Vanita Vishram Women's University
School of Commerce & Business Management
Course Code: BM31010
B.B.A. Semester: I
Generic Elective: Micro Economics for Managers
Credit: 6

Objectives:

To help learners to

- Integrate economic theory with business practice.
- Apply economic principles to solve business problems.
- Use economic ideas for crisis management.
- Allocate scarce resources for optimizing returns.

Course Content:

Module	Content	Weightage
1	**A. Introduction to Micro Economics:** • Meaning • Definition • Characteristics • Role of micro economics in firms. **B. Decision Making & Forward Planning:** • Concept of decision Making & Forward Planning. • Role of Manager in Decision Making & Forward Planning. • Use of micro economics concepts in decision making.	20%
2	**A. Production Function:** • Meaning • Definition • Types: Short Run, Long Run, **B. Concept of cost**: • Definition • Cost function • Types of cost (short run cost, long run cost, explicit cost, implicit cost, opportunity cost, private and social cost.) • Importance of all the cost in deciding the price.	20%
3	**Managerial Decisions in Competitive Markets**: • Introduction • Meaning, • Types of Market: Perfect Competition & Imperfect Competition **A. Perfect Competition:** • Meaning	25%

School of Commerce And Business Management
Vanita Vishram Women's University, Athwagate, Surat
* Surat *

Abhilasha Agarwal

	• Features of perfect competition • Equilibrium • Price-Output determination under perfect competition **B. Monopoly:** • Meaning • Features • Equilibrium position	
4	**A. Monopolistic competition:** • Definition • Product Differentiation Output and pricing decisions • Selling Cost • Effect of selling cost on demand. **B. Oligopoly:** • Meaning • Definition • Features • Pricing decision in an oligopoly • The Kinked Demand curve model.	**25%**
5	Group discussion, Case Study, Guest lectures on practical aspects	**10%**

Reference Books:

Sr. No.	Title	Author/s	Publication
1	Managerial Economics Theory and Applications,	D. M. Mithani	Himalaya Publication
2	Modern Economic Theory,	K. K. Dewitt,	S. Chand Publication
3	Managerial Economics	P. L. Mehta	S. Chand Publication
4	Managerial Economics	Dominick Salvatore & Ravikesh Srivastava	Oxford University Press
5	Managerial Economics-1	Dr. D. M. Mithani	Himalaya Publication
6	Principal of Economics	M. John Kennedy & G. R. Arora	Himalaya Publication

Course Outcomes:

After completion of the course, the student will be able to

- ✓ Develop the skills in decision-making for the managers
- ✓ Understand the microeconomic approach & their application in a firm.
- ✓ Apply the model of market supply and demand in market analysis.
- ✓ Develop the ability to maintain equilibrium in perfect competition and in Imperfect Competition.

VANITA VISHRAM WOMEN'S UNIVERSITY
SCHOOL OF SCIENCES AND TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY

VANITA VISHRAM
WOMEN'S UNIVERSITY
SURAT

VANITA VISHRAM WOMEN'S UNIVERSITY SURAT

BACHELOR OF SCIENCE (B.SC.) HONOURS BIOTECHNOLOGY PROGRAMME

Under Learning Outcomes-based Curriculum Framework (LOCF) for Under Graduate (UG) Education

SEMESTER 1
Generic Elective Course (GEC)

Syllabus applicable to the students seeking admission in the following Programme
B.Sc. Biotechnology under LOCF w.e.f. the Academic Year 2021-2022

SEMESTER 1
GENERIC ELECTIVE COURSE PAPER 1
Ecology and Environment Management

Course Objectives:

1. The main objective of this paper is to create an awareness about the environment and to manage environmental problems.
2. This course focuses on the ecosystem and its components, energy transfer in ecosystem, various types of environmental pollution, conservation strategies with sustainable management.
3. To give knowledge of natural systems which make life possible on earth.
4. To realize the learners about that human are part of this system and depend on them.
5. To aware how human activity adversely affect the natural system and damage them.
6. To make learners aware of the environmental issues and their management.

Course Outcome:

By the end of the course,

1. The students will have a better appreciation for the environment and become responsible citizen.
2. They will be able to understand the factors leading to environmental problems, their reasons and their impact on the environment.
3. This knowledge can help to form strategies for conservation of natural system and sustainable management.
4. Sprouting of an understanding of sustainable development to meet the needs of the present, without compromising the ability of future generations to meet their own needs.
5. Development of a sense of responsibility and concern for the welfare of the environment and all organisms.

BT31010 - THEORY COURSE CONTENT
(4 Credits)

UNIT 1	1. Environment and Ecosystem 1.1. Our Environment: Geological consideration of Atmosphere, Hydrosphere, Lithosphere Scope ofEcology 1.2. Development & Evolution of Ecosystem 1.3. Principles & Concepts of Ecosystem 1.4. Structure of ecosystem 1.4.1. Strata of an ecosystem 1.4.2. Types of ecosystems including habitats 1.4.3. Cybernetics & Homeostasis 1.5. Biological control of chemical environment 1.6. Ecosystem under threat 1.7. Deforestation and forest management	15 Lectures
UNIT 2	2. Ecosystem and Energy 2.1. Energy transfer in an Ecosystem 2.2. Food chain, food web, Energy budget, Production & decomposition in a system 2.3. Ecological efficiencies, Trophic structure & energy pyramids, Ecological energetic, principles pertaining to limiting factors 2.4. Bio-geochemical cycles (N, C, P cycles)	15 Lectures
UNIT 3	3. Environment and Pollution 3.1. Pollution & environmental Health related to Soil, Water, Air, Food, Pesticides, Metals, Solvents, Radiations, Carcinogen, Poisons	18 Lectures

	3.2. Detection of Environmental pollutant and management 3.3. Indicators & detection systems 3.4. Bio-transformation, Plastic, Aromatics, Hazardous wastes 3.5. Bioremediation 3.6. Waste disposal 3.7. Environmental cleanup: Case studies	
UNIT 4	4. Environment and Energy management 4.1. Renewable and non-renewable energy sources 4.2. Energy resources 4.3. Energy demand 4.4. Conservation and management of energy resource	10 Lectures

SUGGESTED READING

1. Chapman, J.L., Reiss, M.J. 1999. Ecology: Principles and applications (2nd edition) CambridgeUniversity Press.
2. Divan Rosencraz, Environmental laws and policies in India, Oxford Publication.
3. Ghosh, S.K., Singh, R. 2003. Social forestry and forest management. Global Vision PublishingHouse
4. Joseph, B., Environmental studies, Tata Mc Graw Hill.
5. Michael Allabay, Basics of environmental science, Routledge Press.
6. Miller, G.T. 2002. Sustaining the earth, an integrated approach. (5thedition) Books/Cole,Thompson Learning, Inc.
7. Mohapatra Textbook of environmental biotechnology IK publication.
8. Rana SVS, Environmenta lpollution – health and toxicology, Narosa Publication.
9. Sinha, S. 2010. Handbook on Wildlife Law Enforsement in India. TRAFFIC, India.
10. Thakur, I S, Environmental Biotechnology, I K Publication.

BT31020 - LAB COURSE CONTENT

(2 Credits)

1. Study of all the biotic and abiotic components of any simple ecosystem- natural pond or terrestrial ecosystem or human modified ecosystem.
2. Determination of population density in a terrestrial community or hypothetical community by quad rate method and calculation of the Simpson's and Shannon- Weiner diversity index for the same community.
3. Principle of GPS (Global Positioning System).
4. Study of the life table and fecundity table, plotting of the three types of survivorship curves from the hypothetical data.
5. Study of the types of soil, their texture by sieve method and rapid tests for –pH, chlorides, nitrates, carbonates and organic carbon
6. Study any five endangered/ threatened species- one from each class.

