

PUNYASHLOK AHILYADEVJI HOLKAR
SOLAPUR UNIVERSITY, SOLAPUR



Name of the Faculty: Science & Technology

Choice Based Credit System (CBCS)

Syllabus: Entrepreneurship

Name of the Course: M.Sc.- I (Semester I & II)

(Syllabus to be Implemented from w.e.f. June 2020)

Preamble:

Overall scenario of student trends in selecting courses for studies is very typical. Most of the science students tend to choose the professional courses, particularly leading to studies in Medical sciences and Engineering and relatively less number of students opt for degrees in Biosciences. For several years now, the first preference of students desiring to enter the field of Life Sciences particularly, Microbiology, Botany, Zoology, and for last 5 to 6 years, it has shifted partly to Biotechnology course. This trend has been followed by chemical sciences. Both these disciplines viz. Microbiology and Biotechnology deal with overlapping interests. Microbial sciences focus more on study of the microbial world while Biotechnology focuses more on industrial applications relating to plants and animals.

The main theme of teaching these courses, however, remains the same i.e. application of basic principles of Life Science to develop into technology. Modern biology combines the principles of chemistry and biological sciences (molecular and cellular biology, genetics, and immunology) with technological disciplines (engineering, computer science) to produce goods and services and even for environmental management. The M. Sc. Entrepreneurship course is aimed to develop the industry based science curriculum in the various subjects like industrial Microbiology, Industrial Chemistry and Industrial Biotechnology with the syllabus of Commerce and management subjects which could help to develop the Science entrepreneurs. The Board of Studies in Entrepreneurship has identified the following thrust areas and prospective plans for syllabi reforms at postgraduate level:

Industrial Microbiology – includes application of bacteria, fungi, protozoa and viruses in traditional (food, dairy, wine, antibiotics, fermentation, etc.) and biotechnological industries. Agriculture – includes Microbial Biofertilizer, SCP and Biopesticide.

Industrial Chemistry-This includes the techniques like –Nitrification, Sulphonation, Halogenations, Esterification and Polymerization, **Chemical industries**- chemical fertilizers, leather, food chemistry, cement, glass, paint and pigments, dyes, attar, soap, pulp and paper, textiles, metals and minerals, petro chemicals etc.

Industrial Biotechnology –This includes the four major industrial areas, including health care (medical), crop production and agriculture, animal husbandry, non-food uses of crops and other products (e.g. biodegradable plastics, vegetable oil, biofuels, and environmental uses).

Commerce and management-This includes the legal aspects of business for technical compliances, fund raising techniques, human skills and soft skills, market survey, market feasibility and product planning etc.

In addition, we feel that the students should be well acquainted with industrial techniques which include different skill developments in various related fields. The skills will help the students to develop themselves as entrepreneurs.

Introduction

The syllabi till today had been sufficient to cater for the needs of students for building up their careers in industry. However, with the changing scenario at local and global level, we feel that the syllabus orientation should be altered to keep pace with developments in the industrial sectors. The need of the hour is proper syllabi that emphasize on teaching the technological as well as the administrative aspects. . Theory supplemented with extensive laboratory expertise will help these students, to avail these opportunities. Both these aspects i.e. theory and more of practical needs to stressed, such that a post-graduate student can start work directly in applied fields like-industry without any additional training. Thus, the university / college itself will be developing the trained and skilled man-power. We will find the trained teachers who can share their experiences on different aspects in microbiology, biotechnology and chemistry and we plan to restructure the syllabus in this viewpoint. The restructured syllabus will combine the principles of chemistry and biological sciences with technological disciplines to produce goods and services with proper management. Entrepreneurship curricula are operated at two levels viz. undergraduate and postgraduate. The undergraduate curricula are prepared to impart basic knowledge of the respective subject from all possible angles. The institute will raise the Entrepreneurship Park for the students admitted.

- **Duration of Course** – 02 years.

The students have to record their daily attendance biometrically, 80% attendance is must, otherwise the concerned will not be allowed for the examination. The students will be awarded the post graduate degree only after the installation of particular industry.

- **Fees structure**-As per the University rules and regulation. The fees to be paid in the beginning of the academic year.
- **Implant training**. - It will be of six weeks duration, depending upon the type of industry.

