GENERIC ELECTIVE

Annexure-IV

Generic Elective

B.Sc. (H) Statistics semester I under UGCF 2022
GE I(a) : Introduction to Statistics

Credits: 4

(Theory:3 and Practical:1)

Course Objectives:
The learning objectives include:

- Acquainting the students with descriptive data analysis.
- To introduce students to different measurement scales, qualitative and quantitative and discrete and continuous data.
- To help students to organise data into frequency distribution graphs, including bar graphs, histograms, polygons and ogives.
- Students should be able to understand the purpose for measuring central tendency, dispersion, skewness and kurtosis and should be able to compute them as well.
- Students should be able to understand theory of attributes, independence and association of attributes.

Course Learning Outcomes:

Upon successful completion of this course students will demonstrate knowledge of:

- Introduction to Statistics, definitions and data classification
- Graphical displays of data, frequency distributions, analysing graphs.
- Numerical descriptions of data, measures of center tendency, measures of dispersion, skewness and kurtosis.
- Theory of attributes.

Contents.

UNIT I : Introduction to Statistics and data

Introduction: Definition and scope of Statistics, concepts of statistical population and sample. Data: quantitative and qualitative, attributes, variables, scales of measurement -nominal, ordinal, interval and ratio. Presentation: tabular and graphic, including histogram and ogives.

UNIT II: Descriptive Statistics

Measures of Central Tendency: Arithmetic mean, median, mode, geometric mean, harmonic mean, partition values. Measures of Dispersion: Range, quartile deviation, mean deviation, standard deviation, variance, coefficient of dispersion: coefficient of variation. Moments, Measure of skewness and kurtosis.

UNIT III: Theory of attributes

Theory of Attributes: Consistency of data, independence of attributes, association of attributes, Yule's coefficient of association, coefficient of colligation.

SUGGESTED READINGS:

1. Goon, A.M., Gupta, M.K. and Dasgupta, B. (2002). *Fundamentals of Statistics*, 8th Ed. Vol. I & II, The World Press, Kolkata.
2. Miller, I. and Miller, M. (2006). *John E. Freund's Mathematical Statistics with Applications*, 7th Ed., Pearson Education, Asia.
3. Mood, A.M. Graybill, F.A. and Boes, D.C. (2007). *Introduction to the Theory of Statistics,* 3rd Ed., (Reprint), Tata McGraw-Hill Pub. Co. Ltd.
4. Gupta, S.C., and Kapoor,V.K. (2014). *Fundamental of Mathematical Statistics*,11th Ed., Sultan Chand.
5. Ross, Sheldon M. (2010): *Introductory Statistics,* 3rd Edition, Academic Press.
6. Sidney Siegel, N. John Castellan, Jr.: *Non Parametric Statistics for the behavioral sciences*, Second edition.

PRACTICAL/ LAB WORK

List of Practical:

1. Tabular representation of data
2. Graphical representation of data using histogram
3. Graphical representation of data using ogives
4. Problems based on arithmetic mean
5. Problems based on geometric mean
6. Problems based on harmonic mean
7. Problems based on median
8. Problems based on mode
9. Problems based on partition values
10. Verifying the relationship between arithmetic mean, geometric mean and harmonic mean
11. Problems based on range and quartile deviation.
12. Problems based on mean deviation
13. Problems based on standard deviation and variance
14. Problems based on combined mean and combined variance
15. Problems based on coefficient of variation.
16. Problems based on moments,
17. Problems based on skewness

18. Problems based on kurtosis
19. Checking consistency of data.
20. Checking the independence of attributes
21. Measuring the association between the attributes.

Pattern of theory examination (75 marks)

End Semester Paper will be of 50 marks and 25 marks for internal assessment.

Instruction for the students:

- Do five questions in all. Question 1 is compulsory. Do remaining four questions from Section A and B, selecting two from each section.
- All question carries equal marks
- Use of simple calculator is allowed.

NOTE

- Question 1 will be objective type based on all the units for 10 marks.
- Section A consisting of three questions (with subparts) each of 10 marks from Unit II
- Section B consisting of three questions (with subparts) each of 10 marks from Unit I and Unit III

Pattern of practical examination (25 marks)

- End Semester practical examination will be of 15 marks and 10 marks for internal assessment.
- End semester examination will have two parts: 10 marks for practical examination and 5 marks for viva-voce.

- A student has to attempt four questions in all from the total of five (5) questions.