VANITA VISHRAM WOMEN'S UNIVERSITY, SURAT
SCHOOL OF SCIENCE AND TECHNOLOGY
Department Of Computer Science
BCA Programme
FY BCA Semester I

Paper No: CS31010 -- GENERIC ELECTIVE COURSE I — **L: 4 Hrs.**

Paper Title: OFFICE APPLICATION — **Credit: 4**

Course Code	CS31010
Course Title	OFFICE APPLICATION
Credit	4
Teaching per Week	4 Hrs.
Minimum weeks per Semester	15 (Including Class work, examination, preparation, holidays etc.)
Last Review / Revision	June 2021
Purpose of Course	To studying basic about computer Fundamentals to explore concepts and develop computer basic skills.
Course Objective	• Teach the basics of office application tools particularly with respect to daily office and business-related needs. • Give students an in-depth understanding of why office automation tools are essential components in business and society in general.
Pre-requisite	--
Course Out come	• The students will be able to use various Office Application Tools like Word processor, Spread sheet software, Presentation software and Internet.
Evaluation Method	60% Internal Assessment 40% External Assessment

Course Content

Unit	Content	Hours	Weightage in %
1	**Unit 1. Introduction** 1. Concept of Icon, Menu 2. Creating Folders and Shortcuts 3. Finding Files & Folders. 4. Creating, Copying, Moving and Deleting files	10	15%
2	**Unit 2. Word Processor** 2.1 Typing, Editing, Proofing & reviewing 2.2 Formatting text & Paragraph 2.3 Mail Merge 2.4 Automatic Formatting and Styles 2.5 Working with Tables 2.5 Graphics and Frames	10	25%
3	**Unit 3. Presentation Software** 3.1 Creating and Updating Slides and objects in the slide	10	20%

VANITA VISHRAM WOMEN'S UNIVERSITY ★ SURAT ★

	3.2 Animation 3.3 Creating and Running Slide Show 3.4 Presentation Templates		
4	**Unit 4. Spreadsheet Software** 1. Concept of worksheet 2. Working & Editing in Workbooks 3. Creating Formats & Links 4. Protecting and Hiding data 5. Built in Functions (Mathematical, Statistical, and String & Date) 6. Formatting a Worksheet 7. Creating Charts (Graphics), and Formatting and Analysing data, 8. Organizing Data in a List (Data Management), 9. Printing of sheet	**10**	**20%**
5	**Unit 5. Internet and Security Issues** 1. Concepts WWW, URL 2. Mailing & surfing tools 3. Online Data Backup 4. Computer network, topology, LAN, MAN and WAN 5. Basic security issues: Computer viruses, malware, Trojan horse etc	**20**	**20%**

Reference Books / Teaching Methodology / Evaluation Method:

Reference Books	**Main Readings:** 1. OpenOffice.org for Dummies - Gurdy Leete, Ellen Finkelstein, Mary Leete - Wiley Pub. 2. Beginning OpenOffice 3: From Novice to Professional - Andy Channellle - Apress Pub. 3. The OpenOffice.org 2 Guidebook - Solveig Haugland 4. Taming Apache OpenOffice: Getting Started - Jean Hollis Weber-Friends of OpenDocument Inc. 5. Open Office Basic: An Introduction - James Steinberg - Gold Turtle Pub.
	Supplementary Reading: 1. PC Software for Windows 2003 Made Simple, - R K Taxali, - TMH 2. 2007 Microsoft Office System Plain & Simple, Joyce & Moon, - PHI 3. Internet 6 in 1 – Joe Krayuak&Harbraken, PHI 4. Introduction to Computer Science-Pearson Education-ITL ESL 5. Introduction to Computers-PeterNorton-TheMcGraw-Hill Companies
Teaching Methodology	Class Work, Discussion, Self-Study, Seminars and/or Assignments
Evaluation Method	60% Internal Assessment 40% External Assessment

VANITA VISHRAM WOMEN'S UNIVERSITY ★ SURAT ★

VANITA VISHRAM WOMEN'S UNIVERSITY, SURAT
SCHOOL OF SCIENCE AND TECHNOLOGY
Department Of Computer Science
BCA Programme
FY BCA Semester I

Paper No: CS31020 -- GENERIC ELECTIVE – I PRACTICAL — **P: 4 Hrs.**

Paper Title: Office Application Practical — **Credit: 2**

Practical shall be conducted for the Paper CS31010 Office Application

Course Code	CS31020
Course Title	Office Application Practical
Credit	2
Teaching per Week	4 Hrs.
Minimum weeks per Semester	15 (Including Class work, examination, preparation etc.)
Review / Revision	June 2021
Purpose of Course	• Practical based on **CS31010 (OFFICE APPLICATION)** • Practical implementation of word, excel and power point presentation covered as part of syllabus using required software and learning areas. • Understanding and learning basic concepts, of office applications.
Course Objective	To help learners to • Teach the basics of office application tools particularly with respect to daily office and business-related needs. • Give students an in-depth understanding of why office automation tools are essential components in business and society in general.
Pre-requisite	Basic of Computer
Course Out come	After completion of the course, the student will be able to • The students will be able to use various Office Application Tools like Word processor, Spread sheet software, Presentation software and Internet.
Course Content	Practical based on Course: OFFICE APPLICATION
Reference Book	As per paper number : **CS31010 (OFFICE APPLICATION)**
Teaching Methodology	Lab Work
Evaluation Method	100% Internal assessment.

VANITA VISHRAM WOMEN'S UNIVERSITY ★ SURAT ★

School of Humanities & Social Sciences

Department - History

Subject - Generic Elective

Semester - 1 and 2

Name & Signature - (Dr. I. A. Surati)
Dean, SOHASS

SEMESTER 1
GENERIC ELECTIVE COURSE PAPER 1 ([redacted])

SCIENCE, TECHNOLOGIES & SOCIETY

Course Objectives

The course aims to:

This course proposes to examine the histories of science and technology with respect to social acceptance, economic viability and politics associated with it. While dealing with the history of science and technology this paper challenges the notion of 'modern origins of science in western societies'. Human instinct to understand unknown and need to predict future which often venture into providence has been explored through case study of astronomy and astrology. Paper analyses impact of hegemony of Colonial science on traditional knowledge systems. Paper proposes two case studies to highlight the highly contested heritage of science. The thin line between military and peaceful use of technology in the capitalist economy also constitute important component of paper. A brief discussion on Science and the nation making has been introduced to highlight the role of important figures who shaped the nature of Scientific development in India.

Course Outcomes

After completing the course, the students will be able to:

- Critique the prevalent dominant understanding of science and technology.
- Discuss the complex relations between science, technology and society.
- Examine the role of politics associated with scientific and technological developments and its economics in the capitalist economy.
- Examine the character of 'dual use' technologies.
- Understanding the development of Science and Technology in India from ancient to modern times.

