry.
12	To determine dissociation constant of dibasic acid by pH-metry.
13	To determine solubility and solubility product of sparingly soluble salts conductometrically.
14	To study strong acid and strong base titration by pH-metry.
15	To determine pH of a soil sample by pH-meter.
16	To verify Beer's Lambart's law using $KMnO_4/K_2Cr_2O_7$.
17	To determine solubility of benzoic acid at different temperature and heat of solution.

Note:

Distribution of Marks for Practical Examination

Time : 04 hours (One Day Examination)

Total Practical Marks 50, Duration of Exam 04 Hours	
Internal Practical Exam (25 Marks)	**External Practical Exam* (25 Marks)**

Attendance, Students' Performance, Activity, Practical Record Book / Laboratory Manual/Journal Report : 20 Internal Viva/Assignment/Quiz/Test : 05	Experiment 1 Performance / Demonstration : 10 Experiment 2 Performance / Demonstration : 10 External Viva (by External and Internal Examiner: 05
Total : 25	**Total :** 25

*Note: One practical from respective exercise

Arts, Science and Commerce College, Chikhaldara
Course Outcomes (COS)

Department of Computer Science

B.Sc.I (Semester-I)

Course Name: Fundamentals of Computer and C Programming
COs
Upon completion of this course successfully, Students would be able to -
1. Understand the computer, I/O and peripheral devices.
2. Understand concept of Operating systems.
3. Apply the Programming concepts.
4. Learn C language.
5. Write Simple C Programs

Course Name: Fundamentals of Computer and C Programming lab
COs
Upon completion of this course successfully, Students would be able to demonstrate/perform/accomplish the following
1. Write word processing task.
2. Create worksheet and perform operations on it.
3. Design, compile and debug programs in C language.
4. Classify conditional expressions and looping statement to solve problems associated with conditions and repetitions.
5. Demonstrate the programs using arithmetic and relational operators.
6. Implement the concept of various string handling functions.
7. Classify programming components that efficiently solve computing problems in real-world.

B.Sc. I Semester – II

Course Name: Data Structure and OOPS
COs
Upon completion of this course successfully, Students would be able to -
1. Implement basic data structures such as arrays, stacks.
2. use linked list, trees and queues.
3. Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data.
4. Describe the procedural and object-oriented paradigm with concepts of streams, classes, functions, data and objects.
5. Perform programming on functions, inline functions, constructor and destructor.
6. Perform programming on the concept of function overloading, operator overloading, virtual functions and polymorphism.

Course name: Data Structure and OOPs lab
COs

Upon completion of this course successfully, Students would be able to demonstrate/perform/accomplish the following

1. Perform various operations Data structure using CPP.
2. Develop the concept of dynamic memory allocation through linked list.
3. Design stack and queue with contiguous and non-contiguous data storage mechanism.
4. Perform the various operations on binary tree.
5. Implement sorting on 1-D array using different techniques.

B.Sc. II (Semester III)

Course name:- Networking and Web Technology
COs: On completion of course, the students will be able to
1. Understand Internet and Networking
2. Understand the fundamentals of data communication, networking, internet and their importance.
3. Understand different networking topologies
4. Describe the seven layer OSI model with data transmission media
5. Understanding Switching and Multiplexing techniques

Course name:- Networking and Web Technology
Cos:-
1. Get familiar with Internet and its uses.
2. Able to Create and send email with attachments.
3. Prepare HTML documents.
4. Able to write code for webpage.
5. Able to write CSS.

B.Sc. II (Semester-IV)

Course name:- RDBMS and Core Java
Course Outcomes:
1. Understanding basics concepts of DBMS
2. Demonstrating SQL commands
3. Demonstrating PL/SQL concepts
4.Writing basic java programs using basics features of Java programming language/
5. Demonstrating concepts of OOP's using classes, Inheritance, Interfaces etc

Course name:- RDBMS and Core Java(lab)
Course Outcomes:-
1. Get familiar with Relational Database.
2. Able to create various Relational Database and Operations over it.
3. Prepare queries by using inbuilt functions.

4. Able to write programs.
5. Able to write multithreaded programs.
6. Able Develop reusable programs using the concepts of inheritance, interfaces.

B.Sc. III (Semester V)

Course name:- .Net Technology Java Programming

Cos:- By the completion of this course the student will be able to

CO1. Able to write programs.

CO2. Writing basic java programs using basics features of Java Programming language.

CO2.Understand the multithreaded programs.

CO3. Understand basics of Visual Basic to get knowledge of Event Driven Programming.

CO4: Create Menu Driven Programs in Visual Basic.

CO5: Understand Internal Functions in Visual Basic.

B.Sc. III (Semester VI)

Course name:- Advanced java and VB.Net

COs:- By the completion of this course the student will be able to

CO1.Writing advance java programs using the concept of Exception handling.

CO2. Able to write advance java programs.

CO3.Understand different aspects of Visual Basic like, Dialog box controls, Forms and File Handling.

CO4: Program with different programming languages effectively in languages like Visual Basic and as backend tool like Oracle.

CO5: Proficient in problem solving using different programming languages.

Sant Gadge Baba Amravati University, Amravati

Faculty: Science & Technology

Programme

B.Sc. with Industrial Chemistry

(POs, PSOs, COs)

POs: At the time of graduation, Students would be able to

PO1.Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

PO2.Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

PO3. Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.

PO4. Effective Citizenship: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO5. Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

PO6. Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.

PO7. Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes

PSOs: By the end of this program, students would be able to:

1. Understand the scope, methodology and application of industrial chemistry.

2. apply theoretical and practical concepts of instruments, which are commonly used in the field of industrial chemistry.

3. Plan and conduct scientific experiments and record the results of such experiments.

4. Get acquainted with heat and mass transfer, stoichiometry, unit operations, catalysis, fuels, fluid mechanics, unit processes and process equipment's, chemicals manufacturing industries, pollution and management, safety, green chemistry, instrumental methods of chemical analysis etc.

5. Use industrial chemistry to solve social, economic and environmental problems and issues facing our society in energy, health etc.

UG Programme Programme: B.Sc. in Industrial Chemistry Semester -1

COs By the end of the course, the student would be able to:

1. Apply material balance equations and solve associated numerical problems of some important unit operations.

2. Solve the numerical problems on stoichiometry, mole concepts and unit conversions.

3. Describe the conventional and nonconventional energy sources and calculate heat of reactions.

4. Analyse the different types of fuels.

5. Apply the knowledge gained by studying the components of heat transfer, energy sources and fluid mechanics.

COs: By the end of the Lab/Practical Course, generally students would be able to:

1. Prepare standard chemical solutions of different concentrations.

2. Identify and calculate the viscosity of a lubricant, moisture and ash content in a coal sample, flash, fire and aniline point of a fuel sample and infer the methodology in analytical work.

3. Illustrate the practical skills in the volumetric and instrumental analysis and plan projects.

4. Develop an understanding of how to follow lab procedures safely and develop, construct, solve and interpret the experimental data.

5. Define the methodologies and calculations to produce useful materials or devices.

6. Implement and build experimental processes logically in research and training programs.

7. Perform stoichiometric calculations and interconversion of units.

UG Programme Programme: B.Sc. in Industrial Chemistry Semester -2

COs By the end of course, student would be able to:

1. Apply the knowledge gained by studying unit operations like distillation, evaporation, extraction, leaching, crystallization, and drying.

2. Choose the correct mechanical separation techniques like size reduction, screening, mixing, and agitation.

3. Solve the conceptual questions by acquiring the knowledge of colloidal systems and their preparation and properties.

4. Apply the concept of catalysis.

COs: At the end of Lab/Practical course, students would be able to –

1. Identify and calculate critical moisture content in given coal samples, amount of oil in oil seeds and infer the methodology in analytical work.

2. Investigate some unit operations like crystallization, extraction, distillation etc. and the phenomena like adsorption, coagulation etc.

3. Illustrate the practical skills in the volumetric and instrumental analysis and plan projects.

4. Develop an understanding of how to follow lab procedures safely and develop, construct, solve and interpret the experimental data.

5. Define the methodologies and calculations to produce useful materials or devices. 6. Implement and build experimental processes logically in research & training programs.

UG Programme Programme: B.Sc. in Industrial Chemistry Semester -3

COs By the end of the course, the student will be able to:

1.Differentiate between Batch wise and Continuous Industrial Processes.

2.Identify various nitrating agents, Sulphonating agents, Halogenating agents, Oxidizing agents, and their activities,

3.Compair Various organic Processes.

4.Identify uses and mechanism of various industrial equipments.

5.Aware about hazards of Biomedical waste and its management

6.Apply basic concepts to prevent corrosion.