Annexure-V

Bachelor of Science (Hons.) in Statistics
STAT-GE-102: Time Series Analysis and Index Number

Credits: 4

Course Objectives:
The learning objectives include:

- Understand the concept of time series, its components, and their estimation.
- Application of time series.
- Understand the concept, formulation, and application of index numbers.

Course Learning Outcomes:
After completing this course, students will possess the ability to appreciate, formulate solutions, and analyze the use of time series and index numbers for real-world problems.

Contents:

UNIT I
Introduction to Time Series, Components of time series, Decomposition of time series- Additive and multiplicative model with their merits and demerits, Illustrations of time series, Measurement of trend by method of free-hand curve, method of semi-averages and method of least squares (linear, quadratic and exponential).

UNIT II
Fitting of modified exponential, Gompertz and logistic curve, Moving average method, Measurement of seasonal variations by method of simple averages, ratio to trend method, and ratio to moving average method.

UNIT III
Introduction to Index numbers, Problems in the construction of index numbers, Construction of price and quantity index numbers: simple aggregate, weighted aggregate (Laspeyres, Paasche's, Drobish-Bowley, Marshall-Edgeworth's, Walsch and Fisher's Formula), simple and weighted average of price relatives, and chain base method, Criteria for a good index number, Errors in the measurement of price and quantity index numbers, Consumer price index number, its construction and uses, Uses and limitations of index numbers.

SUGGESTED READINGS:

1. Croxton, Fredrick E, Cowden, Dudley J. and Klein, S. (1973): Applied General Statistics, 3rd edition, Prentice Hall of India Pvt. Ltd.
2. Allen R.G.D. (1975): Index Numbers in Theory and Practice, Macmillan
3. Gun, A.M., Gupta, M.K. and Dasgupta, B. (2008). Fundamentals of Statistics, Vol. II, 9th Ed., World Press, Kolkata.
4. Gupta, S.C. and Kapoor, V.K. (2014). Fundamentals of Mathematical Statistics, 11th Ed., Sultan Chand.
5. Mukhopadhyay, P. (1999). Applied Statistics, New Central Book Agency, Calcutta.

PRACTICAL/LAB WORK

List of Practicals:

1. Fitting of linear trend
2. Fitting of quadratic trend
3. Fitting of an exponential curve
4. Fitting of modified exponential curve by the method of
    a. Three selected points
    b. Partial sums
5. Fitting of Gompertz curve by the method of
    a. Three selected points
    b. Partial sums
6. Fitting of logistic curve by the method of three selected points
7. Fitting of trend by moving average method (for n even and odd)
8. Measurement of seasonal indices by
    a. Method of simple averages
    b. Ratio-to-trend method
    c. Ratio-to-moving-average method
9. Construction of price and quantity index numbers by simple aggregate method.
10. Construction of price and quantity index numbers by Laspeyres, Paasche's, Drobish-Bowley, Marshall-Edgeworth, Walsch and Fisher's Formula.
11. Construction of price and quantity index numbers by simple and weighted average of price relatives.
12. Construction of index number by Chain base method.
13. Construction of consumer price index number by
    a. Family budget method
    b. Aggregate expenditure method
14. Time Reversal Test and Factor Reversal Test

PATTERN OF THE QUESTION PAPER:

Students are required to attempt 5 questions in all. All questions are of 15 marks each.

Question 1 is compulsory and will be based on the entire syllabus.

There will be 3 questions from Units 1 and 2; and 2 questions from Unit 3. Students can attempt any 4 questions out of these.

GE 1: Ideas in Indian Political Thought

Course Objective

This paper is designed for students who are from other disciplines and wish to have a basic understanding of the various themes that has shaped Indian society and politics. It revolves around key concepts based on original texts which would help the students to critically engage with the ideas.

Course Learning outcomes

- Students will be able to answer about the nature and form of statecraft that existed in Ancient India.
- They will be able to explain how the texts in ancient India interpreted Dharma and Danda
- Students will be able to answer what were sources and mechanisms to practice Nyay in ancient India.
- They will be able to make distinction between Rastra and Rajya.
- They will able to explain the meaning and foundations of Varna and how are they different from caste.