COURSE CONTENTS

Unit 1 Inventions during Lithic Age

a) Palaeolithic and Neolithic
b) Metal Age – Copper, Bronze, Iron
c) Writing and Numerals

Unit 2 Indian 'Scientific' Heritage

a) Astronomy and Mathematics
b) Art and Architecture
c) Medicine and Biology

Unit 3 Science and Technology in Colonial India

a) European Initiative – Portugese and French
b) Exchange of Indo-European Scientific Practices
c) Arrival of Botany, Chemistry and Education

Unit 4 Nation in making

a) India's Achievements in Science and Technology
b) Medicine, Botany, Biology
c) Role of Science in enlightening the citizen

Teaching Methods to include as a part of Experiential Learning

- Assignment
- Project Work
- Quiz
- Viva-Voce

Essential Readings

- A.J. Qaisar, *Indian Response to European Technology and Culture AD 1498-1707*, Oxford University Press, Bombay, 1982.
- D.D. Kosambi, 'Atomic Energy for India' in Ram Ramaswamy, ed., D.D. Kosambi: *Adventures into the Unknown*, Three Essays, Gurgaon, 2016, pp. 59-70.
- Eliot Marshal, 'Is the Friendly Atom Poised for a Comeback? in Mahesh Rangarajan, Ed., *Environmental Issues in India: A Reader*, Pearson, Delhi, 2007, pp. 544-49.
- Gunakar Mule, *Bhartiya Itihas men Vigyan*, Delhi, 2005. Hindi. Chapters: Vigyan aur Samaj, Jyotish ka Arambh aur Vikas, Vaidik Ganit ki Sameeksha).
- Irfan Habib. *Technology in Medieval India. c. 650-1750*. New Delhi: Tulika, 2008.
- J.D. Bernel, *Science in History*, Vol-I: The Emergence of Science, Penguin Books, Middlesex, 1969, pp. 27-57.

- O.P Jaggi- History of Science, Technology and Medicine in India
- O.P Jaggi - Scientists of Ancient India and Their Achievements
- Kapil Raj, 'Thinking Without the Scientific Revolution: Global Interactions and the Construction of Knowledge', *Journal of Early Modern History*, Vol. 21, 2017, pp. 445-458
- Zaheer Baber – The Science of Empire: Scientific Knowledge, Civilization, and Colonial Rule in India
- Mayank Kumar, 'Traditional Notions of Monsoon' in Mayank Kumar, *Monsoon Ecologies: Irrigation, Agriculture and Settlement Patterns in Rajasthan during the Pre-Colonial Period,* Manohar, Delhi, 2013, pp. 105-118.
- Meera Nanda, 'Nothing that is: Zero's Fleeting Footsteps', in idem, *Science in Saffron: Sceptical Essays on History of Science*, Three Essays Collective, Delhi, 2016, pp. 49-92.
- Pradip Mazumdar, 'The Generic manoeuvre', *Economic and Political Weekly*, Vol. LII, No. 35, September 2017, pp. 22-26.
- Kalpana Raja Ram- Science and Technology in India
- Bal Ram Singh, Nath Girish and Umesh Kumar Singh- Science and Technology in Ancient Indian Texts
- Ravindra Kumar, 'Composite Culture: Portrayal in Architecture', in B.L. Bhadani, ed., *Medieval India 3: Researches in the History of India*, Manohar, Delhi 2012, pp. 47-75.
- Richard Grove, "Indigenous Knowledge and the Significance of South-West India for Portuguese and Dutch Constructions of Tropical Nature", *Modern Asian Studies*, Vol. 30 No.1, February 1996, pp. 121-143.
- S. Irfan Habib & Dhruv Raina, 'Introduction' in *Social History of Science in Colonial India*, Oxford University Press, 2007, pp. XII-XL. (Revised version published as S. Irfan Habib & Dhruv Raina, 'Introduction' in *Social History of Science in Colonial India*, OUP, 2007, pp. XII-XL.)
- Somaditya Banerjee, *Meghnad Shaha: Physicist and Nationalists*, Physics Today, Vol. 69, No. 8, August 2016, pp. 39-44.
- Spenta R. Wadia, 'Homi Jehangir Bhabha and the Tata Institute of Fundamental Research', *Current Science*, Vol.96, No.5, March 2009, pp. 725-33.
- V.V. Krishna, 'Science, Technology and Innovation Policy 2013: High on Goals, Low on Commitment', *Economic and Political Weekly*, April 20, 2013, pp. 15-19.
- Vijay K. Nagaraj and Nithya V Raman, 'Are we prepared for another Bhopal', in Mahesh Rangarajan, Ed., *Environmental Issues in India: A Reader*, Pearson, Delhi, 2007, pp.530-43.
- Zimmerman F., 'Monsoon in Traditional Culture', in *M*onsoon, eds. Jay S. Fein and Pamela L. Stephens, John Willey & Sons, New York, Chichester, Brisbane, Toronto, Singapore, 1987, pp. 51-76.]

Suggested Readings

- *The Fugitive*: A movie featuring Harrison Ford.
- Nandini Bhattacharya, 'Interrogating the Hegemony of Biomedicine', *Economic and Political Weekly*, Vol. LIII, No. 9, March 2018, pp. 45-47.

VANITA VISHRAM WOMEN'S UNIVERSITY

SCHOOL OF HUMANITIES & SOCIAL SCIENCES

DEPARTMENT OF PSYCHOLOGY

VANITA VISHRAM
WOMEN'S UNIVERSITY
SURAT

BACHELOR OF ARTS (B.A.) HONOURS PSYCHOLOGY PROGRAMME

under Learning Outcomes-based Curriculum Framework (LOCF) for Under Graduate (UG) Education

SEMESTER 1

Generic Elective (GE)

Syllabus applicable to the students opting for
Generic Elective (GE) Psychology in SEM 1
w.e.f. the Academic Year 2021-2022

SEMESTER 1
GENERIC ELECTIVE COURSE PAPER 1 (GE101)

PSYCHOLOGY IN EVERYDAY LIVING

Course Objectives

The course aims to:

- appreciate principles of psychology involved in everyday living.
- apply the principles of psychology and achieve desired behaviour in real life scenarios.
- develop basic concepts of cognitive, conative and affective process in psychology.
- analyse the theories of personality and intelligence

Course Outcomes

At the end of the course, the students will be able to:

- remember the key aspects that drive human behaviour required in everyday life.
- apply psychological concepts for problem solving in real life situations.
- improve interpersonal interactions and adjustment in life.
- journal their irrational beliefs from rational beliefs.

COURSE CONTENTS

Unit 1 Introduction to Psychology

- Orientation to Psychology: Nature, fields and applications of psychology
- Cognitive Processes: Learning, memory and problem solving
- Conative Processes: Motivation, types of motives (Socio genic / Psycho genic motives)
- Affective Processes: Emotion, Positive and negative emotion

Unit 2 Introduction to Psychology

- Psychology of Individual Differences: Theories of personality: Freudian psychoanalysis, type and trait, humanistic
- Theories of intelligence: Spearman 'g' theory, Sternberg and Gardner
- Emotional intelligence
- Application of intelligence and personality in everyday life

(Dr. I. A Shaikh)
Dean, SOHASS

Unit 3 Lifespan Development

- Understanding Developmental Processes: Piaget & Vygotsky
- Moral Development: Kohlberg
- Psycho-social Development: Erikson
- Observations of the above theories as case study.

Unit 4 PowerPoint Presentation, discussions and/or surveys based on the above units.