COs: By the end of the laboratory/Practical Course students will able to

1. Estimate the component gravimetrically.

2. Synthesis various organic Compounds.

3. Understand the various organic processes.

4. Understand the mechanism of the organic processes

UG Programme Programme: B.Sc. in Industrial Chemistry Semester -4

COs By the end of course, student will be able to:

1.Understand the industrial processes of manufacturing of ceramics, glass and refractories.

2. Understand the mechanism of setting and hardening of cement.

3.Compare various industrial polymers and their industrial uses.

4. Identify various sources of water pollution and its prevention.

5. Find out root causes air pollution its prevention.

COs: By the end of the laboratory/Practical Course students will able to

1. Apply basic concepts to determine temporary hardness of water.

2. Estimate component gravimetrically.

3. To prepare various polymers.

UG Programme Programme: B.Sc.III Industrial Chemistry Semester -5 & 6

Arts, Science and Commerce College, Chikhaldara, Distt. Amravati (MS)
Programme Specific Outcomes (PSOs)

Department of Industrial Chemistry

Programme Specific Outcomes

Programme Specific Outcomes

PSO1: Make the students well-grounded in the principles and through knowledge of scientific techniques of Industrial Chemistry

PSO2: Educate and train Chemists to acquire a meaningful picture of Chemical industries

PSO3: Prepare students for professional participation in Chemical industries so as to adapt themselves to jobs which are problem solving

PSO4: Train students to be result-oriented in the chemical, petrochemical, biochemical, allied technological fields

PSO5: Environmental and Sustainability: Understand the issue of environmental context and sustainable development

Arts, Science and Commerce College, Chikhaldara, Distt. Amravati (MS)
Course Outcomes (Cos)

Department of Industrial Chemistry

Course Outcomes

Course: Mole Concept, Material Balance, Energy Balance, Fluid Mechanics, Fuel

By the completion of this course the student will be able to
CO1: Know about basic of dimension and units.
CO2: Difference between fundamental and derived quantities.
CO3: Solving the numerical problems on mole concept, material balance of chemical and non-chemical.
CO4: Explain the classification of fuel.
CO5: Describe the solid fuel as types of coal ,coal formation and coal analysis.
CO6: Understand Manufacture process processes of different product and uses from coal.
CO7: Explain the origin and classification of liquid fuel as petroleum.
CO8: Process of distillation of crude oil and uses of products.
CO9: Understand the mining of petroleum.
CO10: Understand the fundamentals & different laws of heat transfer.
CO11: Concepts of heat conduction, general heat conduction equation.
CO12: Understand classification of heat exchanger utilize in chemical industries.
CO13: Define fluid mechanics with types of fluid flow.
CO14:State and explain of equation of continuity Bernoulli's equation.
CO15: Describe the construction and working and uses of pumps, flow-meter for measuring flow-rate of fluid..

Course: Unit Operations, surface chemistry & Catalysis

By the completion of this course the student will be able to
CO1: Knows basic of unit operations actual working in chemical industries.
CO2: Different unit operation like distillation, evaporation, extraction, leaching, crystallization, drying, size reduction, mechanical separations, mixing.
CO3: Study about surface chemistry and catalysis; mechanism, applications,types.

Course: Unit processes and Process Equipments By the completion of this course the student will be able to

CO1: Utilization of unit process for organic synthesis by Nitration, Amination by reduction,Alkylation,sulphonation,halogenations,hydrolysis,oxidation,esrification.
CO2: Understand the measurements of different parameters in chemical industries.
CO3: Explain types of corrosion arises in chemical industries and its control by various method.
CO4: Use of laboratory techniques for preparations of organic product.

Course: Material Science and Industrial Pollution

By the completion of this course the student will be able to
CO1: Manufacture of ceramic, refractory's, glasses, cement, polymers with its properties and applications.
CO2: Understand water quality parameters, organic& inorganic pollutants as water pollution due to industrial effluents.
CO3: Know about the waste water treatment by primary, secondary, tertiary treatments methods.
CO4: Explain air pollution with classification and industries as source of pollution with its control methods.

Course: Chemical Process Economics, Heavy and Fine Chemicals

By the completion of this course the student will be able to By the completion of this course the student will be able to
CO1:Manufacture process with raw materials, consumption patterns, major engineering problems arises in production.
CO2: Study of essential oil with extraction methods ,its types, uses.
CO3: Explain and understand manufacture of Soya-bean oil ,refining of crude oil with its analysis.
CO4: Manufacture process of industrial gases with its uses.
CO5: Study of industrial safety measures.
CO6: In process economics included with Cost estimation, interest, depreciation, profitability of industries.

Course: Instrumental Methods of Chemical Analysis, Green Chemistry

By the completion of this course the student will be able to
CO1: Introduction and sampling of materials.
CO2: Study of Instrumental Methods of Chemical Analysis Chromatography with paper, GLC, column, ion- exchange, solvent extraction.
CO3: Study of dyes types, preparation & applications.
CO4: Goals of green chemistry, principle.
CO5: Basic components of green chemistry.
CO6: Principle, techniques, instrumentation & applications of Flame photometer, I. R. Spectroscopy and X-ray fluorescence.

Arts, Science and Commerce College, Chikhaldara, Distt. Amravati (MS)
Programme Outcomes (POs), Programme Specific Outcomes (PSOs)
and Course Outcomes (Cos)

Bachelor of Commerce

Programme Outcomes

PO1: To build conceptual foundation and application skills in the areas of Accountancy, Finance, Management, research and higher education
PO2: To sharpen the students analytical and decision making skills
PO3: To provide the students with a unique ability to manage accounts, peopleand organizations across the world with a combination of B.Com Degree
PO4: To build life skills through value based education and service oriented programs
PO5: To provide the students a competitive edge in the job market by equipping them with financial and management accounting techniques covering the technical areas that accountants are required to master

Programme Specific Outcomes

Principles of Business Organization/ Principles of Business Management

PSO1:	Identify major business functions of accounting, finance, information systems, management, and marketing
PSO2:	Describe the relationships of social responsibility, ethics, and law in business
PSO3:	Explain forms of ownership, including their advantages and disadvantages
PSO4:	Identify and explain the domestic and international considerations for todays business environment
PSO5:	Identify and explain the role and effect ofgovernment on business
PSO6:	Describe the importance and effects of ethical practices in business and be able to Analyze business situations to identify ethical dilemmas and ethical lapses
PSO7:	Explain the banking and financial systems, including the securities

Monitory System and Indian Financial System

PSO1: Identify the principles behind the workings of the financialsystem
PSO2: Demonstrate knowledge about the evolution of financial markets and various credit instruments; and the evolution of money andits functions
PSO3: Analyze the operations of equity and debt (bond) markets including interest- rate movements
PSO4: Demonstrate an understanding of the history, evolution, structure, operations and regulation of modern central banking and financial systems together with the design and conduct of monetary policy, with particular focus on the Asia-Pacific
PSO5: Demonstrate an understanding of the principles of modern commercial banking and operational issues within a globalised economic system

Accounting

PSO1: Introduction to the real/ practical way of Accountancy.
PSO2: To enable students with computerized accounting skills through MS-Excel and Tally to bring out a good Book-keeper in them.
PSO3: Trying to bring out a good accountant.
PSO4: Students should be able to find out the profitability of the business, cost efficiency
PSO5: Explain the basic nature of a joint stock company as a form of business organization and the various kinds of companies based on liability of their members
PSO6: Describe the types of shares issued by a company; explain the accounting treatment of shares issued at par, at premium and atdiscount including over subscription.
PSO7: Outline the accounting for forfeiture of shares and reissue offorfeited shares under varying situations.

Economics

PSO1: Use Supply and Demand curves to analyze the impact of Taxes etc. on consumer surplus and market efficiency
PSO2: Apply the concept ofopportunity cost
PSO3: Employ marginal analysis for decision making
PSO4: Analyze operation of market under varying competitive conditions
PSO5: Analyze causes and consequences of on employment inflection andgrowth
Business Environment:
PSO6: Imparting them the specific knowledge of BusinessEnvironment
PSO7: Analyze the political, social, economical, technological and other configurations that supports cross-border trade
PSO8: Apply an understanding of the nature of the multinational firm as institutional structure for the conduct of the cross-border trade and investment
PSO9: Analyze the key decisions that multinational firms make in relation to the choice of markets and entry strategies

Statistics

PSO1: Mathematical knowledge to analyze and solve problems
PSO2:Statisticalreasoningand inferential methods, modeling and itslimitations
PSO3: interpreting and communicating the result of a statisticalanalysis
PSO4:Dataanalysisusingstatisticalcomputingtools and softwarePSO5:Enhancingconfidencethroughproblem- solving method