Unit 1: Dharma and Danda: Kautilya

Unit 2: Gender: Tarabai Shinde

Unit 3: Culture and Nationalism: Vivekananda

Unit 4: Swaraj: Gandhi

Unit 5: Nyaya: Ambedkar

Unit 6: Hindutva: Savarkar

Unit 7: Integral Humanism: Deen Dayal Upadhyaya

Unit wise reading list

1. Dharma and Danda: Kautilya

Mehta, V.R. (1992) 'The Pragmatic Vision: Kautilya and His Successor', in Foundations of Indian Political Thought, Delhi: Manohar, pp. 88- 109.

Sharma, R S (2005), Aspects of Political Ideas and Institutions in Ancient India, Motilal Banarsidass, New Delhi pp 143-164

2. Gender: Tarabai Shinde

O' Hanlon, Rosalind (2002) A comparison between women and men: Tarabai Shinde and the critique of Gender Relations in Colonial India. New Delhi: Oxford University Press.

Lele, Jayant (1998) Gender Consciousness in Mid-Nineteenth Century Maharashtra, in Anne Feldhaus *Images of women in Maharastrain Society*. The University of New York Press: New York

3. Culture and Nationalism: Vivekananda

Sen, Amiya P. (2011), 'Vivekanand: Cultural Nationalism', in M. P. Singh and Himanshu Roy (ed.), *Indian Political Thought: Themes and Thinkers* Delhi. Pearson

Kiggley, Dermot (1990) 'Vivekananda's western message from the East' in William Radice (ed) Swami Vivekananda and modernization of Hinduism, New Delhi: Oxford University Press.

4. Swaraj: Gandhi

Parel, A. (ed.) (2002), 'Introduction', in *Gandhi, freedom and Self Rule,* Delhi: Vistaar Publication.

Dalton, Denis (1982) Indian Idea of freedom, Gurgaon: Academic Press, pp 154-190

5. Nyaya: Ambedkar

Pantham, Thomas and Kenneth Deutsch (ed) (1986) Political Thought in Modern India, New Delhi: Sage, pp 161-175

Rodrigues, Valerian (2002) The Essential writings of B.R Ambedkar, Delhi: Oxford University Press, pp 1-44

6. Hindutva: Savarkar

Savarkar, Vinayak Damodar (1922-23) Essentials of Hindutva, 1922, available at: http://savarkar.org/en/encyc/2017/5/23/2_12_12_04_essentials_of_hindutva.v001.pdf_1.pdf

Sampath, Vikram (2021) Savarkar: A Contested Legacy, 1924-1966, Gurugram: Penguin Random House India

7. Integral Humanism: Deen Dayal Upadhyaya

Upadhyaya, Deendayal. (1964), Integral Humanism, Delhi: Bharatiya Jan Sangh.

MGE 3: Nationalism in India

Course objective

The course aims to help students understand the national movement in India. It looks at the movement from different theoretical perspectives that highlight its varied dimensions. The course begins by looking at the Indian responses to colonial dominance in the nineteenth century, and traces the development of the anti-colonial struggle up to the mid-20th century. It successively focuses on the events leading to the Partition and the Independence in 1947. In the process, the course also tries to focus on the various tensions and debates within nationalism in India as it engaged with the questions of communalism, class struggle, caste and gender.

Course Learning Outcomes

On successful completion of the course, students would:

- Gain an understanding of the different theoretical views on the emergence and development of nationalism in India and the tensions that existed between them
- Demonstrate knowledge of the historical trajectory of the development of the nationalist movement in India, with specific focus on its different phases
- Understand the contribution of various social movements in the anti-colonial struggle
- Demonstrate awareness of the history of partition and independence

Unit 1. Approaches to the Study of Nationalism in India: Nationalist, Imperialist, Marxist, and Subaltern

Unit 2. Reformism and Anti-Reformism in the Nineteenth Century: Major Social and Religious Movements in 19th century

Unit 3. Nationalist Politics and Expansion of its Social Base

a. Phases of Nationalist Movement: Liberal Constitutionalists, Swadeshi and the Radicals; Beginning of Constitutionalism in India
b. Gandhi and Mass Mobilisation: Non-Cooperation Movement, Civil Disobedience Movement, and Quit India Movement
c. Revolutionaries, Socialists, and Communists

Unit 4. Social Movements

Peasants, Tribals, Workers, Women and anti-caste movements

Unit 5. Partition, Independence and Integration of states

Communalism in Indian Politics, The Two-Nation Theory and Partition, Independence and Integration of Indian States

Unit wise reading list

Approaches to the Study of Nationalism in India

S. Bandopadhyay (2004) *From Plassey to Partition: A History of Modern India*, New Delhi: Orient Longman, pp. 184-191.

R. Thapar (2000) 'Interpretations of Colonial History: Colonial, Nationalist, Post-colonial', in P. DeSouza (ed.) *Contemporary India: Transitions*, New Delhi: Sage Publications, pp. 25-36.