Suggested Readings

- Banyard, P., Davies, M.N.O., Norman, C. & Winder, B. (Eds.) (2010). Essential psychology. New Delhi: SAGE Publications.
- Baron, R. & Misra.G. (2014). Psychology. New Delhi: Pearson
- Ciccarelli , S. K & Meyer, G.E (2008). Psychology (South Asian Edition). New Delhi: Pearson
- Feldman.S.R. (2009).Essentials of understanding psychology (7th Ed.) New Delhi : Tata McGraw Hill.
- Michael ,W., Passer, Smith,R.E. (2007). Psychology The science of mind and Behavior. New Delhi:Tata McGraw-Hill.
- Morgan, C T., King, R., Weisz, J. & Schopler, J. (2017) .Introduction to Psychology (7th Ed). McGraw Hills.
- Holt, N., Bremner, A., Sutherland, E., Vliek, M. and Passer, M., & Smith, R. (2015). Psychology: The Science of Mind and Behaviour. London: Tata McGraw-Hill

VANITA VISHRAM WOMEN'S UNIVERSITY

SCHOOL OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF CHEMISTRY

VANITA VISHRAM
WOMEN'S UNIVERSITY
SURAT

BACHELOR OF PROGRAMME

under Learning Outcomes-based Curriculum Framework (LOCF)
for Under Graduate (UG) Education

SEMESTER 1

Generic Elective Courses (GE)

Syllabus applicable to the students seeking admission in the following programmes
B.A. /B.Com./B.B.A./B.Sc./B.C.A. under LOCF
w.e.f. the Academic Year 2022-23

VANITA VISHRAM WOMEN'S UNIVERSITY * SURAT

1. Preamble – VVWU

Vanita Vishram Women's University (VVWU) is the First-ever Women's University of Gujarat approved by the Government of Gujarat under the provisions of the Gujarat Private Universities Act, 2009. It is a University committed to achieve Women's Empowerment through Quality Education, Skill Development, and by providing employment opportunities to its girl students through its model curriculum, integration of technology in pedagogy and best-in-class infrastructure. The focus is on prioritizing practical component and experiential learning supported through academia-industry linkages, functional MoUs, skill development training, internships etc. It aims at providing opportunities to the girl students for holistic development and self-reliance.

VISION

Empowerment of women through quality education and skill development, so as to make them strong pillars of stability in the society.

MISSION

To provide Education & Professional Training to all women for their all-round development, so as to enable them to become economically independent and socially empowered citizens.

VANITA VISHRAM WOMEN'S UNIVERSITY * SURAT

SEMESTER 1
GENERIC ELECTIVE COURSE PAPER 1
CH31090

Chemistry in Daily Life - I

Course Objectives

- Develop an appreciation for the importance of the role of chemistry in everyday life.
- Improve their ability to think critically and logically.
- Make students more aware of the chemicals found in all aspects of daily life.
- Become knowledgeable about the connection between chemistry and pollution, health care, energy, nutrition and life, and visual arts.
- Apply knowledge of chemistry to improve quality of life.

Course Outcomes

After completing the course, the students will be able to:
Basic concepts about chemistry and role of chemistry in daily life and connection between chemistry and nutrition and life.

COURSE CONTENTS

Unit- 1

(A) Scope and Importance of Chemistry in Life

Introduction, Chemical basis of life, Periodic table, Elements in the human body, Essential, Non-essential elements,

(B) Chemistry of Carbon

Bonding in Carbon – The Covalent Bond, Versatile Nature of Carbon, Allotropes of carbon, diamond, graphite, graphene, Saturated and Unsaturated Carbon Compounds, Chains, Branches and Rings, Homologous Series, Nomenclature of Carbon Compounds, Activated Carbon

Unit-2 Chemistry of Foods

(A) Food Additives:

Stabilizers, Gums, Thickeners and Gelling Agents as Food Additives
Sweeteners, classification of sweeteners, Fragrances, Flavouring agents and Enhancers, Parent compounds, chemical structure and plant source of such Flavouring agents, Food colour and Colour Retention Agents

(B) Food Adulteration:

Adulteration: Definition of Adulteration and Adulterant, Reasons of Adulteration, Types of Adulterants, Methods for detection of different adulterants in some common food items:

(1) Milk
(2) Milk products: Sweet curd, Rabdi, Khoa & its product, Chhana or Paneer, Ghee, Cottage cheese, condensed milk, Khoa, Ghee, Butter.
(3) Spices: Whole spices, Black Pepper, Cloves, Mustard seed and Powdered spices.
(4) Sweetening agents: Sugar, Pithi sugar, Honey, Jaggery, Burasugar.

Unit-3

(A) Chemistry of Water

Introduction, Chemical and physical properties of Water, Natural water, Turbidity, Colour, Taste, Odour, pH, TDS, Alkalinity, Chloride, water sterilization, Infectious Agents, Water Quality, Hardness, Water Softening, Ion exchange, Reverse Osmosis, Electrocoagulation, Electrodialysis, Waste Water

(B) Acid, Bases and Buffers

Acid and Base theories, Common acids and Base example in daily life, Properties of acid, properties of base, Reaction of Acid and Base, pH Scale, Water dissociation constants, Buffers, Acidic buffers, Basic buffers, pH of buffers

Unit-4

(A) Chemistry in Arts, communication and Transport

Art History and chemistry, Art Conservation, Art Historian, Paper, Gum Paste, Writing/Fountain Pen Ink, Chalk Crayons, Adhesives Chemistry and Communications, Chemistry and Transportation, Rubber Relationship between light and colour, Electromagnetic Spectrum, Cause of colour in objects, Properties of Light. The Nature and Behavior of Light, Mixing Colors: Light vs. Pigments, Colorants: Pigments and Dyes

(B) Chemistry in agriculture and plant protection

Composition of soil, components in soil-micro and macronutrients, Food for plants, nutrient deficiencies in plants. Fertilizers, composting, pesticides and their toxicities. Insecticides, fungicides.

Reference Books:

- B. K. Sharma: introduction to Industiral Chemistry, Goel Publishing, Meerut (1998)
- Medicinal Chemistry by Ashtoush Kar.
- Drugs and Pharamaceutical Sciences Series, Marcel Dekker, Vol. II, INC, New York
- Analysis of Foods – H.E. Cox: 13. Chemical Analysis of Foods – H.E.Cox and pearson.
- Foods: Facts and Principles. N. Shakuntala Many and S. Swamy, 4th ed. New Age.

- International (1998) 6. Physical Chemistry – P l Atkins and J. de Paula – 7th Ed. 2002, Oxford University Press.
- Handbook on Feritilizer Technology by Swaminathan and Goswamy, 6th ed. 2001, FAI.
- Organic Chemistry by I. L. Finar, Vol. 1 & 2. 9. Polymer Science and Technology, J. R. Fired (Prentice Hall).

SEMESTER 1
GENERIC ELECTIVE COURSE PAPER 1
CH31100

Chemistry in Daily Life - I

Practicals

Course objective:

- To perform the pH meter instrument with various samples.
- To perform melting point and boiling point detection.
- To perform experiments based on household chemicals and food samples.
- To perform simple acid-base exercises.

Course Outcomes

After completing the course, the students will be able to: learn the basics expertise of sample purity, separation and isolation methods, melting points and boiling points.

COURSE CONTENTS

Any Eight Practicals

1. Application and working of common glassware and laboratory apparatus.
2. ChemSafLabs: Part -1: Safety symbols and MSDS Part -2: Prevention of accidents and first aid measures
3. Determination of pH of different everyday life chemical solution.
4. Isolation of casein from milk samples.
5. Determination of alkalinity in water.
6. Determination of melting point and boiling point.
7. Separation by distillation of homogeneous binary liquid mixtures.
8. Determination of strength of household acids.
9. Determination of percentage purity of acetic acid in food grade Vinegar.
10. Some quick test for detection of adulterants in food samples like milk, milk products, powdered spices and sweetening agents.

Reference Books:

- Vogel's qualitative organic analysis.
- Vogel's inorganic qualitative analysis.
- Organic Chemistry by Bahl & Bahl.
- "Text book of Organic Chemistry" by P. S. Kalsi, 1999, MacMillan of India Pvt. Ltd.
- Chemistry in daily life, by Kirpal Singh, 2012, PHI Learning Private Limited.