Computer and Information Technology

PSO1: Study the history of the discipline of computer and understand the conceptsof the subject
PSO2: Understand the nature of the software development process, including theneed to provide appropriate documentation
PSO3: Understand the working of computers, networking and programminglanguages
PSO4: Analysis of different functions, syntaxes, flow and types of programming languages and be able to program fluently in one or two programming languages
PSO5: Understand standard techniques for solving a problem on a computer, Including programing techniques and techniques for the representation of information
PSO6: Explore the ways of programming with different logic than traditional Ways
PSO7: Designing WebPages using scripting languages like HTML,CSS and XML
PSO8: Understanding databases and operating it with SQL andPL/SQL

Business Regulatory Framework and Company Law

PSO1: Critically review the Indian legal system and institution relevant to commercials actors and advisors and argue its relevance in managing contemporary business organizations
PSO2: Critically examine the general areas of contact and corporate law andregulation encountered by commercial in local and global settings
PSO3: Comment on the impact of political, economic and technological factorscontributing to Income Tax and Audit:
PSO4: Provide basic knowledge of Income Tax and Audit
PSO5: Introduction to the real or practical field of Income Tax andAudit
PSO6: Make a good Tax Consultant or an Auditor

Essentials of E-Commerce

PSO1: Analyzing the impact of e-commerce on business models and strategyPSO2: Recognize and discuss global E-commerce issues
PSO3: Assess electronic payment systems
PSO4: Growth in entrepreneurship skill of the students

B.Com I- Semester I:-

Course outcomes

Course: Principles of BusinessOrganization

On successful completion of this course students will be able to

CO1: Study the forms of business organization and understand the basic concepts and recent trends in commerce, Trade & business practices.Understand the functioning of trade associations and study the industrialization.

CO2: Explain the concept of e-commerce, online booking systems, online booking procedure of railways, airlines, tourist and religious places, hotels and entertainment industry, make students familiar with the mechanism of conducting business transactions through electronic media understand the methodology of online business dealings using e-commerce infrastructure.

CO3: Understand the co-operation to study the concept and principles of co- operation, study the various types of cooperatives in India.

CO4: Explain forms of ownership, including their advantages and disadvantages, identify and explain the domestic and international considerations for today's business environment: social, economic, legal, ethical, technological, competitive, and international and identify and explain the role and effect of government on business.

Course: Advanced Accountancy (ADV)

CO-1- Student would learn the Basics of Advanced Accountancy & record Accounting Transactions in Journal, Ledger Posting, Prepare Trial- Balance andRectify the Errors if any.

CO-2- Student would learn to keep various types of Subsidiary Books like Purchase Book,Sales Book etc. and maintain Various Types of Cash Book.

CO-3- Student would learn to prepare Final Accounts of Individuals.

CO-4. Student would Learn Various Methods of Depreciation and Solve Problems on-Straight line Method and Reducing Balance Method.

CO-5. Student would be able to prepare all types of Bank Reconciliation Statements.In and all Trying to bring out a good Accountant within themselves.

CO- 6. The student should be able to find out the profitability of the business, costefficiency.

Course: Computer Fundamentals and Operating System-I:-

CO-1- Understand basic concepts and terminology of information technology and havea basic understanding of personal computer.

CO-2- Acquire knowledge about generation of computers and types of computers and knowledge of hardware/software methods and tools.

CO-3- Know about different versions in windows operating system and understandtypes of operating system and booting process.

CO-4- Learn types of virus and how to protect the data from virus. Identify uses of spreadsheets in accounting application.

CO-5-Understand the applications of power point presentation and types of slides.

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Course: Principles of Business Economics

CO1:Describe and explain how micro economics models can be used to consider fundamental economics choices of households and firms.
CO2: Describe and explain how macroeconomics models can be used to analyses theeconomy as a whole.
CO3: Describe and explain how Government policy influences microeconomicsoutcomes.
CO4: Interpret and use economic models diagrams and tables, use them to analyseseconomic situation.
CO5: Be able to evaluate the effects of Law of Demand, Law of VariableProportion.

B. ComI Semester II

Course: Computer Fundamentals and Operating System

CO-1- Operating System Basics: Introduction, Main Functions, Structure, Types. Concepts of Popular Operating Systems: MS DOS, WINDOWS, UNIX, LINUX, MACINTOSH. Window 7: Introduction, Features, Types and Elements of Windows.
CO-2- Operating System [Advance]: Program and Features: Installing and uninstalling various programs, accessories. Functions of OS- Management of CPU, File, I/O Device, Data, Security.
CO-3- Modern communications: FAX, Voice mail, E-Mail, Teleconferencing, Video conferencing,
File exchange; Bandwidth; Modem; Network Topologies, types and Architecture.
CO-4- Word Processing working with Table and Graphics: [MS-WORD 2007] Procedure and Application of Mail Merge.
CO-5- PowerPoint Presentation: Working with MS-PowerPoint 2007: Concept ofPresentation, MS-PowerPoint Screen.

Course: Principles of BusinessManagement

CO1: Discuss and communicate the management evolution and how it will affect future managers, Observe and evaluate the influence of historical forces on the current practice of management and Identify strengths, weaknesses, opportunities, and threats of information technology for businesses.
CO2: Practice the process of management's four functions: planning, organizing, leading, and controlling, Identify and properly use vocabularies within the field of management to articulate one's own position on a specific management issue and communicate effectively with varied audiences.
CO3: Explain how organizations adapt to announce certain environment and identify techniques managers use to influence and control the internalenvironment.
CO4: Evaluate leadership styles to anticipate the consequences ofeach leadership style.
CO5: Gather and analyze both qualitative and quantitative information to isolate issues and formulate best control methods.

Course: Financial Accounting (FAC)

CO-1. Students would be able to prepare Accounts of Non-Trading Institutions.CO-2. Students would be able to prepare Accounts of Co-operative Societies.
CO-3. Students would be able to prepare Accounts of AgricultureFarms.
CO-4.Studentswouldbe able to prepare Accounts of Hire purchases and Installment purchase.
CO-5. Student would be able to understand Law`s of Insolvency and prepare accounts of Insolvency of Individuals.

Course: BusinessEconomics

CO1: Be familiar with introductory canonical models of consumer and macroeconomy. CO2: Have a basic understanding of the operation of a modern economy.
CO3: Be able to evaluate the effects of Government interventions in individualmarkets and in the macroeconomy.
CO4: Analyze operation of markets under varying competitivecondition. CO5: Analyze operation of factor pricing.

B.Com II Semester III

Course: Company Accounting

CO1:	This course shall enable the students to develop awareness and train themin Corporate Accounting in conformity with the Provisions of Indian Companies Act 1956 and Indian Accounting Standards.
CO2:	Explain the students basic nature of a joint stock company as a form of business organization and the various kinds of companies based on liability of theirmembers, the types of shares issued by a company, accounting treatment of shares issued at premium and at discount including oversubscription, forfeiture of shares and reissue of forfeited shares under varying situations, understand the meaning of debenture and explain the differencebetween debentures and shares. Describe various types of debentures;record the journal entries for the issue of debentures at par, at a discount and at premium;
CO3:	Student would learn to prepare Final Accounts of Companies, Valuation of Goodwill Super profit method and Capitalization method and Valuation of shares Intensive Value, Market Value and Fair Value.
CO4:	Student would learn to prepare Accounting for Liquidation of companies– Preparation of Liquidator's Final Statement of Account.Accounting for Amalgamation, Absorption and External Reconstruction of companies – Calculation of purchase consideration.
CO5:	Students will be able to explain the Concept of Fund, What is flow ofFund, Rules of Fund flow statement, Schedule of changes in working capital, Statement of sources and Application of Fund.

Course: Monitory System

CO1: Explain the evolution of money and its nature and functions of money, Explain how information about the future can reduce the uncertainty associatedwith future monetary value, and Explain the concept ― value of money‖

CO2: identify the principles behind the workings of the financial system, theIndian Banking System, the role of development banks in India. To study the law and practice of Banking System in India, study the recent trends in Indian Banking System

CO3: Assess the responses of the economy to both monetary and fiscal policy, Explain the basic purposes of the monetary and financial systems. Identify the marketsfor stocks, bonds, derivatives, and currencies.

Course: Auditing (AUD)

CO-1. Students would understand Basic Concepts of Auditing, Types of Audits, Audit Programme, Audit Books, Routine checking and Vouching.
CO-2. Students would understand the power and duties of Company Auditor &preparation of Audit Report.
CO-3. Student would understand the Special Audit of Banking, Insurance and Non-Profit Companies & Educational Institutes.
CO-4. Make students good auditors

Course: Information Technology and Business Data Processing

CO-1- Students would learn concept and use of data in computing. Concept and Advantages of Data Processing, Application of Data Processing in Business.
CO-2- Students will study database concept, objectives, need of database, database users. Data warehousing Concept, need and advantages of data. Data Mining Concept, Advantages and Applications of Data Mining,
CO-3- Students would understand Database management system concept, characteristics, objectives, advantages, limitations, components of DBMS, DBMS Models, architecture of DBMS.
CO-4- Students will try to learn Spreadsheet Package MS-Excel 2007 / Higher: Introduction, components of spreadsheet; windows spreadsheet basics: concepts, sheet Tabs: working in Worksheet.
CO-5- They will understand formulas, functions and chart in Excel: Introduction to formulas, functions and categories of functions. Working with common Excel functions: Chart in Excel: Introduction, types, creating and formatting, saving & printing.