- **Objectives to be achieved:**

- To enrich students' with technical knowledge and train them in Entrepreneurship.
- To introduce the concepts of application of industrial microbiology, chemistry and biotechnology leading to a successful entrepreneur.
- To inculcate sense of scientific responsibilities and social and environment awareness.
- To help the students in building-up the progressive and successful career.

- **Eligibility-**

B. Sc. with Principle subject like- Entrepreneurship, Chemistry, Biotechnology, Agriculture, Agriculture Biotechnology, Botany, Zoology, Microbiology, Bioinformatics, Biochemistry, B. Pharmacy, Agri Business Management and Plant protection.

- **Mode of Selection -**

1. Degree examination score will be considered for 20% weightage.
2. The University /College will conduct the entrance examination based on the specially designed and displayed syllabus on the website of PAH Solapur University Solapur. Entrance examination score will be considered for 60% weightage.
3. Business plan presentation will be considered for 20% weightage.

Merit list will be displayed on the basis of (1), (2), (3) mentioned above.

M.Sc. Entrepreneurship Syllabus

Title

SEM I	Core	Code	Title of the Paper	Th (UA)	Th (CA)	Total	L	T	P	Credits
	Hard	HCT1.1	Industrial Chemistry-I	80	20	100	4			4
		HCT1.2	Microbial Technology- I	80	20	100	4			4
		HCT1.3	Agricultural Biotechnology- I	80	20	100	4			4
	Soft	SCT1.1	Entrepreneur Skill- I	80	20	100	4			4
	Any one	SCT1.2	Entrepreneur Skill -II	80	20	100	4			4
			Tutorial (Case study/ Success story)			25		1		1
			Practical							
	Hard	HCP1.1	Practical based on Industrial Chemistry-I	40	10	50			2	2
		HCP1.2	Practical based on Microbial Technology- I	40	10	50			2	2
		HCP1.3	Practical based on Agricultural Biotechnology- I	40	10	50			2	2
	Soft	SCP1.1	Practical based on Entrepreneur Skill- I	40	10	50			2	2
	Any one	SCP1.2	Practical based on Entrepreneur Skill- II	40	10	50			2	2
SEM II	Hard	HCT2.1	Industrial Processing- I	80	20	100	4			4
		HCT2.2	Industrial Chemistry- II	80	20	100	4			4
	Soft	SCT2.1	Industrial Chemistry-III	80	20	100	4			4
	any one	SCT2.2	Microbial & Agriculture Technology -II							
	OET	OET2.1	Entrepreneurial Funding and?	80	20	100	4			4
	any one	OET2.2	Business Legislation & IPR							
			Tutorial (Business presentation)			25		1		1
			Practical							
	Hard	HCP2.1	Practical based on Pitching & Funding	40	10	50			2	2
		HCP2.2	In Plant Training for specific module (6 weeks)	40	10	50			2	2
	Soft	SCP2.1	Practical based on Microbial & Agriculture Technology -II	40	10	50			2	2
	any one	SCP2.2	Practical based on Microbial & Agriculture Technology -II	40	10	50			2	2
	OET	OEP2.1	Practical based on Industrial Chemistry- II	40	10	50			2	2
	any one	OEP2.2	Practical based on Industrial Chemistry- II							

M.Sc. Entrepreneurship- I

Semester –I

Industrial Chemistry- I

Unit I: Nitration

Introduction; Nitrating agents, Aromatic nitration, Thermodynamics of Nitration's; Heat of Nitration ; Process equipment for technical nitration; Mixed acid for nitration- Acid processing, Mixed acid composition, D.V.S. Calculation, Relation between D.V.S. and Stability of Nitrator Charge; Typical industrial Nitration process (Nitrobenzene, and α -Nitronaphthalene).

Unit II: Sulphonation

Introduction; Sulphonating agents and their applications; Thermodynamics of sulphonation; The Desulphonation Reaction – General consideration, Separation of isomers, Raw material and waste Recovery ; working -up procedures; Industrial equipments and Techniques-Material of construction, Commercial Sulphonation Methods; Technical preparation of Sulfonates - Aromatic Sulfonates (The mono sulphonation of Benzene, Anthraquinome -1- Sulfonates).

Unit III: Halogenation

Introduction; Chlorination of cycloparaffins; Preparation of Ethylene dichloride; Design and Construction of Equipment for Halogenation; Technical Halogenations – Manufacturing processes for monochloroacetic acid, Chloral, Monochlorobenzene, and Vinyl chloride (Ethylene and Acetylene).