TEACHING METHODOLOGY

The teaching methodologies utilized for effective learning process in the course are:

1. Direct instruction/Lecture method
2. Problem solving Method
3. Small group teaching
4. The discussion Method
5. The study assignment method
6. ICT based teaching
7. Demonstration Method
8. Seminar based Learning
9. Project based Learn in

VANITA VISHRAM WOMEN'S UNIVERSITY

SCHOOL OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF CHEMISTRY

VANITA VISHRAM
WOMEN'S UNIVERSITY
SURAT

BACHELOR OF PROGRAMME

under Learning Outcomes-based Curriculum Framework (LOCF)
for Under Graduate (UG) Education

SEMESTER 1

Generic Elective Courses (GE)

Syllabus applicable to the students seeking admission in the following programmes
B.A. /B.Com./B.B.A./B.Sc./B.C.A. under LOCF
w.e.f. the Academic Year 2022-23

VANITA VISHRAM WOMEN'S UNIVERSITY * SURAT

1. Preamble – VVWU

Vanita Vishram Women's University (VVWU) is the First-ever Women's University of Gujarat approved by the Government of Gujarat under the provisions of the Gujarat Private Universities Act, 2009. It is a University committed to achieve Women's Empowerment through Quality Education, Skill Development, and by providing employment opportunities to its girl students through its model curriculum, integration of technology in pedagogy and best-in-class infrastructure. The focus is on prioritizing practical component and experiential learning supported through academia-industry linkages, functional MoUs, skill development training, internships etc. It aims at providing opportunities to the girl students for holistic development and self-reliance.

VISION

Empowerment of women through quality education and skill development, so as to make them strong pillars of stability in the society.

MISSION

To provide Education & Professional Training to all women for their all-round development, so as to enable them to become economically independent and socially empowered citizens.

VANITA VISHRAM WOMEN'S UNIVERSITY * SURAT

SEMESTER 1
GENERIC ELECTIVE COURSE PAPER 1
CH31090

Chemistry in Daily Life - I

Course Objectives

- Develop an appreciation for the importance of the role of chemistry in everyday life.
- Improve their ability to think critically and logically.
- Make students more aware of the chemicals found in all aspects of daily life.
- Become knowledgeable about the connection between chemistry and pollution, health care, energy, nutrition and life, and visual arts.
- Apply knowledge of chemistry to improve quality of life.

Course Outcomes

After completing the course, the students will be able to:
Basic concepts about chemistry and role of chemistry in daily life and connection between chemistry and nutrition and life.

COURSE CONTENTS

Unit- 1

(A) Scope and Importance of Chemistry in Life

Introduction, Chemical basis of life, Periodic table, Elements in the human body, Essential, Non-essential elements,

(B) Chemistry of Carbon

Bonding in Carbon – The Covalent Bond, Versatile Nature of Carbon, Allotropes of carbon, diamond, graphite, graphene, Saturated and Unsaturated Carbon Compounds, Chains, Branches and Rings, Homologous Series, Nomenclature of Carbon Compounds, Activated Carbon

Unit-2 Chemistry of Foods

(A) Food Additives:

Stabilizers, Gums, Thickeners and Gelling Agents as Food Additives
Sweeteners, classification of sweeteners, Fragrances, Flavouring agents and Enhancers, Parent compounds, chemical structure and plant source of such Flavouring agents, Food colour and Colour Retention Agents

(B) Food Adulteration:

Adulteration: Definition of Adulteration and Adulterant, Reasons of Adulteration, Types of Adulterants, Methods for detection of different adulterants in some common food items:

(1) Milk
(2) Milk products: Sweet curd, Rabdi, Khoa & its product, Chhana or Paneer, Ghee, Cottage cheese, condensed milk, Khoa, Ghee, Butter.
(3) Spices: Whole spices, Black Pepper, Cloves, Mustard seed and Powdered spices.
(4) Sweetening agents: Sugar, Pithi sugar, Honey, Jaggery, Burasugar.

Unit-3

(A) Chemistry of Water

Introduction, Chemical and physical properties of Water, Natural water, Turbidity, Colour, Taste, Odour, pH, TDS, Alkalinity, Chloride, water sterilization, Infectious Agents, Water Quality, Hardness, Water Softening, Ion exchange, Reverse Osmosis, Electrocoagulation, Electrodialysis, Waste Water

(B) Acid, Bases and Buffers

Acid and Base theories, Common acids and Base example in daily life, Properties of acid, properties of base, Reaction of Acid and Base, pH Scale, Water dissociation constants, Buffers, Acidic buffers, Basic buffers, pH of buffers

Unit-4

(A) Chemistry in Arts, communication and Transport

Art History and chemistry, Art Conservation, Art Historian, Paper, Gum Paste, Writing/Fountain Pen Ink, Chalk Crayons, Adhesives Chemistry and Communications, Chemistry and Transportation, Rubber Relationship between light and colour, Electromagnetic Spectrum, Cause of colour in objects, Properties of Light. The Nature and Behavior of Light, Mixing Colors: Light vs. Pigments, Colorants: Pigments and Dyes

(B) Chemistry in agriculture and plant protection

Composition of soil, components in soil-micro and macronutrients, Food for plants, nutrient deficiencies in plants. Fertilizers, composting, pesticides and their toxicities. Insecticides, fungicides.

Reference Books:

- B. K. Sharma: introduction to Industiral Chemistry, Goel Publishing, Meerut (1998)
- Medicinal Chemistry by Ashtoush Kar.
- Drugs and Pharamaceutical Sciences Series, Marcel Dekker, Vol. II, INC, New York
- Analysis of Foods – H.E. Cox: 13. Chemical Analysis of Foods – H.E.Cox and pearson.
- Foods: Facts and Principles. N. Shakuntala Many and S. Swamy, 4th ed. New Age.

- International (1998) 6. Physical Chemistry – P l Atkins and J. de Paula – 7th Ed. 2002, Oxford University Press.
- Handbook on Feritilizer Technology by Swaminathan and Goswamy, 6th ed. 2001, FAI.
- Organic Chemistry by I. L. Finar, Vol. 1 & 2. 9. Polymer Science and Technology, J. R. Fired (Prentice Hall).

SEMESTER 1
GENERIC ELECTIVE COURSE PAPER 1
CH31100

Chemistry in Daily Life - I

Practicals

Course objective:

- To perform the pH meter instrument with various samples.
- To perform melting point and boiling point detection.
- To perform experiments based on household chemicals and food samples.
- To perform simple acid-base exercises.

Course Outcomes

After completing the course, the students will be able to: learn the basics expertise of sample purity, separation and isolation methods, melting points and boiling points.

COURSE CONTENTS

Any Eight Practicals

1. Application and working of common glassware and laboratory apparatus.
2. ChemSafLabs: Part -1: Safety symbols and MSDS Part -2: Prevention of accidents and first aid measures
3. Determination of pH of different everyday life chemical solution.
4. Isolation of casein from milk samples.
5. Determination of alkalinity in water.
6. Determination of melting point and boiling point.
7. Separation by distillation of homogeneous binary liquid mixtures.
8. Determination of strength of household acids.
9. Determination of percentage purity of acetic acid in food grade Vinegar.
10. Some quick test for detection of adulterants in food samples like milk, milk products, powdered spices and sweetening agents.

Reference Books:

- Vogel's qualitative organic analysis.
- Vogel's inorganic qualitative analysis.
- Organic Chemistry by Bahl & Bahl.
- "Text book of Organic Chemistry" by P. S. Kalsi, 1999, MacMillan of India Pvt. Ltd.
- Chemistry in daily life, by Kirpal Singh, 2012, PHI Learning Private Limited.