Course: Busine ss Mathematics
CO-1- Student would be able to understand natural numbers, integers H.C.F.& L.C.M.on two or more integers. Linear equation in one and two variables method with application.
CO-2- Acquire knowledge to calculate Percentage, Discount, Commission andBrokerage.
CO-3- Calculate the Average, Profit and Loss.
CO-4- Learn Mathematics of Finance: Simple Interest, Compound Interest.
CO-5- Learn Ratio and Proportion: Ratio and percentage concept of proportion. Simple and Compound proportion, Direct and inverse proportion.

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B.Com II- Semester IV

Course : Indian Financial System

CO1: Demonstrate an understanding of the history, evolution, structure, operations and regulation of commercial banking, central banking and financial systems together with the design and conduct of monetary policy.
CO2: Outline the structure and functions of the Indian financial system.
CO3: Illustrate the functioning of financial market and government security market in the development of Indian financial system.
CO4: Evaluate the functioning of different financial institutions.

Course ; Income Tax

CO-1. Students would understand basic Concepts of Income Tax.
CO-2. Student would be able to compute Tax liability on various Heads of Income like Salary, House Property, Business and profession, Capital Gain & other sources.
CO-3. Student would be able to compute Tax liability on various Heads of Income, & understand Tax Management & Tax Administration. In and all to Make students good Tax Consultants

Course : Information Technology and Business Data Processing

Students will learn and understand

CO-1- Information Concept, Data v/s Information, Uses of Information within and outside the Organization. Information Technology: Introduction, Uses in Business and Various Fields.
CO-2- Computerized Accounting Package: Computerized Accounting: Concept, Advantages and Limitation, Manual Vs Computerized Accounting.
CO-3- Accounting Software Tally 9.0 / Higher: Introduction, Features, Company info,Menu, Gateway of Tally Menu, Button Bar, Status Bar, Calculator.
CO-4- Working in Tally Company Creation: Accounts only and Accounts with inventory. Groups and Ledgers: Concept, Creation, Display, Alternation & Deletion. Vouchers, Transaction.
CO-5- Reports and Advanced Features in Tally: Reports Display and Printing: Balance Sheet, Profit & Loss Account, Ratio Analysis, Stock Summary, Trial Balance, Day Book and Account Book Data Export & Import: ODBC .Indian Tax System

Course : Business Statistics

CO-1- Learn Statistics as a subject, Descriptive Statistics- Compared to inferentialStatistics, Types of data, Collection, Tabulation and presentation of statistical data.**CO-2-** Learn Index Numbers, Construction of Index Number.
CO-3- Learn Analysis of Universal Data : Construction of a frequency of distribution,concept of central tendency & their measures, Mean , Median, Mode.

CO-4- Learn Concept of Dispersion, Absolute and Relative measures of dispersionSkewness.
CO-5- Learn Co-efficient of correlation _Karl Pearson`s _formula. Calculation of Co-efficient of correlation in grouped and ungrouped data. Probable error.

Course: Corporate Accounting

CO1:	This course shall enable the students to develop awareness and train themin Corporate Accounting in conformity with the Provisions of Indian Companies Act 1956
CO2:	Students would Learn to prepare Banking Final Accounts &Insurance Company Final Account,
CO3:	Students would Learn to prepare Valuation of Goodwill Super profitmethod and Capitalization method and Valuation of shares IntensiveValue, Market Value and Fair Value.
CO4:	Students would Learn to prepare Valuation of Shares: Meaning of share, need, characteristics, method of valuation of Shares Problem on followingmethods. 1) Net Asset Method 2) Yield Method.
CO5:	Student would Learn to prepare Accounting for Liquidation of companies– Preparation of Liquidator's Final Statement of Account.

B.Com III- Semester V

Course : Business Environment (BEM)

CO-1. Students would be able to understand the concept, importance, nature, scope, components and current scenario of Indian Business Environment.
CO-2. Students would be able to understand role and characteristics of Agriculture inIndia, Agriculture marketing, APMC, NABARD, Current trends like Crop insurance scheme, Kisan credit card and MSP
CO-3. Students would be able to understand the Role and pattern of Industrialization, Small scale, cottage and micro industries, Industrial sickness, Industrial Policy, 2013
CO-4. Students would be able to understand Nature, Contribution, Scope and Coverage of Indian Service Sector, IT Services, Tourism and Hospitality Industry, Right to Disconnect.
CO-5. Students would be able to understand the importance of foreign trade, Balance of Trade and Balance of Payment, Foreign trade policy, FDI and FII

Course : Internet & World Wide Web-I (IWWW-I)

CO-1- Students would be able to understand the meaning of Network and Topologies, Types of Networks, Network Models,
CO-2- Students would be able to understand the Concept of Internet, Internet enabled services, Mechanism of Internet, Open System Interconnected Reference Model (OSIRM)

CO-3- Students would be able to understand the Electronic Mail, To create New e-mailID, Sign-in , sending and deleting e-mail, uses and features of G-Mail, Password and Captcha.
CO-4- Students would be able to understand the World Wide Web Consortium (W3C), Architecture of WWW, exploring the WWW, Meaning of Website, Portal, URL and Hyperlink.
CO-5- Students would be able to understand Designing of Website, Webpage, HTML,Versions of HTML, Explanation of structure of the home page, HTML Basic Tags.

Course: Cost Accounting:-

CO-1- Understand various costing systems and its accounting.
CO-2- Analyze and provide recommendations to improve the operations of organizations through the application of Cost accounting techniques
CO-3- Evaluate the costs and benefits of different conventional and contemporarycosting systems
CO-4- Differentiate methods of schedule costs as per unit of production.Differentiate methods of calculating stock consumption
CO-5- Identify the specifics of different costing methods. Analyze cost-volume-profit techniques to determine optimal managerial decisions. Apply cost accounting methods for both manufacturing and service industry.

Course: Business Regulatory Frame work

CO-1- Understand Indian Contract Act,1872. Essentials and Classification of Contracts. Proposal, Performance of Contract. Consequences and Remedies of Breach of Contract. **CO-2-** Understand Special Contacts:-Indemnity & Guarantee, Bailment and Pledge,Agency and Agent, Termination of Agency.
CO-3- Understand Sales of Goods Act, 1930 and Consumer Protection Act, 1986: Principles, Conditions and Warranties, Ownership, Consumer, Importance, Objectives of Consumer Protection Act.
CO-4- Understand Negotiable Instrument Act, 1881: Introduction, Characteristics, Promissory Note, Bill of Exchange, Cheque, Draft endorsements, Crossing of Cheque, Acceptance, Dishonour
CO-5- Understand Goods and Services Tax Act, 2016, CGST, SGST and IGST, Input Tax Credit, Rate of GST, .Basic Procedures, Powers of GST Officer, Offences, Penalties and Appeals.

Course: E-Commerce
Students will learn and understand

CO-1- Basics of e-commerce: meaning, essential components, four basic models/ concepts of ecommerce, operational scheme, benefits, limitations. E-commerce v/s traditional commerce.
CO-2- E-commerce in India: history of Internet, initiation of internet in India, growth of internet users, current scenario in India, FDI policy about e-commerce and future e-

commerce in India.
CO-3- Retail E-commerce: concepts of B2C, C2B and C2C, consumer's shopping procedure on internet, disintermediation and re-intermediation in B2C, E-auction procedure and benefits.
CO-4- B2B e-commerce: meaning and characteristics, key technologies, E- marketplace models of B2B- supplier oriented, buyer oriented and intermediary oriented marketplace.**CO-5-** e-Payment and e- Banking: Indian Payment Models, e-payments options: EFT, credit cards and debit cards, use of mobile applications for e-payment, meaning of e- banking, online banking services, benefits, future of online financial services in India

B.Com III- Semester VI

Course : Economics of Development(EOD):

CO-1- Students would be able to understand Concept and Indicators of Economic Development, Economic Underdevelopment, Economic Growth.
CO-2- Students would be able to understand Economic Growth Models like Harrod and Domer Model, Classical theories of development of Smith, Ricardo, Marx and Theory of capitalistic development.
CO-3- Students would be able to understand vicious circle of poverty, theory of circular causation, theory of unlimited supply of labor, Big Push Theory of Development.
CO-4- Student would be able to understand the concept of Balanced Growth and Unbalanced Growth, Duseanbari effect , Roddan approach, Nerk approach.
CO-5- Students would be able to understand concept of Development of human and financial capital.