Esterification

Introduction; Esterification by organic acid; Esterification of carboxylic acid Derivative; Ester by addition to unsaturated system; Manufacture of ethyl acetate, Vinyl acetate, Cellulose acetate.

Unit IV: Polymerization

Introduction; Chemistry of polymerization reactions; Methods of polymerization, polymerization kinetics; Industrially importance polymerization and polymers: Phenolic, urea and melamine and alkyl resins, Polyamides, Polyesters, Epoxy resins, Polyethylene, Polypropylene, Vinyl polymers, Polystyrene, Acrylonitrile polymers.

Oxidation

Introduction; Types of oxidative reactions; Liquid phase oxidation with oxygen-Acetaldehyde to Acetic acid, Vapor phase oxidation aliphatic compound- oxidation of Methanol.

Microbial Technology- I

Unit-I

Aseptic technique:

Contamination, sterilization (heating, steam sterilization, tyndallization, dry heat, chemicals, radiation sterilization, filter sterilization), sterilization of air. Sterile area and its maintenance, environmental monitoring, types of environmental monitoring, methods of sterilization in pharmaceutical, disinfectants and antiseptics, evaluation of disinfectants.

Unit-II

Pure culture technique

Serial dilution, Streak plate, Pour plate, Spread plate. Cell Enumeration Techniques- Direct methods, DMC, Neubauer chamber, Indirect Methods- SPC/TVC, Membrane filter technique. Maintenance and preservation/stocking of pure cultures; cultivation of anaerobic bacteria.

Unit-III

Media, staining and Biochemical Tests: components of media, natural and synthetic media, chemically defined media, complex media, selective, differential, indicator, enriched and enrichment media. Living media- Eggs, cell lines, animals. Simple staining, Gram staining, Negative staining, Media composition, mechanism and significance- IMViC, test, Starch hydrolysis test, sugar utilization test, triple sugar iron agar test,

Unit-IV

Fundamentals of Fermentation:

Principal of exploitation of microorganism and their products, Design of other fermentation vessels, screening of microorganism, primary and secondary screening, strain development strategies, fermentation media, downstream processing, Waste Disposal.

Agricultural Biotechnology- I

Unit-I

Industrial Production of Biofertilizer: Nitrogen fixing bio-fertilizers: Concept & its need in organic farming, Rhizobium Bio fertilizer , Azotobacter Bio-fertilizer, Azospirillum Bio-fertilizer, Phosphate Solublizing Bio-fertilizers: VAM Bio-fertilizer, PSB Bio fertilizer (Phosphate Solublizing Bacteria), Quality control of Bio fertilizers as per FCO (Fertilizer Control Order)

Unit-II

Fermented Foods: Definition, types, advantages and health benefits, Dairy/Milk Based: Dahi/Yogurt, Buttermilk (Chach) and cheese, Vegetable Based: Pickels, Saeurkraut, Grain Based: Soy sauce, Bread, Jilebi, Miso, Tofu, Idli and Dosa, Probiotic Foods: Definition, types, microorganisms and health benefits.

Unit-III

Biopesticide:classification and general account of microbes used as Bioinsecticides, bioherbicides, biofungicides. Secondary Agriculture Biotechnology: Biomanure, biogas, biofuels – advantages and processing parameters.

Unit-IV

Enzymes in food processing: Need of enzymes, sources of enzymes, Applications of enzymes in: Production of high fructose syrup, Fruit juice industry, Baking industry, Oils and fat processing, Typical Fermentation processes – Industrial production of: Indol Acetic acid, Siderophores, Gibberellins’.

Entrepreneur Skill-I

Unit – I Purpose and process of communication: myths and realities of communication; paths of communication; oral communication; noise, barriers to communication; listening process, types of listening, deterrents to listening process, essentials of good listening; telephonic communication.

Unit – II Written communication: mechanics of writing, report writing, circulars, notices, memos, agenda and minutes; business correspondence-business letter format, style of letter arrangement, types of letters, telex managers, facsimiles, electronic mail; diary writing; development resume.

Unit – III Non verbal communication: gestures, handshakes, gazes, smiles, hand movements, styles of working, voice modulations, body sport for interviews; business etiquettes; business dining, business manners of people of different cultures, managing customer care.