TEACHING METHODOLOGY

The teaching methodologies utilized for effective learning process in the course are:

1. Direct instruction/Lecture method
2. Problem solving Method
3. Small group teaching
4. The discussion Method
5. The study assignment method
6. ICT based teaching
7. Demonstration Method
8. Seminar based Learning
9. Project based Learn in

Vanita Vishram Women's University
School of Commerce & Business Management
Course Code: CO31010
B.Com. (Hons.) Semester: I
Generic Elective: Business Economics
Credit: 6

Objectives:

To help learners to

- Learn theoretical concepts of business economics.
- Understand the role of managerial economist.
- Acquaint with the function of production.
- Know about Break Even Techniques & its uses.
- Understand the structure of market.

Course Content:

Module	Content	Weightage
1.	**Introduction to Business Economics** • Meaning, Objectives & Scope of Business Economics • Role of Managerial Economist • Characteristics of Business Economics	20%
2.	**Production Function** • Meaning & Definition of Production Function • Features of Production Function • Types of Production Function • Short Run & Long Run Production Function - Law of Returns - Law of Variable Proportion	20%
3.	**Break Even Analysis** • Meaning, Assumptions, Uses, Limitations • Break Even Point – Meaning & Determination • Bréak Even Charts	20%
4.	**Price-Output determination under Market:** • Perfect Competition: Meaning, definition, Characteristics, Price-Output determination: short-run & long-run • Monopoly Market: Meaning, definition, Characteristics, Price-Output determination: short-run & long-run • Monopolistic: Definition, Characteristics, Price-Output determination: short-run & long-run • Oligopoly: Definition, Characteristics, Kinked demand	20%

School of Commerce And Business Management
Vanita Vishram Women's University, Athwagate, Surat
* Surat *

Abhilasha Agarwal

5.	**Practical** Case study development by students (It may be in group/individual). Industry project to improve competitiveness in domestic & global market. Case flyer discussion.	20%

Reference Books:

Sr. No.	Title	Author/s	Publication
1	Economics For Business	Appannaiah Reddy and Shanthy	Himalaya Publishing House
2	Business Economics-A Micro Economic Analysis	H. L. Ahuja	S. Chand & Co., New Delhi
3	Essentials of Business Economics	Dwiwedi D. N.	Vikas Publishing House Pvt Ltd

Course Outcomes:

After completion of the course, the student will be able to

- ✓ Acquaint with the concept of Business & its application in real life.
- ✓ Understand the role of managerial economist.
- ✓ Understand the techniques of Break Even analysis.
- ✓ Acquire the knowledge of different structure of market.

VANITA VISHRAM WOMEN'S UNIVERSITY
SCHOOL OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF MICROBIOLOGY

VANITA VISHRAM
WOMEN'S UNIVERSITY
SURAT

BACHELORS OF SCIENCE (B.Sc.-Honors)
MICROBIOLOGY PROGRAMME
under Learning Outcomes-based Curriculum Framework (LOCF)

VANITA VISHRAM WOMEN'S UNIVERSITY SURAT

SEMESTER: 1
General Electives (GE)

Syllabus applicable to the students seeking admission in the B.Sc.- Microbiology (Honors)
under LOCF

w.e.f. the Academic Year 2021-2022

NAME OF THE PROGRAMME (B.Sc. HONOURS- Microbiology)

Course Learning Outcomes & Contents of the Courses

GENERIC ELECTIVE COURSE (GEC)

Microbial world and Diversity (Course Code: MB24010)		
Course Objectives: Course is designed with objectives of: Diversity of microbial world, General characteristics of Cellular microorganisms, Important historical developments in Mycology, general characteristics and economic importance of fungi and actinomycetes and brief idea about protozoa- general characteristics, classification and human relevance. Lab course is fulfilling the objectives of familiarizing students with the instruments and equipment of Microbiology laboratory, preparation and sterilization as well as using microbiological media and observation of variety of microorganisms.		
Course learning outcomes: By the conclusion of this course, the students- **Outcome 1**. Has acquired a fairly good understanding of the Diversity of the microbes **Outcome 2**. Has acquired a fairly good understanding of the activities/importance of microbes. **Outcome 3**. Has acquired practical skills of handling microorganisms in the laboratory for study.		
THEORY COURSE **(4 Credits)**		
Unit – 1	Introduction to microbial world, Physicochemical and biological characteristics; Characteristics of Acellular microorganisms (Viruses); Baltimore classification, general structure with special reference to viroids and prions. Binomial Nomenclature, Whittaker's five kingdom and Carl Woese's three kingdom classification systems and their utility. Difference between prokaryotic and eukaryotic microorganisms.	**15 Lectures**
Unit – 2	General characteristics of Cellular microorganisms, types - archaebacteria, eubacteria-with emphasis on distribution and occurrence, morphology, mode of reproduction and economic importance, wall-less forms - mycoplasma and spheroplasts- structure, reproduction and economic importance. General concept of Phytoplanktons and Zooplanktons. Characteristics, occurrence, thallus organization and classification of Algae. Occurrence, cell ultrastructure, reproduction and economic importance of Cyanobacteria. Applications of algae in agriculture, industry, environment and food.	**15 Lectures**

Unit – 3	Historical developments in the field of Mycology including significant contributions of eminent mycologists. General characteristics of fungi including habitat, distribution, nutritional requirements, fungal cell ultra-structure, thallus organization and aggregation, mode of reproduction and Economic importance of fungi with examples in agriculture, environment, Industry, medicine and food.	**15 Lectures**
Unit – 4	General characteristics, structure, mode of reproduction and economic importance of Actinomycetes with special reference to its application in medicine and industry. General characteristics, occurrence, classification structure, reproduction and economic importance of Protozoa.	**15 Lectures**

LAB. COURSE (2 Credits)
(Course Code: MB3[illegible]020)

1. Microbiology: Good Laboratory Practices and Bio-safety.
2. To study the principle, operation and applications of important instruments (autoclave, incubator, hot air oven, light microscope, pH meter, Laminar air flow system) used in the microbiology laboratory.
3. Cleaning and preparation of laboratory Glass wares (Chemical washing, cleaning and drying).
4. Preparation of culture media (Liquid & solid) for bacterial cultivation.
5. Sterilization of laboratory items using Autoclave and hot air oven.
6. Demonstration of the presence of microflora in the environment by exposing nutrient agar plates to air.
7. Observation of microorganisms - Bacteria, Protozoa, Fungi, Yeasts, and Algae.
8. Study of common fungi, algae and protozoan using temporary/permanent mounts.

Reference Books

1. Singh R. P. General Microbiology. Kalyani Publishers, New Delhi (2007).
2. Aneja, K.R. Experiments in Microbiology, Plant pathology and Biotechnology, Fourth edition, New Age International publishers.
3. Dubey, R.C. and Maheshwary, D.K. Textbook of Microbiology. S. Chand and company (1999).
4. Powar, C.B. and Daginawal, H.F. General Microbiology. Vol-I and Vol- II, Himalaya Publishing House.
5. Chakraborty P. A Textbook of Microbiology. New central book Agency (2005).
6. Tortora, G.J., Funke, B.R. and Case, C. L. Microbiology: An Introduction Pearson Education, Singapore, (2004).
7. Alcomo, I . E. Fundamentals of Microbiology.VI Edition, Jones and Bartlett Publishers. Sudbury .Massachusetts, (2001).
8. Black J. G. Microbiology- Principles and Explorations. John Wiley & Sons Inc. New York, (2002).
9. Pelczar, MJ Chan ECS and Krieg NR, Microbiology McGraw-Hill.
10. Willey, Sherwood, Woolverton. Prescott, Harley, and Klein's Microbiology McGraw-Hill publication
11. Madigan, Martinko, Bender, Buckley, Stahl. Brock Biology of Microorganisms. Pearson
12. Patel, R. J., & Patel, R. K., (2015). Experimental Microbiology, Vol. I, 9th ed., Aditya.