Reformism and Anti-Reformism in the Nineteenth Century

S. Bandopadhyay (2004) From Plassey to Partition: A History of Modern India, New Delhi: Orient Longman, pp.139-158, 234-276.

A. Sen (2007) 'The idea of Social Reform and its Critique among Hindus of Nineteenth Century India', in S. Bhattacharya (ed.) *Development of Modern Indian Thought and the Social Sciences*, Vol. X. New Delhi: Oxford University Press.

Nationalist Politics and Expansion of its Social Base

S. Bandopadhyay (2004) *From Plassey to Partition: A History of Modern India*. New Delhi: Orient Longman, pp. 279-311.

S. Sarkar (1983*) Modern India (1885-1947)*, New Delhi: Macmillan,

P. Chatterjee (1993) 'The Nation and its Pasts', in P. Chatterjee, *The Nation and its Fragments: Colonial and Postcolonial Histories*. New Delhi: Oxford University Press, pp. 76-115.

Social Movements

S. Bandopadhyay (2004) *From Plassey to Partition: A history of Modern India*. New Delhi: Orient Longman, pp. 342-357, 369-381.

Desai, A.R. (2019, reprint- 6th edition) Crusade Against Caste System, in *Social Background of Indian Nationalism*, Sage.

Desai, A.R. (2019, reprint- 6th edition) Crusade Against Untouchability, in *Social Background of Indian Nationalism*, Sage.

Desai, A.R. (2019, reprint- 6th edition) Movement for the Emancipation of Women, in *Social Background of Indian Nationalism*, Sage.

G. Shah (2002) *Social Movements and the State*, New Delhi: Sage, pp. 13-31

Partition, Independence and Integration of States

A. Jalal, and S. Bose (1997) *Modern South Asia: History, Culture, and Political Economy*. New Delhi: Oxford University Press, pp. 135-156.

A. Nandy (2005) *Rashtravad banam Deshbhakti* Translated by A. Dubey, New Delhi: Vani Prakashan. pp. 23-33. (The original essay in English is from A. Nandy (1994) New Delhi: Oxford University Press, pp. 1-8.)

V P Menon (1956), CH I- Setting the Stage and Ch XXV- The Cost of Integration, in *The Story of the*

Integration of the Indian States, Orient Longman.

Additional Readings:

B.Chakrabarty and R. Pandey (2010) *Modern Indian Political Thought,* New Delhi: Sage Publications.

P. Chatterjee (1993) *The Nation and its Fragments: Colonial and Postcolonial Histories*, New Delhi: Oxford University Press.

R. Pradhan (2008) *Raj to Swaraj*, New Delhi: Macmillan (Available in Hindi).

S. Islam (2006) *Bharat Mein Algaovaadaur Dharm*, New Delhi: Vani Prakashan.

Annexure-H

MICROB-GE-1

INTRODUCTION AND SCOPE OF MICROBIOLOGY

Marks: 100 (Theory = 50 marks
Practicals = 50 marks)

Duration: Theory = 30 hours (2 credits)
Practicals = 60 hours(2 credits)

Course objectives:

The main objective of the course is to give students an overview of three major themes: History and scope of Microbiology, microbial diversity (prokaryotes, eukaryotes, and viruses), and the role of microbes in human lives. Students will gain insights into how microorganisms affect the everyday lives of humans in both beneficial and harmful ways. Students will become familiar with the techniques used in isolation and cultivation of microorganisms, and will learn how to identify microorganisms in the laboratory.

Pre-requisite: None.

Course Learning Outcomes:

Upon successful completion of the course the student :

CO1: Will become familiar with the history of Microbiology, and understand how Microbiology developed as a distinct discipline of science during the golden era of microbiology. Will become familiar with some of the later developments of the 21st century.

CO2: Will acquire an understanding about the placement of microorganisms in the tree of life. Will know about key differences between prokaryotic and eukaryotic organisms. Will also be acquainted with structure of viruses, general characteristics and importance of algae, fungi and protozoa.