Unit – IV Presentation skills & Soft Skills: prerequisites of effective presentation, format of presentation; Assertiveness – indicators of assertive behavior, strategies of assertive behavior; Communication skills for group discussion and interviews. Time management, working in group, table manners , Entrepreneurial competencies- Model of 15 Competenciesetc.

Entrepreneur Skill-II

Unit – I Nature & scope of managerial economics: nature of marginal analysis; alternative objectives of business firm; cardinal utility theory; indifference curve technique and the theory of consumer choice; consumer surplus; price, income and substitution effects; demand elasticity; demand estimation and forecasting; relationship between price elasticity and marginal revenue.

Unit – II Law of variable proportions: laws of return; optimal input combination; output-cost relation; engineering cost curves; technological change and production decisions; revenue curves of a firm; duopoly analysis using reaction curves; price-output decisions under alternative market structures; shut-down points; Baumol's sales maximization model, advertising and price-output decisions.

Unit – III Collusive behavior of firms: cartel behavior; game theory and strategic behavior; product differentiation and price discrimination; price-output decision in multi-plant and multi-product firms; managerial theories of the firm; general pricing strategies; special pricing techniques – limit pricing, peak load pricing and transfer pricing; dumping analysis; pricing of public utilities.

Unit – IV Risk analysis: investment and capital replacement decisions; locational choice of a firm; measures of national income; business cycles; operative aspects of macroeconomic policies; inflation analysis; tariff analysis.

Practical's: Semester- I

Code	Title of the practical	UA	CA	Total
HCP1.1	Practical based on Industrial Chemistry- I	40	10	50
<ol style="list-style-type: none">1.Estimation of Nitrogen by Kjheldhaj method.2.Preparation of p-nitroso N N dimethyl aniline.3.Colorimetric estimation of copper from the given sample.4.Estimate the amount of chlorine from bleaching powder.5.Determination of (a) Saponification value (b) Iodine value of an oil.6.Determination of viscosity and fluidity of given oil sample (a) edible oil (b) lubricating oil7. Visit to Textile industry and submission of report.8. Visit to Chemical and pharmaceutical industry and submission of report.				

Code	Title of the practical	UA	CA	Total
HCP1.2	Practical based on Microbial Technology- I	40	10	50
<ol style="list-style-type: none">1. Introduction and requirement for the Microbiology Laboratory2. Preparation of culture media and sterilization for the growth of microorganisms3. Pure culture techniques and Growth of microorganisms4. Basic staining techniques in microbiology5. Introduction to the Laboratory scale Fermenter6. Screening of antibiotic producing microorganism from soil by crowded plate technique7. Visit to the quality control laboratory and submission of report8. Visit to the Distillery unit and submission of report				

Code	Title of the practical	UA	CA	Total
HCP1.3	Practical based on Agricultural Biotechnology- I	40	10	50
1. Screening of <i>Rhizobium</i> and PSB from Rhizosperic soil 2. Small scale production of Nitrogen fixing organisms 3. Laboratory scale production of various dairy products 4. Laboratory scale production of various bakery products 5. Laboratory scale production of enzymes 6. Laboratory scale production of sauerkraut 7. Visit to the Biofertilizer production unit and submission of report 8. Visit to the Vasantdada Sugar Industry Manjari Pune or any well known sugar industry				

Code	Title of the practical	UA	CA	Total
SCP1.1	Practical based on Entrepreneur Skill- I	40	10	50
1. Introductory study about communication skills 2. Managements games related to planning & decision making. 3. To know the behavior of employee through body language 4. To study soft skills through participation in group activity 5. To know written/ Formal communication through correspondence to different agencies / offices. 6. To know the skills like critical thinking through managerial decisions in group activity. 7. Visit to Institute / Organization for the study of functioning of office. 8. Presentation / seminar about managerial skills pertaining to the modules with different case study. 9. Submission of Notes / Summary on Guest Lectures.				

Code	Title of the practical	UA	CA	Total
SCP1.2	Practical based on Entrepreneur Skill- II	40	10	50
<ol style="list-style-type: none"> 1. To know the concept of price elasticity. 2. To study about planning & decision making. 3. To study laws of variable proportions in industry. 4. To study the methods of pricing in different industries. 5. To study the value and risk analysis of the Commodity/ goods / product in the market. 6. To study the inflation and policy implied by the govt. agency. 7. Visit to Institute / Organization for the study of functioning of office. 8. Presentation / seminar about managerial skills with different case study. 9. Submission of Notes / Summary on Guest Lectures. 				