13. Patel, R. J., & Patel, R. K., (2011). Experimental Microbiology, Vol. 2, 8th ed., Aditya.
14. Cappuccino, J.G., (2016). *Microbiology: A Laboratory Manual,* 11th ed., Pearson Education (Singapore) Pvt. Ltd.
15. Aneja, K.R., (2003). *Experiments in Microbiology, Plant Pathology, Tissue Culture and Mushroom Production Technology,* 4th ed., New Age International Publishers.

VANITA VISHRAM WOMEN'S UNIVERSITY

SCHOOL OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF PHYSICS

VANITA VISHRAM
WOMEN'S UNIVERSITY
SURAT

GENERIC ELECTIVE (GE) PHYSICS SYLLABUS

under

Learning Outcomes-based Curriculum Framework (LOCF)
for Under Graduate (UG) Education

SEMESTERS 1

Syllabus applicable to the students seeking admission in the under graduate program of any discipline

Under LOCF

w.e.f. the Academic Year 2021-2022

18/04/2022.

SEMESTER-1

MECHANICS AND PROPERTIES OF MATTER (Theory) (PH13010)

Credits: 4 (Theory) + 2 (Practical)
Contact hours per week: 4 (Theory) + 4 (Practical)

Objectives of the course:

- ☞ The emphasis of this course is to enhance the understanding of the basics of mechanics.
- ☞ By the end of this course, students should be able to solve the seen or unseen problems/numerical in mechanics.

Outline of the Course:

No.	Unit	Minimum No. of Contact Hours	Weightage in %
1.	Motion in two or three dimensions, Force and Motion, Work and Energy	14	23
2.	Centre of mass and Linear Momentum, Rotational Dynamics	18	30
3.	Gravitation and Central Force Motion, Non-Inertial Frame	14	24
4.	Kinematics of moving fluid, Equilibrium and Elasticity	14	23
	Total	**60**	**100**

Course outcome:

CO-1. Understand the motion in two or three dimensions, various Newton's laws of motion and relationship between work and energy.
CO-2. Explain the conservation of energy, momentum, angular momentum and apply them to basic problems.
CO-3. Understand the analogy between translational and rotational dynamics, and application of both motions simultaneously in analyzing rolling with slipping.

Sem-1 for the courses of all Disciplines	
Subject	**Hours**
MECHANICS AND PROPERTIES OF MATTER (Theory)	**4 Hours /week**
Topic	**Hours**
Unit – I	
Motion in two or three dimensions: Projectile Motion, Uniform Circular motion, Relative motion in one and two dimensions **Force and Motion:** Newton's first and second laws, some particular forces, Applying Newton's law, Friction, Drag forces and Terminal velocity. **Work and Energy:** Kinetic Energy, Work and Kinetic Energy, Work done by gravitational force and spring force, Work done by general variable force, Power, Potential Energy, Conservation of Mechanical Energy, Reading a potential energy curve, Work Done on a System by an External Force and Conservation of energy.	14
Unit – II	
Centre of mass and Linear Momentum: Centre of mass, Newton's second law for a system of particles, Linear momentum, Collision and Impulse, Conservation of linear momentum, Momentum and Kinetic energy in collision, Collision in one and two dimensions, System with varying mass (A Rocket) **Rotational Dynamics:** Rotational variables, Rotation with constant angular acceleration, Relating the linear and angular variables, Kinetic energy of rotation, Calculation of rotational Inertia, Torque, Newton's second law for rotation, Work and rotational kinetic energy, Rotational and translational motion of rolling system, Forces and Kinetic Energy of rolling, Angular momentum, Newton's second Law in Angular form, Angular momentum of a rigid body, Conservation of angular momentum.	18
Unit – III	
Gravitation and Central Force Motion: Newton's law of gravitation, Gravitation and The Principle of Superposition, Gravitation near Earth's surface, Gravitation inside Earth, Gravitational Potential Energy, Kepler's laws of Planetary Motion, Orbits and Energy of Satellites, Einstein and Gravitation, Basic idea of global positioning system (GPS). **Non-Inertial Systems:** Non-inertial frames and fictitious forces. Uniformly rotating frame. Centrifugal force. Coriolis force and its applications.	14
Unit – IV	
Kinematics of Moving Fluids: Poiseuille's Equation for Flow of a Liquid through a Capillary Tube. **Equilibrium and Elasticity:** Conditions for equilibrium, Centre of gravity, Stress-	14

Strain and Elastic Moduli, Stress-strain curve: Hook's law, elasticity & Plasticity; Elastic Potential Energy of strained body, Relations connecting the elastic constants, Poisson's Ratio, Determination of elastic constants in laboratory: Searle's method (Static and Dynamic), Maxwell's method, Poisson's ratio by Rubber Tube; Twisting couple on cylinder.	

Note: In addition to above content, numerical solved/unsolved problems to be discussed from each unit.

Textbooks:

1. Fundamentals of Physics by Haliday, Resnick & Walker, 11th Edition, Wiley (2018).

2. University Physics by F.W Sears, M.W Zemansky, H.D Young, 15th Edition (2019). Pearson

Reference books:

1. Feynman Lectures, Vol. I, R.P.Feynman, R.B.Leighton, M.Sands, 2008, Pearson Education
2. Concepts of Physics, Vol-1 By H.C. Verma, Bharti Bhavan Publishers & Distributors
3. Mechanics, Berkeley Physics, vol.1, C.Kittel, W.Knight, et.al. 2007, Tata McGraw-Hill.
4. An introduction to mechanics, D. Kleppner, R.J. Kolenkow, 1973, McGraw-Hill.
5. University Physics, Ronald Lane Reese, 2003, Thomson Brooks/Cole

VANITA VISHRAM WOMEN'S UNIVERSITY

SCHOOL OF SCIENECE AND TECHNOLOGY

DEPARTMENT OF MATHEMATICS

MATHEMATICS PROGRAMME

under Learning Outcomes-based Curriculum Framework (LOCF)
for Under Graduate (UG) Education

SEMESTERS 1 & 2

Generic Elective Courses (GE)

Syllabus applicable to the students seeking admission in the following programmes
B.A. /B.Com./B.B.A./B.Sc./B.C.A. under LOCF
w.e.f. the Academic Year 2021-2022

1. Preamble – VVWU

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Empowerment of women through quality education and skill development, so as to make them strong pillars of stability in the society.

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SEMESTER 1
GENERIC ELECTIVE COURSE PAPER 1 (MAT-101)

Trigonometry

Course Objectives

The objective of this course is to guide/ help students in developing Mathematical Abilities relevant to Computer Science.

Course Outcomes

After studying this subject, students will be able to develop Mathematical Abilities relevant to Computer Science.

COURSE CONTENTS

Units I:

De'Moiver's theorem ,It's applications, Trigonometric functions for multiple arguments.

Unit II:

Euler's expressions, Evaluation of Indeterminate forms using Euler's expressions.

Hyperbolic functions for real arguments and their inverse .

Unit III:

Exponential , Circular and Hyperbolic functions of complex variables and their identities , Euler's Theorem, Relations between circular and Hyperbolic functions.