CO3: Will understand the importance of microbe-human interactions, becoming aware of microorganisms as agents of human diseases. Will become aware of the important role that microorganisms play in food, agriculture, industry, biofuel and in the clean-up of the environment.

CO4: Will become aware of good microbiological laboratory and safety practices, and be acquainted with the working of basic microbiological equipment routinely used in the laboratory. Will also be acquainted with the aseptic techniques used for culturing bacteria and fungi.

CO5: Will gain hands-on experience in isolation of bacteria and fungi from air and will be acquainted with staining techniques used for observing bacteria, algae and fungi. Will learn the use of compound microscope.

CO6: Will get acquainted with different shapes and arrangement of bacteria. Will be able to identify algae, fungi, protozoa using permanent slides/photographs. Will be able to understand the structure of viruses using electron micrographs.

Contents:

Theory: **30 hours**

Unit 1: History of Microbiology: Some key milestones in the field of microbiology: Contributions of Antonie van Leeuwenhoek. Controversy over spontaneous generation. Louis

Pasteur and concept of pasteurization. Robert Koch and germ theory of diseases, and concept of pure culture. Edward Jenner and cowpox immunization. Ivanovsky & Beijerinck and the discovery of viruses. Winogradsky and the development of soil microbiology. Golden era of Microbiology. **8**

Unit 2: Microbial Diversity: Position of microorganisms in the living world. Whittaker's five kingdom classification. Carl Woese's three domain classification. Detailed characteristics of prokaryotic and eukaryotic organisms with examples of *E. coli* (bacterium) and *Saccharomyces* (yeast). Acellular organisms: structure and genome of Tobacco mosaic virus, polio virus and bacteriophage T4. General characteristics, habitat and economic importance of algae, fungi and protozoa. **12**

Unit 3: The impact of microorganisms on humans: Causal organism and transmission of common human diseases: typhoid, tuberculosis, cholera, malaria, gastroenteritis, influenza. Microorganisms and their applications in agriculture: nitrogen fixers and mycorrhiza. Role of microorganisms in the environment: microbial remediation of pollutants. Applications of microorganisms in food and industry: fermented foods and probiotics, biofuel (biogas), antibiotics and enzymes. **10**

Practicals: 60 hours

Unit 4: Microbiological laboratory practices, and equipment: Good Microbiology laboratory practices and general safety measures while working with microbes. Physical and chemical hazards and immediate first aid. Principle, working and applications of instruments: autoclave, hot air oven, biosafety hood, incubator and light and compound microscope. Demonstration and performance of aseptic technique for culturing of bacteria and fungi. **24**

Unit 5: Cultivation, isolation and staining of cellular microorganisms: Study of aero microflora by exposing nutrient agar plate at different locations and comparing diversity on the basis of colony morphology. Demonstration of bacterial smear preparation from suitable sample/culture followed by Gram staining and observation under oil immersion objective. Preparation of stained temporary mounts of any one fungus (*Rhizopus*/ *Penicillium*) and any one alga (*Chlamydomonas*/ *Spirogyra*). **16**

Unit 6: Study of microorganisms: Study of shape and arrangement of following bacteria / bacterial structures using permanent slides: bacillus, coccus, spirillum and endospore. Study of vegetative and reproductive structures of following algae using permanent slides: *Chlamydomonas*, *Spirogyra* and *Polysiphonia*/Fucus. Study of vegetative and reproductive structures of following fungi and protozoa using permanent slides: Fungi: *Rhizopus, Penicillium* and *Agaricus*. Protozoa: *Amoeba*, *Paramecium, and Giardia*. Study of structure of the following viruses using electron micrographs: Tobacco mosaic virus, T4 bacteriophage and poliovirus. **20**

Suggested Reading:

1. Brock Biology of Microorganisms by M.T. Madigan,J. Aiyer,D. Buckley,W.Sattley and B. Stahl.16th edition. Pearson, USA. 2021.

2. Microbiology: A Laboratory Manual by J. Cappuccino and C.T. Welsh. 12th edition. Pearson Education, USA. 2020.

3. Prescott's Microbiology by J. M. Willey, K. Sandman and D. Wood. 11th edition. McGrawHill Higher Education, USA. 2019.