M.Sc. Entrepreneurship- I

Semester-II

Industrial Processing -I

Unit I

Introduction to Consumer Behavior and Consumer Research: Introduction, Consumer Behavior – Definition, Consumer and Customers, Buyers and Users, Organizations as Buyers, Development of Marketing Concept, Consumer Behavior and its Applications in Marketing, Consumer Research Process – Market Survey

Unit II

Marketing Segmentation: Introduction, Requirements for Effective Segmentation, Bases for Segmentation, Determining How Many Segments to Enter.

Unit III

Product Positioning: An Introduction, Positioning Strategy, Positioning Approaches, Positioning Errors
Consumer Motivation: Introduction, Needs and Goals, motivational Conflict, Defense Mechanisms, Motive Arousal, Motivational Theories, Maslow's hierarchy of needs, Motivation Research, Prediction of Consumer Psychology etc.

Unit IV Psychology Analysis in Business Setup & Success Story of Entrepreneurs:

A) Decision in Adverse Situation, Psychological equations, Business Attitude Development

B) Success Story

Dhirubhai Ambani-Reliance

Ratan Tata-Tata Groups

Narayana Murthy-Infosys

Azim H. Premji-Wipro

Lakshmi Mittal-Arcelor

Dr. Verghese Kurien-Amul

Anand Mahindra-Mahindra Group

Shiva Nadar-Hcl

Industrial Chemistry- II

Unit I:

Phosphorus industries: Calcium phosphate, manufacture of phosphoric acid, single and triple super phosphate, baking powder and DAP.

Sulphur and Sulphuric acid: Mining and manufacture of sulphur and manufacture of Sulphuric acid by contact process.

Nitrogen Industries: Ammonia and Manufacture of Urea, calcium cyanamide, ammonium nitrate, nitric acid.

Unit II:

Soap

Present status of soap and detergent industries; Raw materials for soap industry and their selection. Kinetics and Phase reactions in soap boiling. Physico- chemical properties of soap, Plants and Processes employed in soap manufacture. Recovery of by-products, various households and industrial soaps, soap additives, metallic soaps, miscellaneous application of soap-based products, testing and evaluation of soaps.

Synthetic detergents:

Synthetic detergents (anionic, cationic, non-ionic, and amphoteric), detergent additives. Formulations and processing of detergent powders, tablets, liquid and pastes for household and industrial applications. Biosurfactants and enzyme detergents, dry cleaning systems. Biodegradation of surfactants, Eutrophication and Ecological aspects, Eco-friendly washing systems. Natural saponin based surfactants. Modern trends in detergent formulations, Testing and evaluation of synthetic surfactants.

Unit – III

Food Chemistry; Classification, chemical composition and nutritional value of common foodstuffs, properties of foods, food preservation and processing, food deterioration, methods of preservation and processing by heat, cold, chill storage, deep freezing, drying, concentration,

fermentation, and radiation. Food quality; sensory evaluation, objective methods, non-nutritional constituents and food safety.

Unit – IV

Paints and Pigments Industries

Paints- Introduction; Classification of paints; Constituents of paints; Formulation of paints; Mixing of paints; Manufacturing processes of paints ; Failure of paints; Varnishes, Enamals, Emulsion paints- Constituents. Pigment- Manufacturing processes of zinc oxide and titanium dioxide, properties and application

Dyes

Classification of dyes according to the mode of applications and according to the chemical constitution; Methods of preparation of commercial dyes of different classes with suitable examples; Typical manufacturing processes of dyes; Fluorescent brightening agents

Industrial Chemistry- III

Unit I: Metallurgy Industry

Extraction and applications of metal alloys:

a) Iron and steel: Iron, steel alloy, tool steel, stainless steel. b) Aluminum

Cement Industry

Introduction; Classification and Manufacturing processes of Cement and Lime; Setting and Hardening process.

Glass Industry

Introduction; Physical and Chemical properties; Characteristics of glass; raw material Manufacturing process of glass; Ceramic- Raw material, manufacturing process of Whiteware, Glazing.