Unit IV:

Logarithm of complex quantities, Separations of Logarithmic, inverse circular and inverse hyperbolic functions into their real and imaginary parts.

The course is covered by the following reference books:

1. Shantinarayan : Text book of Matrices, S. Chand and Co.
2. S.L. Loney : Plane trigonometry , Party I and II, McMillan & Co.London.
3. R.S. Verma & K.S. Shukla : Text book of Trigonometry, Pothishala Pvt. Ltd. Allahabad.

GENERIC ELECTIVE COURSE PAPER 1 (MAT-101)

Trigonometry Practical

Course Objectives

The objective of this course is to guide/ help students in developing Mathematical Abilities relevant to Computer Science.

Course Outcomes

After studying this subject, students will be able to develop Mathematical Abilities relevant to Computer Science.

COURSE CONTANTS

Practical -1 : Draw graph of a trigonometry function and its inverse function.

Practical 2 : Problem based on De'Moiver's theorem ,It's applications.

Practical 3 : Problem based on separation of real and complex part of hyperbolic functions and trigonometric function .

Practical 4: Problem based on logarithm functions of complex variables .

Reference Books:

1. Shantinarayan : Text book of Matrices, S. Chand and Co.
2. S.L. Loney : Plane trigonometry , Party I and II, McMillan & Co.London.
3. R.S. Verma & K.S. Shukla : Text book of Trigonometry, Pothishala Pvt. Ltd. Allahabad.

SEMESTER 2
GENERIC ELECTIVE COURSE PAPER 2 (MAT-201)

Differential Calculus

Course Objectives

The objective of this course is to guide/ help students in developing Mathematical Abilities relevant to Computer Science.

Course Outcomes

After studying this subject, students will be able to develop Mathematical Abilities relevant to Computer Science.

COURSE CONTENTS

Unit 1: Limit

Introduction, Meaning of $x \to a$, Meaning of $x \to 0$, Meaning of $x \to \infty$, Limit of a functions, Limit of a function by preparing Tables, Rules of Limit, Some important Limits, Notation for finite series .

Unit 2 : Differentiation

Meaning and definition of Differentiation , Derivative of some functions by definition, Rules of Derivative , Derivative of composite function , Derivative if an implicit function, Logarithmic differentiation, Derivative of parametric Equation , Derivative of Function with respect to another function.

Unit 3 : Mean value Theorem (without proof)Roll's and Lagrange's Theorem along with their geometrical interpretation, Cauchy Theorem.

Unit 4 : First order Differential Equation

Definition of Differential Equation , Order and degree of Differential Equation , Solution of Differential Equation , Method to solve First order Differential Equation , Solution of First order Differential Equation by separation of variable , Solution of Homogeneous Differential Equation , Partial Derivative, Exact Differential Equation , Necessary and sufficient condition for to be an Exact Differential Equation , Method to solve Exact Differential Equation , Integrating Factor, Linear differential Equation of First Order.

Reference Books:

1. Shanti Narayana and P.K Mittal: Differential Calculus
2. D.A Murrary : Differential Equations , Tata Mcgraw Hills
3. Frank Ayres : Theory and Problems on Differential Equation Mcgraw Hill Book.Co. New York
4. Calculus By G.B. Thomas and R.L. Finney, Pearson Education,2007
5. A Text book of Calculus . S.C. Arora and Ramesh Kumar, Pitamber Publishing Company Ltd. Delhi

GENERIC ELECTIVE COURSE PAPER 2 (MAT-201)

Mathematics Practical

Course Objectives

The objective of this course is to guide/ help students in developing Mathematical Abilities relevant to Computer Science.

Course Outcomes

After studying this subject, students will be able to develop Mathematical Abilities relevant to Computer Science.

COURSE CONTANTS

Practical -1 : Problem based on L-Hospital Rule's ($\frac{0}{0}$, $\frac{\infty}{\infty}$).

Practical -2 : Problem for Maxima and Minima

Practical -3 : Problem of Maclourian and Taylor series expansion

Practical -4 : Problem based on rate of change.

Reference Books:

1. Shanti Narayana and P.K Mittal : Differential Calculus
2. D.A Murrary : Differential Equations , Tata Mcgraw Hills
3. Frank Ayres : Theory and Problems on Differential Equation Mcgraw Hill Book.Co. New York
4. Calculus By G.B. Thomas and R.L. Finney, Pearson Education,2007
5. A Text book of Calculus . S.C. Arora and Ramesh Kumar, Pitamber Publishing Company Ltd. Delhi

SEMESTER 1
GENERIC ELECTIVE COURSE PAPER 1 (EN31010)

PHONETICS & GRAMMAR

Course Objectives

The course aims to:

- develop foreign language communicative competence, including sub-competences like

  a) Linguistic Competence (lexical items and knowledge of grammar)
  b) Sociolinguistic Competence (using and interpreting linguistic forms according to the context)
  c) Discursive Competence (understanding and logical composing of certain statements for the purpose of notional communication)
  d) Socio-cultural Competence (knowledge of certain degree of socio-cultural context)
  e) Social Competence (co-operation and working with others)

Course Outcomes

At the end of the course, the students will be able to:

- use content obligatory language in speaking and writing
- use vocabulary appropriately
- produce correct pronunciation
- critically evaluate data, reference, articles on the issues under study
- cope with the following types of

  a) written tasks: paragraphs, essays
  b) speaking tasks: monologues, discussions, presentations
  c) listening tasks: listening for gist, listening for specific information, listening for detail, note-taking
  d) reading tasks: scanning, skimming, reading for detailed comprehension

(Dr. I. A. Sufi)
Dean, SOHAS

COURSE CONTENTS

Unit 1 Phonetics (Theory)

a) Introduction to Phonetics
b) Organs of Speech
c) Classification of Speech Sounds & Phonetic Symbols
d) Manner of Articulation
e) Place of Articulation
f) Voiced and Voiceless Sounds

Unit 2 Phonetics (Practical)

a) Phonetic transcription of words and sentences
b) Syllable division by using hyphen

Unit 3 English Grammar (Theory)

a) Tenses
b) Lexical Words & Syntactic Words – Parts of Speech
c) Types of Phrases – Noun Phrase, Verb Phrase, Adjective Phrase, Adverb Phrase, Genitive Phrase, Prepositional Phrase
d) Types of Clauses: Noun Clause, Adjective Clause, Adverb Clause
e) Types of Sentences: Simple, Compound, Complex, Negative, Exclamatory, Interrogative, Imperative

Unit 4 English Grammar (Practical) – Based on Unit 3

Unit 5 Word-formation Process (Theory & Practical)

a) Affixation Process
b) Compounding
c) Clipping
d) Acronymy
e) Blending
f) Back-formation
g) Reduplication
h) Antonomasia

Suggested Readings

- T. Balasubramaniam. *English Phonetics for Indian Students*, Laxmi Publications, Third Edition, 2017
- Peter Roach. *English Phonetics and Phonology: A Practical Course.* Cambridge University Press, 2010.
- D. Thakur. *The Phonetics and Phonology of English: A Handbook*, Bharati Bhawan Publishers & Distributors, First Edition, 2017.
- Dr. G.S. Kushwaha. *English Phonetics and Pronunciation for Indian Learners*. Notion Press, 2017.
- R.N. Bakshi. *A Course in English Grammar*. Orient Blackswan, 2017.
- Raymond Murphy. *Intermediate English Grammar*. Cambridge University Press, 1999.
- A.J. Thomson & A.V. Martinet. *A Practical English Grammar*. OUP, 1997.