Course : Internet & World Wide Web-II (IWWW-II)

CO-1- Students would be able to understand the concept of Web browsing and history,types, functions and features of web browser.
CO-2- Students would be able to understand Web Dictionary, Search Engines likeGoogle, Bing and Yahoo and guidelines for effective searching.
CO-3- Students would be able to understand Social Networking Websites like Facebook, Instagram and Twitter, Meaning and features of mobile applications likeBHIM, WhatsApp
CO-4- Student would be able to understand Google Drive, Google Classroom andGoogle Forms.
CO-5- Student would be able to understand MS Front page express, using it to createwebpage.

Course : Management Accounting

CO-1- Apply management accounting and its objectives in facilitating decision making. Apply and analyze different types of activity-based management tools through the preparation of estimates.
CO-2-Analyzecost-volume-profittechniquesto determine optimal managerial

decisions.
CO-3- Perform cost variance analysis and demonstrate the use of standard costs inflexible budgeting.
CO-4- Prepare analyses of various special decisions, using relevant managementtechniques. Calculate various accounting ratios, reports and relevant data. Prepare a master budgetand demonstrate an understanding of the relationship between the components.
CO-5-Prepare Cash Flow and Funds Flow statements, this helps in planning for intermediate and long-term finances.

Course : Company Law

CO-1- Understand definition, silent features of company, Act 2013. Formation of company, stages of formation, Functions, Duties and liabilities of promoter, Types of company.
CO-2- Understand Incorporation of company, Prospectus, MOA , Article of company**CO-3-** Share capital of company, Types of share and debenture, Issue of shares, Allotment, calls and forfeiture, transfer & transmission of share, share certificate and share warrant.
CO-4- Understand securities market, history of Stock Exchange, functions of BSE and NSE its importance. Primary and secondary market: components of primary markets, D-Mat Account
CO-5- Understand company secretary and company meetings : appointment, duties and responsibilities of CS, types of company meeting, notice , agenda and proceedings. voting methods, quorum.

Course : E-Commerce-II

CO-1- Understand Internet e-commerce Business Models: Social media, advertising, retail, hybrid, merchant, informational, drop-shipping and revenue model.
CO-2- Understand B2C Internet Marketing, meaning of online marketing, online marketing strategies, marketing channels, internet branding, online publishing and advertising.
CO-3- Understand B2B Online Marketing, Use of internet based electronic data interchange (EDI), procurement reengineering, just in time delivery, online marketing issues.
CO-4- Understand the Meaning of e-governance and e-government, Objectives of E-governance, private sector interface in E Governance, concepts of G2B, Business to Government B2G,C2G.
CO-5- Understand application of Internet EDI in E-governance, E-governance in India, E-Governance models.

Sant Gadge Baba Amravati University, Amravati.
Faculty- Science and Technology
Programme- M.Sc. ENVIRONMENTAL SCIENCE POs:

After completion of this Programme successfully, students would be able to

PO:1- Acquire fundamental knowledge of different aspects of environment and local, regional and global environmental problems.

PO:2- Develop environmental monitoring skills, including conduct of experiments and data analysis.

PO:3- Apply systems concepts and methodologies to analyze and understand interactions between social and environmental processes.

PO: 4- Use environmental pollution control technologies.

PO:5- Acquire the knowledge and skills needed for the environmental design and management.

PO:6- Apply skills in the preparation, planning and implementation of environmental projects.

PO:7- Develop ability to adopt changing scientific environment in the process of sustainable development by using statistical tools.

Programme Specific Objectives (PSOs):

After completion of this Programme successfully, students would be able to

PSO:1- Apply the basic concepts of physical, chemical, mathematical, and biological sciences appropriately to the discipline of environmental science.

PSO:2- Use state-of-the-art techniques, tools and skills necessary for accurate analysis of environmental samples.

PSO:3- Demonstrate knowledge and understanding of the environmental principles and apply these to his own work, as member and/or leader in a team, to execute multidisciplinary projects.

PSO:4- Gain Advanced knowledge of fundamentals of Environmental Science with enhanced command over modern scientific methods, techniques and chemical processes equipped with environment safety measures.

PSO:5- Communicate complex technical information related to Environmental Science in a clear and concise written and verbal manner as oral presentations and compilation in the form of scientific reports.

PSO:6- Protect Natural Resources.

Sant Gadge Baba Amravati University, Amravati
Faculty: Science and Technology Programme: B.Sc. Course: Environmental Science

POs: At the time of graduation, Students would be able to

PO1- Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

PO2- Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

PO3- Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.

PO4- Effective Citizenship: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO5- Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

PO6-Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.

PO7- Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes

Programme Specific Outcomes:

Upon completion of the course (Environmental Science) successfully, students would be able to

PSO1 - Apply environment related technical skills for sustainability.

PSO2- Develop the skills to identify Environmental problems.

PSO3- Use the fundamentals of interdisciplinary subjects to solve environmental problems

PSO4-Understand concept and components of environment, history and meaning and interdisciplinary nature of Environmental Science.

PSO5- Identify sources, nature and effects of pollutants on global and local environment.

PSO6- Perform procedure for qualitative and quantitative analysis of pollutants.

PSO7- Assess the effects of pollutants and suggest the control and preventive measures for environment.

PSO8- Apply the environmental conservation strategies.

Sant Gadge Baba Amravati University, Amravati.
Faculty- Science and Technology
Programme- B.Sc. (Apiculture)
Subject: - Apiculture

POs: At the time of graduation, Students will be able to -

PO1- Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

PO2- Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

PO3- Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.

PO4- Effective Citizenship: Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO5- Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

PO6- Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.

PO7- Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes

PSO, s Programm Specific Outcomes of B. Sc Apiculture:

After successful completion of the Programme, students would be able to-

PSO1- Acquire knowledge about different species and casts of the honey bees.

PSO2- Aware about economic importance of honey bees.

PSO3- Identify role of honey bees in nature and in agricultural productivity.

PSO4- use Apiculture for employment, self-employment and conservation of nature.

PSO5- Apply knowledge and skill to establish its own apiary or provides services to apiary.

PSO6- Learn various product of honey bees and value addition in these products, create scope for entrepreneurship.

PSO7- assess the pest, and enemies/ predator of honey bees.

PSO8- understand the basics about beekeeping tools, equipment, and managing beehives.

PSO9- Manage beehives for honey production and pollination.

10. Do marketing of various bee products.

Sant Gadge Baba Amravati University, Amravati

Part A

Faculty: Science & Technology
Programme: B Sc with Food Science

POs:

Students of undergraduate general degree programme at the time of graduation will be able to -

PO1.Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, check out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

PO2.Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

PO3. Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.

PO4. Effective Citizenship: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

PO5. Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

PO6. Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.

PO7. Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest contexts socio-technological changes.

PSOs:

Students can be able to-

1. Gain insight of food science including the history and fundamental properties of food
2. Acquire the skill in the use and care of basic food Science laboratory equipment
3. Perform basic laboratory procedures in food science.
4. Understand the integral role of food science and different branches of food science related subjects.
5. Acquainted with the basic chemistry of food

SantGadge Baba Amravati University, Amravati

Format and Template for Courses (Theory) of UG/PG Programmes

Part B

Syllabus Prescribed for 1st Year UG Programme

Programme: B Sc

Semester 1

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)
FSC1-T	Fundamentals of Food Science	**90**

Cos

After completion of this course the student will able to

- Understand different types of foods and their nutritional importance regarding health
- Classify food in different groups and explain its functions
- Calculate body mass index (BMI)
- Understand the unit system and convert the unit in various systems
- Differentiate between types of acids and solutions
- Prepare different solutions of various concentration
- Understand structures of atoms and molecules

Sant Gadge Baba Amravati University, Amravati

Syllabus Prescribed for First Year UG Programme

Programme: B.Sc.

Semester 1

Code of the Course/Subject	Title of the Course/Subject (Laboratory/**Practical**/practicum/ hands-on/Activity)	(No. of Periods/Week)
FSC1-P	**Food Science**	**06/week/batch**

COs

At the end of the Lab/Practical course, the students will be able to

1. Acquire the skills in the use and care of basic Food Science equipments.
2. Determine the temperature of substances and interconvert them in various systems
3. Prepare standard solutions of various concentrations
4. Perform basic laboratory procedures such as heating, stirring, titrations, etc.
5. Identify various basic food commodities with their common names and groups
6. Understand and Perform germination process

List of Laboratory Experiments/Activities etc.

SantGadge Baba Amravati University, Amravati

Format and Template for Courses (Theory) of UG/PG Programmes

Syllabus Prescribed for 1st Year UG Programme

Programme: B Sc

Semester 2

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)
FSC2-T	Fundamentals of Food Chemistry	90

Cos

After completion of this course the student will able to

- Understand importance of carbohydrates, proteins, fats, vitamins, and minerals in diet and health
- Compare the functions and importance of various constituents of food in diet
- Classify the proximate food constituents as well as vitamins and minerals
- Draw the structures of mono, di, poly saccharides
- Compare the functions of various food constituents
- Relate the mono unit with its polymer

Sant Gadge Baba Amravati University, Amravati

Syllabus Prescribed for First Year UG Programme

Programme: B.Sc.