Unit II:

Metal finish technology: Electro refining of metals, electroplating of nickel, chromium, copper, cadmium, silver and Gold, surface treatment technology, surface coats. Introduction, Electro deposition, electroplating (Factors affecting, requirements and applications), hot dipping, metal cladding, immersion plating, metal spraying, vapor deposition and chemical and organic coating.

Chloralkali Industries: Soda Ash, Caustic Soda, Chlorine

Unit III:

Leather Chemistry: Introduction, constituents of animal skin, manufacture and preparation of hides, cleaning, soaking, liming and degreasing, finishing and sharing, tanning; leather, vegetable, chrome, tanning effluents; pollution and control.

Unit IV:

Petrochemicals

Crude oil, Natural gas, Petroleum hydrocarbons- Types and source of crude oil; Refining various petroleum fractions- Thermal cracking, Recycle cracking, Thermal cracking of fuel ;outline of

chemicals derived from natural gases/ paraffin hydrocarbon-Ethylene, PropyleneButylenes, Benzene, Toluene.

Microbial & Agriculture Technology II

Unit-I

Wine-Industrial production of -Red Table Wine, Sparkling Wine-Champagne, **Beer**- Ale, Lager, Raw materials, **Antibiotics:** Streptomycin, Penicillin, **Organic Acids:** Citric Acid, **Amino acids:** Glutamic Acid.

Unit-II

Tissue Culture-Techniques in plant tissue culture, micro propagation, culture of reproductive structures, synthetic seed technology, somaclonal variation, protoplast culture and somatic hybridization, secondary metabolite production, plant tissue culture industry, greenhouse hardening unit operation and management, germplasm conservation.

Unit-III

Commercial meat, egg and wool production- Development of practical and economic rations for sheep, goats, pigs, rabbits and poultry. Supply of greens, fodder, feeding regimes for young and mature stock. New trends in enhancing production and management. Feeding and management of animals under drought, flood and other natural calamities, Post harvest technology of agril and horticultural crops.

Unit-IV

Production of single cell protein (SCP) - Microorganisms and substrates used, techniques of production, nutritional value of SCP, economics of production, merits and demerits, Mushroom Cultivation System & Farm design, Compost & Composting, Spawn & Spawning, Casting materials & Case running, Cultivation of Button, Oyster and Straw Mushrooms

Entrepreneurial Funding and?

Unit No – I Doing Business in India: National Skill Development Corporation (NSDC), National Skill Development Agency (NSDA), Micro Units Development & Refinance Agency Ltd (MUDRA), Annasaheb Patil Arthik Vikas Mahamandal Maryadit, DIC Loan Scheme, Industrial Infrastructure Up gradation Scheme (IIUS) etc.

Unit No – II Fundamental of Accounting: Introduction: Finance, Liquidity and Accountancy: Meaning and scope of Accounting: Need, development and definition of accounting, Branches of accounting, Accounting Standards in India, Concepts, Objectives, Benefits, Overview of Accounting Standards in India.

Introduction to accounting concepts

- Basic concepts: accounts, debits, credit, , transactions, assets and liabilities.
- Types of accounts and rules of Generalizing
- Journal and ledger.
- Types of balance.
- Trial balance and final Account.

Unit No – III Introduction to Banking and Finance

Evolution of banking, Origin of the word 'Bank' ,Meaning and definition of bank , Evolution of banking in the West ,Evolution of banking in India.

Functions of Bank:-

Primary functions :A) Accepting deposits : Demand deposits: Current and Savings; Time deposits-Recurring and Fixed deposits B) Granting Loans and Advances- Term Loan, Short term credit, Overdraft, Cash Credit, Purchasing and Discounting of bills,

Secondary functions:A) Agency Functions- Payment and Collection of Cheques, Bills and Promissory notes, Execution of standing instructions, Acting as a Trustee, Executor. B) General Utility Functions: Safe Custody, Safe deposit vaults, Remittances of funds, Pension payments, acting as a dealer in foreign exchange.

Procedure for Opening of Deposit Account: Know Your Customer Norms (KYC Norms), application form, Introduction, Proof of residence, Specimen signature and Nomination: Their importance. No Frills Account

Procedure for Operating Deposit Account: Pay-in-slips, Withdrawal slips, Issue of pass book, (Current Savings or Recurring deposits), Issue of Cheque book, Issue of fixed deposit receipt, Premature encashment of fixed deposits and loan against fixed deposit. Recurring deposits: Premature encashment and loan against recurring deposit.

Closure of accounts

b) Transfer of accounts to other branches

3.4 Types of account holders

a) Individual account holders- Single or joint, Illiterate, Minor, Married woman, on-resident accounts

b) Institutional account holders- Sole proprietorship, Partnership firm, Joint stock Company, Hindu undivided family, Clubs, Associations and Societies and Trusts.

Methods of Remittances

Demand drafts, bankers' Cheques, Mail transfer, Telegraphic transfer, Electronic Funds Transfer., Definition, meaning and characteristics of Promissory note, Bill of Exchange and Cheque, Types of Cheques- Bearer, Order and Crossed, Types of Crossing- General and Special. Technology in Banking, Need and importance of technology in banking, ATM, Credit card, Debit card, Tele Banking- Net banking, SWIFT (Society for Worldwide Inter- bank Financial Telecommunication), Concept of Core Banking Solution.

Wallets and payment banks

Unit No – IV Introduction to software accounting

(With reference to Tally current version)

• Creating accounts. • Feeding opening balances. • Chart of accounts:– Capital.– Current assets.– Current liabilities.– Investments.– Loans.– Miscellaneous.– Sales.– Purchase.– Direct / Indirect income / expenses. Purchase and Sales • Purchase / Sales order. • Receipt note. • Purchase / Sales bills. • Debit / Credit note Journal, Voucher , VAT Bills Trial balance and final account • Ledger wise trial balance. • Trading account. • Profit and loss account. Balance sheet. • Outstanding. • Practical work and reports

Business Legislation & IPR

UNIT-I The India Contract Act: Essentials of a valid contract, void agreement, performance of contracts, breach of contract and its remedies, Quasi-Contracts.

UNIT-II The Sale of Goods Act: Contract of sale of goods, conditions and warranties, transfers of property, rights of an unpaid seller; the negotiable instruments act; nature and types; negotiation and assignment holder-in due course, dishonor and discharge of a negotiable instrument, arbitration

UNIT-III The Company Act 1956(Revised Act 2013): Nature and types of companies; formation; memorandum and articles of association; prospectus, shares and share capital, allotment of shares. Membership in Company: Borrowing powers; management and meeting; accounts and audit; compromise arrangements and reconstruction; prevention of oppression and mismanagement; winding up;

UNIT-IV Consumer Protection Act 1986 and Cyber Law and IPR, Patent, trade mark etc.

Practical's: Semester- II

Code	Title of the practical	UA	CA	Total
HCP2.2	Practical based on Industrial Chemistry- II	40	10	50
<ol style="list-style-type: none">1. Preparation of Soap.2. Estimation of Cu & Zn in brass alloy.3. Estimation of calcium oxide in cement.4. Preparation and characterization of polymers and paints.5. Preparation of dyes.6. Preparation of agrochemicals7. Visit to agrochemical Industry and submission of report.8. Visit to Cement Industry and submission of report.				

Code	Title of the practical	UA	CA	Total
SCP2.2	Practical based on Microbial & Agriculture Technology -II	40	10	50
<ol style="list-style-type: none">1. Laboratory scale production of Wine using grapes/fruits2. Laboratory scale production of Beer using barley/grains3. Laboratory scale production of Citric acid using <i>Aspergillusniger</i>4. Laboratory scale production of Penicillin using <i>Penicillium</i> species5. Laboratory scale production of mushroom6. Study of food preservation methods for egg, meat, fish and products7. Visit to the food processing industry8. Visit to the winery/brewery industry				

Code	Title of the practical	UA	CA	Total
OEP2.1	In Plant Training for specific module (6 weeks)	40	10	50
1. Introductory study 2. Production technology 3. Harvesting and packaging 4. Marketing and sale 5. Economics (Food/Leather/Beverages/Dyes/Glass/Metal/Agro/Pharma/Dairy/other relevant industry)				

Code	Title of the practical	UA	CA	Total
OEP2.1	Practical based on Pitching & Funding	40	10	50
1. To know the schemes available Govt. / public or private for funding to new establishments. 2. To know the software accounting Tally 3. To study the banking Procedure related to a/c opening 4. To study about the Funds transfer procedure. 5. To study about Banking functions in Indian market. 6. To study business attitude in the market. 7. To study the Financial activities. 8. Visit to banking institutions.				