Semester 2

Code of the Course/Subject	**Title of the Course/Subject** (Laboratory/**Practical**/practicum/hands-on/Activity)	**(No. of Periods/Week)**
FSC2-P	**Food Science**	**06/week/batch**

COs

At the end of the Lab/Practical course, the students will be able to

1. Understand the various methods of estimation of nutrients
2. Differentiate the qualitative and quantitative estimation
3. Understand the principles of chromatography
4. Perform the various types of titrations
5. Measure the hardness of water
6. Evaluate the properties of oil samples

...tical/Laboratory Experiments/Activities etc.

Syllabus Prescribed for 2023-2024 UG Programme

Programme: UG with Food Science

Semester-III

Code of the Course /Subject	Title of the Course/Subject	Total Number of Periods
FSC3-T	Basic Biochemistry and Food Microbiology	90

Cos

After completion of this course the student will able to

- Understand the importance and working of enzymes
- Diagram the digestive system and the digestion path followed by food
- Summarize the metabolism of carbohydrates
- Justify the role of enzymes in the metabolism of lipids
- Classify microorganisms and justify their importance in food
- Compare various microorganism according to their properties

		CONTENT

Syllabus Prescribed for 2023-2024 UG Programme

Programme: UG with Food Science
Semester-III

Code of the Course /Subject	Title of the Course/Subject	Total Number of Periods
FSC3-P	FSC-(3S) Practical	06 / per week /per batch

COs

At the end of the Lab/Practical course, the students will be able to

1. Acquire the skills in the use and care of basic Food microbiology equipments.
2. Understand the working of enzymes
3. Prepare various types of media
4. Perform the staining of microorganisms
5. Analyze the food samples for the microbial contamination
6. Isolate the microorganism from the sample of food or water

Syllabus Prescribed for 2023-2024 UG Programme

Programme: UG with Food Science
Semester-IV

Code of the Course /Subject	Title of the Course/Subject	Total Number of Periods
FSC4-T	Food Quality & Preservation	90

COs

After completion of this course the student will able to

- Discuss the reasons of spoilage and quality factors in the food
- Perform sensory evaluation of food products for its quality assessment
- Compare class I and class II types of preservatives
- Justify the advantages of modern food cooking processes over the traditional methods
- Categorize the various heat preservation methods on the basis of their merits and demerits
- Associate the role of various food laws with the quality of food and food products
- Analyze the packaging materials for the labeling and the ingredients

Syllabus Prescribed for 2023-2024 UG Programme

Programme: UG with Food Science

Semester-IV

Code of the Course /Subject	Title of the Course/Subject	Total Number of Periods
FSC4-P	FSC-(4S) Practical	6 periods /per week/per batch

COs:

By the end of this module, the students will be able to:

1. Apply food preservation knowledge for the preservation of food products
2. Evaluate the quality of the food product by the method of sensory evaluation
3. Apply the right method for the preservation of particular food commodity
4. Determine the shelf life of food product
5. Incorporate the methods to find out the adulteration in the food products
6. Compare the various methods of food preservation with their advantages and disadvantages
7. Summarize the quality of market food products by reading the food packet labeling

Arts, Science and Commerce College, Chikhaldara,Dist. Amravati

Bachelor of Arts

Program Outcomes

PO1: ***Provide knowledge and understanding of various fields of study in core disciplines in the humanities and social sciences***

PO2: ***Develop critical and analytical skills to the identification and resolution of problems within complex changing social, linguistic and literary contexts***

PO3: ***Understanding of the general concepts and principles of selected areas of study outside core disciplines of the humanities, social sciences and languages***

PO4: ***Follow independence in learning appropriate theories and methodologies with intellectual honesty and an understanding of ethical and human values***

PO5: ***Encourage students to analyze the problems and apply their knowledge for remedies thereof***

PO6: ***Enhance students skills of effective communication and language learning i.e. reading, writing, listening and speaking another language with fluency and understand its cultural value***

PO7: ***Become well informed and updated member of the community and responsible citizens***

PO8: ***Work with self esteem, self reliance, self-reflection and creativity to face adversities in the work and personal life***

Hindi

Programme Specific Outcomes

PSO1: Promote Hindi as our national language and a symbol of Nationality.

PSO2: Make students understand its simplicity and lucidity.

PSO3: Study and understand Literature in Hindi and significance of its translation.

PSO4: Popularize Hindi and promote people to adopt Hindi along with their mother tongue.

PSO5: Study Hindi along with local tribal languages.

PSO6: Promote regional language translation with the help of study of Hindi.

Hindi

Course Outcomes

By the completion of this course the student will be able to

CO1: Students will understand the various aspects of Hindi Language and literature.

CO2: Hindi is a national language and students will understand and comprehend its significance and relevance.

CO3: They will learn Hindi language and its usage in day to day and professional life.

CO4: Students will develop imaginative and language skills during study of Hindi and Hindi literature.

Arts, Science and Commerce College, Chikhaldara, Distt. Amravati (MS)
Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and Course Outcomes (Cos)

Bachelor of Arts

Programme Outcomes

PO1: Provide knowledge and understanding of various fields of study in core disciplines in the humanities and social sciences

PO2: Develop critical and analytical skills to the identification and resolution of problems within complex changing social, linguistic and literary contexts

PO3: Understanding of the general concepts and principles of selected areas of study outside core disciplines of the humanities, social sciences and languages

PO4: Follow independence in learning appropriate theories and methodologies with intellectual honesty and an understanding of ethical and human values

PO5: Encourage students to analyse the problems and apply their knowledge for remedies thereof

PO6: Enhance students skills of effective communication and language learning i.e. reading, writing, listening and speaking another language with fluency and understand its cultural value

PO7: Become well informed and updated member of the community and responsible citizens

PO8: Work with self esteem, self reliance, self-reflection and creativity to face adversities in the work and personal life

Dr.Gajendra B.Dhawale
Asstt.Professor
Head of History Deptt.
Arts,Comm.& Science College,
Chikhaldara Distt.Amravati

Arts, Science and Commerce College, Chikhaldara, Distt. Amravati (MS)
Programme Specific Outcomes (PSOs)

Department of History

Programme Specific Outcomes

PSO1: To allow students to know the national as well as international history
PSO2: Preserve Indian culture by creating awareness about age old Indian culture
PSO3: Promote students to preserve and protect ancient and medieval historical structures and monuments
PSO4: Prepare students for various competitive examinations
PSO5: To help in nation building by developing patriotism among students

Dr.Gajendra B.Dhawale
Asstt.Professor
Head of History Deptt.
Arts,Comm.& Science College,
Chikhaldara Distt.Amravati

Department of Mathematics (UG)
Programme Outcomes (PO)

PO No.	Upon completion of B.Sc. Degree programme, the graduates will be able to:
PO-1	Pursue their post graduation and research activities.
PO-2	Enhance their employability for government jobs, subsequent carriers and educational programme.
PO-3	Acquire the skills in a broad range of analytic, scientific, government, financial, health, technical and other positions.
PO-4	Recognize and appreciate the connections between theory and applications.
PO-5	Identify suitable existing method of analysis, if any and assess their strengths and weaknesses in the context of the problem being considered.
PO-6	Analyze test and interpret technical arguments and form independent judgments.

Programme Specific Outcomes (PSO)

PSO No.	Upon completion of B.Sc. Mathematics Degree programme, the graduates will be able to:	Mapping
PSO-1	Explain accurately abstract and physical phenomena.	PO-3
PSO-2	Recognize the importance and value of Mathematical thinking, training and approach to problems solving on a diverse variety of disciplines.	PO-1
PSO-3	Restate an investigative questions in terms of a statistical model or algorithm and demonstrate the ability to communicate statistical result verbally and in writing to both technical and non-technical.	PO-4
PSO-4	Apply the knowledge of geometry in various daily life applications such as surveying, astronomy and navigation.	PO-5
PSO-5	Inculate the knowledge of basic properties of real numbers and convergence in finding approximate solutions to theoretical and practical problems.	PO-3
PSO-6	Calculate word problems using combinatorics and solve complex problems by critical undertaking analysis and synthesis.	PO-3
PSO-7	Solve problems in classical mechanics and celestial mechanics.	PO-3
PSO-8	Acquire good knowledge and understanding in advance area of Mathematics	PO-1
PSO-9	Comprehend the fuzzy logic and the concept of fuzziness involved in various system and fuzzy set theory.	PO-3
PSO-10	Construct conditional and iterative statement to write C-program and Perform power point presentation, accounting operations and documentation.	PO-2
PSO-11	Apply the concepts of Mathematics to real life problems.	PO-3

Arts, Science and Commerce, College, Chikhaldara Dist. Amravati

Department of Political Science

Program Outcomes

Outcome 1: Political Science students will be able to write, read, speak and listen effectively in academic and social contexts.

Outcome 2: Political Science students will be able to construct research questions and use appropriate sources and research methods to answer them.

Outcome 3: Political Science students will analyze individual and group political behavior; the political process; public policy and administration; and case law within government.

Outcome 4: Political Science students will analyze the core intellectual traditions in political thought and apply their central tenets to contemporary political questions and issues.

Outcome 5: Political Science students will analyze the behavior of state and non-state actors and the nature of their interactions.

Outcome 6: Political Science students will compare and contrast the various political, social and economic systems that exist across the international community and analyze the political consequences of those variations.

Outcome 7: Political Science students will use analytical skills to understand civic, social and environmental challenges

Outcome 8: Political Science students will demonstrate social responsibility and ethical reasoning within a variety of contexts

Outcome 9: Political Science students will generate a scholarly product that demonstrates appropriate knowledge, technical proficiency, information collection, synthesis, interpretation, presentation, and reflection.

Arts, Science and Commerce, College, Chikhaldara Dist. Amravati

DEPARTMENT OF POLITICAL SCIENCE PROGRAMME SPECIFIC OUTCOME

After graduation the student will be able to

PSO 1: Understand the contribution of the main traditions of western and Indian political thinkers to political thought.

PSO 2: Understand the processes and dynamics of Indian government and politics. It also familiarize with the vital contemporary emerging issues of centre-state relation, political parties, emergence of new leadership at different levels, demand for autonomy movement, ethnic conflicts etc.

PSO 3: Acquaint with the diverse political systems especially the developed countries including USA, China and Switzerland.

PSO 4: Understand the women's Political Participation, issues and problems.

PSO 5: Understand the problems and prospects of rural development of India

PSO 6: Political Science is a social science discipline that not only studies government & state but, at the same time, applies empirical theory & scientific methods to the analysis of political matters.

PSO 7: As the world today revolves round political as well as economic considerations, a formal degree of Political Science has the utmost practical applicability. Its subject matter is concerned with the everyday life of an individual living in a society and state.

PSO 8: Political Science is the study of political behavior, governance and power and how these are shaped by institutional settings and by the ideas, interests and resources of political actors.

PSO 9: A degree in political science not only enables students to enhance their grasp of the basic structures and processes of governmental systems, public policies and political forces that directly impact their lives, but also help them analyses political problems, arguments, information and theories and to apply methods appropriate for accumulating and interpreting data applicable to this discipline.

PSO 10: Above all, it aids students in becoming informed citizens by amplifying knowledge on their entitlement to the rights and duties within a state.

PROGRAMME OUTCOMES

Department of

Marathi

Programme Outcomes

P.O. 1- युवक वयोगटातील विद्यार्थ्यांची भाषा व वाङ्मयविषयक जाणीव विकसित होते.

P.O. 2- भाषा व संस्कृती आणि साहित्य व संस्कृती यांचा अनुबंध समजून घेता येतो.

P.O. 3- मातृभाषा व साहित्यातून मानवी जीवनव्यवहार समजून घेता येतो.

P.O. 4- समाजव्यवहारात भाषेचे यथोचित आकलन व वापर करण्याची क्षमता विकसित होते.

P.O. 5- व्यक्तिमत्त्व विकास साध्य करता येतो.

P.O. 6- भाषेवर प्रभुत्व निर्माण करता येते.

P.O. 7- संवेदनशीलता विकसित होते.

P.O. 8- नवनिर्मितीक्षमता व अभिव्यक्तिक्षमता विकसित होते.

P.O. 9- सामाजिक बांधिलकी निर्माण होते.

P.O. 10- विशिष्ट समस्येची चिकित्सा करता येते.

P.O. 11- नोकरी व रोजगाराच्या संधी शोधता येतात.

Dept. of Marathi

Programme Specific

Outcomes

P.S.O. 1- साहित्यातील जीवनदर्शन, समकाल, व्यवहार यांची जाणीव होते.

P.S.O.2- साहित्य व भाषाविषयक आकलनक्षमता वाढते.

P.S.O.3- विविध वाङ्मय प्रकार समजून घेता येतात.

P.S.O. 4- मराठी साहित्य, भाषा व संस्कृती यांचा जवळून परिचय होतो.

P.S.O. 5- आधुनिक मराठी साहित्यातील विविध वाङ्मय प्रवाहांचा परिचय होतो.

P.S.O. 6- मराठी भाषा व साहित्याची रूची वाढते.

P.S.O. 7- साहित्यकृतीला योग्य प्रतिसाद देण्याची क्षमता निर्मा ण होते.

P.S.O. 8- मराठी साहित्याच्या परंपरेचे स्थूल ज्ञान मिळते.

P.S.O. 9 साहित्यकृतींमधील सांस्कृतिक संदर्भांचे ज्ञान मिळते.

P.S.O. 10 साहित्यभाषा व व्यवहारभाषा यांचे ज्ञान मिळते.

P.S.O. 11- साहित्यातून प्रकट होणाऱ्या मानवी मूल्यांचे आकलन होते.

P.S.O. 12- लेखन, वाचन, संभाषण, इत्यादी. भाषिक कौशल्यांचा विकास होतो.

Course Outcomes

B.A.I, II, III

Course outcomes of Marathi Compulsory subject

C.O. 1-वैचारिक साहित्याचे स्वरूप लक्षात येते.

C.O.2- समाजसुधारकांच्या मौलिक विचारांची माहिती मिळते.

C.O.3- वैचारिक जाणिवा प्रगल्भ होण्यास मदत होते.

C.O.4- ललित साहित्यप्रकाराची ओळख होते.

C.O.5- व्यक्तिचित्रण, कथा, ललित लेखनाची प्रेरणा मिळते.

C.O.6- साहित्यातील लालित्याचा आस्वाद घेण्याची क्षमता निर्मा ण होते.

C.O.7- कवितेच्या विविध प्रकारांची माहिती मिळते.

C.O.8- कवितेच्या विविध कालखंडाचा व प्रवाहाचा अभ्यास होतो.

C.O.9- विद्यार्थ्यांमधील भावना व विचार विकसित होतात.

C.O.10- कवितेचे चिकित्सक अध्ययन करण्याची दृष्टी प्राप्त होते. .

C.O. 11-लेखनविषयक नियमांची ओळख होते.

C.O. 12- लेखनामध्ये अधिकाधिक अचूकता येते.

C.O. 13- मुद्रितशोधन कौशल्याची ओळख होते.

C.O. 14- मुद्रितशोधक म्हणून रोजगार मिळवता येतो.

C.O. 15- पत्रलेखनाचे कौशल्य अवगत होते.

C.O. 16 परिचयपत्राचा आकृतीबंध लक्षात येतो.

C.O.17- वक्तृत्व कलेचा विकास होतो.

C.O.18- सूत्रसंचालन कौशल्य विकासाला वाव मिळतो.

C.O.19- महितीपत्रकाची व्यावहारिक उपयोगिता लक्षात येते.

C.O.20- निमंत्रण पत्रिका व महितीपत्रिकेचा आकृतीबंध लक्षात येतो.

C.O.21- अहवाल लेखनकौशल्य विकसित होते. .

C.O.22- वृत्तपत्रक्षेत्रात रोजगाराच्या संधी उपलब्ध होतात.

C.O.23- निवेदन कौशल्य विकसित होते..

C.O.24- जाहिरात क्षेत्रात संधी उपलब्ध होतात.

Course outcomes of Marathi Literature

B.A. I, II & III

C.O. 1- कविता या वाङ्मय प्रकाराची समृद्धता अवगत होते.

C.O.2- आधुनिक काळातील नामवंत कवि-कवयित्रींचा परिचय होतो॰

C.O. 3- काव्यलेखनात रूची निर्मा ण होते.

C.O. 4- कादंबरी साहित्यप्रकाराची ओळख होते.

C.O.5- कादंबरीचे विविध प्रकार व लेखनपद्धती अवगत होते.

C.O. 6- कादंबरी अभ्यासाची दृष्टी प्राप्त होते.

C.O.7- कथा वाङ्मयप्रकाराचे स्वरूप लक्षात येते.

C.O.8- कथांमधील मूल्य शोधण्याचे तंत्र अवगत होते.

C.O.9- संतांचे अमूल्य संस्कार आत्मसात करता येतात.

C.O.10- विविध जीवनमूल्यांचा परिचय होतो.

C.O.11- महानुभाव संप्रदायाची ओळख होते .

C.O.12- कथांमधील नैतिक मूल्ये आंगीकरता येतात.

C.O.13- साहित्याची प्रयोजणे लक्षात येतात.

C.O-14 साहित्याची निर्मितीप्रक्रिया जाणून घेण्याचे कौशल्य प्राप्त होते.

C.O.15- भाषेचा वैज्ञानिक अंगाने परिचय होतो.

C.O.16- भाषेचे स्वरूप व निर्मितीच्या शास्त्रोक्त संकल्पना अवगत होतात.

Sant Gadge Baba Amravati University, Amravati
B.Sc. Geology

Faculty: Science and Technology

Programme: B. Sc. Part I SEM I

General Geology, Physical Geology, Mineralogy, Crystallography and Field Geology

POs:
At the time of graduation, Students will be able to
PO1.Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
PO2.Effective Communication: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
PO3. Social Interaction: Elicit views of others, mediate disagreements and help reach conclusions in group settings.
PO4. Effective Citizenship: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
PO5. Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.
PO6. Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.
PO7. Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes

PSOs:
Upon completion of the programme successfully, students would be able to
1. Develop interests for Geology-Science of Earth as a specific subject of study.
2. Acquire the knowledge of various Physical Processes and work done by natural agencies
3. Acquire the knowledge of various kinds of minerals.
4. Study crystal structure and classification of crystals.
5. Undertake Field Visits to introduce and develop field based Geological skills and knowledge

COs
Upon completion of this course successfully, students would be able to
1. Understand the basic idea about geology, branches, scope and origin of the earth system.
2. Explain the age determination methods and composition & constitution of earth.
3. Understand the rock weathering process.
4. Describe and interpret the development of landform geologic structures made by the various agents like river, wind, glacier etc.
5. Understand and explain the volcanism and earth quakes theory.
6. Define mineral and Describe Physical, Chemical and Optical properties of the minerals.
7. Explain the crystal and its characters and different Crystal system.
8. Understand and use of basic tools for the fieldwork and describe the topographic Maps.
9. Understand the Surveying and its types along with surveying equipments.

Programme: B. Sc. Part I SEM II

Igneous, Sedimentary and Metamorphic Petrology

COs
Upon completion of this course successfully, students would be able to
1. Explain and describe the formation, classification, and structure of igneous rocks.
2. Explain and describe the formation, classification and structure of sedimentary rocks.
3. Explain and describe the formation, classification and structure of metamorphic rocks.
4. Identify and describe common Igneous, sedimentary and metamorphic rocks
5. Describe the depositional environment of sedimentary rocks.

1

Semester 1 Code of the Course/Subject	Title of the Course/Subject	(No. of Periods/Week)
GOG- Lab 1	**Mineralogy, Crystallography and Topographic map**	**06 Period per week**

COs

Upon completion of this course successfully, students would be able to perform/demonstrate

1. Megascopic identification of mineral
2. Microscopic identification of mineral
3. Study of element of symmetry in crystal
6. Reading of Topographic map

Code of the Course/Subject	Title of the Course/Subject	(No. of Periods/Week)
GOG- Lab 2	**Igneous, Sedimentary and Metamorphic**	**06 Periods per week**

COs

Upon completion of this course successfully, students would be able to perform/demonstrate

1. Megascopic identification of Rock
2. Microscopic identification of Rock
3. Construction of paragenetic triangular graphs

Part A

Faculty: Science and Technology

Programme: B. Sc. Part II (SEM III)

PSOs:

1. Study of Stratigraphy and Paleontology with an aspect to develop students' interests for Stratigraphy and Paleontology as a specific subject of study.
2. Acquire the knowledge of various stratigraphical units of India.
3. Acquire the knowledge of fossils and its uses
4. Study of fossil, systematic classification, geological and geographical distributions of various phylum

Code of the Course/Subject	Title of the Course/Subject	Total Number of Periods
GOG-3	**Stratigraphy and Paleontology**	**72**

COs

1. Understand the basic idea about Stratigraphy
2. Describe and interpret the various stratigraphical Supergroup and group
3. To improve the knowledge of fossils and its uses
4. Explain the characteristic features and classification of various phylum

Programme: B. Sc. Part II SEM IV

PSOs:

1. Study of structural and tectonic geology with an aspect to develop students' structural and tectonic geology interests as a specific subject of study.
2. Acquire the knowledge of various structure in field
3. Acquire the knowledge of geomorphology and fundamental concepts of geomorphology
4. Acquire the knowledge of various landforms and drainage patterns

Code of the Course/Subject	**Title of the Course/Subject**	**(Total Number of Periods)**
GOG-4	**Structural geology, Tectonics and Geomorphology**	**72**

COs

1. Understand the basic idea about structure geology and plate tectonic.
2. Describe and interpret the various structure
3. To improve the knowledge of isostacy and plate tectonics
4. Acquire the knowledge of geomorphology and fundamental concepts of geomorphology
5. Acquire the knowledge of various landform and drainage patterns

Semester 3 Code of the Course/Subject	**Stratigraphy and Palaeontology**	**(No. of Periods/Week) 06 Period per week**
GOG- Lab 3		

COs

1. Physiographic division of India
2. Major stratigraphic division
3. fossil identification

Code of the Course/Subject	**Title of the Course/Subject**	**(No. of Periods/Week) 06 Periods per week**
GOG- Lab 4	**Structural geology, Tectonics and Geomorphology**	

COs

1. Problems on Dip, Strike, Thickness of Beds and width of outcrop maps.
2. Section drawing and interpretation.
3. Morphometric Analysis.

Sant Gadge Baba University Amravati
Syllabus Prescribed under Choice based Credit System
2022-23
Faculty: Humanity

Programme: UG (B.A. Economics)

Part A

Pos:

1. Critical Thinking: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
2. EffectiveCommunication:Speak,read,writeandlistenclearlyinpersonandthroughelectronicmediainEnglish and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology
3. Effective Citizenship: Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
4. Ethics: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.
5. Environment and Sustainability: Understand the issues of environmental contexts and sustainable development.
6. Self-directed and Life-long Learning: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes

PSOs:

- Problem analysis: recognize formulate and study the problems of various sectors of the Indian economy, regional economy and the global economy with the help of the economic ways of thinking, theories, concepts and laws.
- Apply the knowledge of economic concepts, laws and theories, for a better economic environment for the society at large.
- Communicate effectively on the economic activities with the community and the society through the acquiring knowledge of the national and the global economy.
- To build on these concepts to develop deeper understanding of Economy in the future.
- Explain the basic concepts, laws and theories related to the economic behavior of the human being.
- Graduates from our department are effectively taught and explained the cause with the help of visual aids like white board and PowerPoint Presentation.
- They will be able to visualize the real world situation and enhance them to initiate the programmers for pursuing studies and be alert with the importance of entrepreneurial skills for their self-employment, to improve the general attitudes and living conditions of the masses.

UG (B.A. Economics)

Semester I

Course Outcomes:

The student will be able to:

1. Apply knowledge and skill in the field of Economics and will be able to have the employability in these areas.
2. Describe and apply the methods for analysing consumer behaviour through demand and supply, elasticity..
3. Perform analysis to analyse the impact of economic events on Markets,
4. To create a new approach towards the study of Economics.
5. The course will illustrate how microeconomic concepts can be applied to analyze real-life situations
6. Analyze the performance of firms under different market structures,
7. Evaluate the factors affecting firm behavior, such as production and costs
8. To have better awareness regarding different Factors Pricing Rent, Wages, Interest, and Profit.

Semester II

Course Outcomes:

The student will be able to:

1. Develop ideas of the basic characteristics of Maharashtra's economy and its potential for natural resources.
2. Understand agriculture as the foundation of economic growth and development, analyse the progress and changing nature of the agricultural sector and its contribution to the economy as a whole.
3. Understand the role of Agriculture in Economy of Maharashtra.
4. Study the issue of farmers suicide in Maharashtra.
5. Study the concept of FDI and its trends in Maharashtra.
6. Consider the role of Industry and Service sector in Economy of Maharashtra.

Semester-III

Course Outcomes:

The student will be able to:

1. Apply knowledge and skill in the field of Economics and will be able to have the employability inthese areas.
2. Describe and apply the methods for measurement of national income, GDP and Per Capita Income
3. Perform analysis to analyze the impact of Inflation and Deflation
4. To create a new approach towards the study of Value of Money.
5. The course will illustrate how macroeconomic concepts can be applied to analyze real-life situations
6. Analyze the performance consumption function.
7. Evaluate the factors and awareness of international trade.

Semester-IV

Course Outcomes:

The student will be able to:

1. Apply knowledge and skill in the field of banking.
2. Describe and apply the methods for analyzing commercial banks.
3. Perform analysis to analyze the impact of economic events on banking
4. To create a new approach of central banks
5. The course will illustrate how cooperative and NABARD
6. Analyze the performance of Banking Services,
7. To have better awareness regarding IMF and World Bank.