4. Microbiology: An Introduction by G.J. Tortora, B.R. Funke,and C.L. Case. 13th edition. Pearson, USA. 2018.
5. Benson's Microbiological applications: Laboratory manual in general microbiology by A.E. Brown and H. Smith H. 15th edition. McGraw-Hill Education, USA. 2022.
6. Principles of Microbiology by R. M. Atlas. 2nd edition. W.M.T. Brown Publishers, USA.1997.
7. Microbiology by M. J. Pelczar, E. C. S. Chan and N. R. Krieg. 5th edition. McGraw Hill,USA. 1993.

Facilitating the Achievement Of Course Learning Objectives

Unit	Course learning outcomes	Teaching and learning activities	Assessment tasks*
1.	Will become familiar with the history of Microbiology, and understand how Microbiology developed as a distinct discipline of science during the golden era of microbiology. Will become familiar with some of the later developments of the 21st century.	Classroom lectures on the discovery of microorganisms, controversy over spontaneous generation, discoveries in the golden age of microbiology and latest developments in 21st century.	Identification of scientists through photographs related to development of Microbiology. Home assignment on historical developments that led to the development of germ theory of disease, pure culture technique and immunization.
2.	Will acquire an understanding about the placement of microorganisms in the tree of life. Will know about key differences between prokaryotic and eukaryotic organisms. Will also be acquainted with structure of viruses, general characteristics and importance of algae, fungi and protozoa.	Lecture on classification of living organism with emphasis on placement of microorganisms. Presentations on prokaryotic and eukaryotic microbial cell structure, structure of virus and economic importance of algae, fungi and protozoa.	Assignments on acellular and cellular microbes with examples; comparative account of prokaryotic and eukaryotic cell structure. Quiz on economic importance of algae, fungi and protozoa.
3.	Will understand the importance of microbe-human interactions, becoming aware of microorganisms as agents of human diseases. Will become	Presentations on common human diseases with their causative agents and mode of transmission. Interactive sessions on the role of different microorganisms in human welfare.	Quiz on common human diseases and their agents. Poster making on microorganisms used in making of foods, biofuels, enzymes,

	aware of the important role that microorganisms play in food, agriculture, industry, biofuel and in the clean-up of the environment.		biofertilizers, and antibiotics.
4	Will become aware of good microbiological laboratory and safety practices, and be acquainted with the working of basic microbiological equipment routinely used in the laboratory. Will also be acquainted with the aseptic techniques used for culturing bacteria and fungi.	Discussion on the importance of safety measures and good laboratory practices including disposal and proper handling of microbial cultures. Discussion and demonstration of working and applications of basic microbiological equipment. Demonstration of aseptic culture technique.	Making posters on good microbiology laboratory practices, comparative account of various biosafety levels (BSL1 to BSL4), safety in laboratories and immediate assistance in case of injury. Viva/quiz on functions of different components, and applications of instruments.
5.	Will gain hands-on experience in isolation of bacteria and fungi from air and will be acquainted with staining techniques used for observing bacteria, algae and fungi. Will learn the use of compound microscope.	Laboratory sessions for studying microbial flora of the air and practicing isolations by aseptic transfer of microorganisms. Demonstration of preparation of bacterial smears followed by Gram staining. Practical session for staining fungi and algae for observing under microscope.	Students are required to write a report for all the exercises in a record book. They will submit the practical record on a specified date and will be assessed for their laboratory work and the practical record work separately.
6.	Will get acquainted with different shapes and arrangement of bacteria. Will be able to identify algae, fungi, protozoa using permanent slides/photographs. Will be able to understand the structure of viruses using electron micrographs.	Observing permanent slides/photographs/ electron micrographs of various microorganisms for characteristic identifying features .	Recording salient features of various microorganisms alongwith well labelled diagrams in their practical files to be submitted at an informed time and assessing the record work.

***Assessment tasks are indicative and may vary.**

MICROB-GE-2

MICROBES IN HEALTH AND HYGIENE

Marks: 100 (Theory = 50 marks
Practicals = 50 marks)

Duration: Theory = 30 hours (2 credits)
Practicals = 60 hours(2 credits)

Course objectives:

The main objective of this course is to introduce the students to the role of microorganisms in human health. Students will be exposed to the importance of microbe-human interactions when learning about the human microbiome. They will become aware of common diseases caused by microorganisms and will develop an understanding of probiotics and their importance in human health. They will be introduced to bacteriophages and their application in treatment/control of bacterial infections.

Pre-requisite: Student should have studied Biology/ Biotechnology/ Biochemistry in 12th standard.

Course Learning Outcomes:

Upon successful completion of the course, the student:

CO1: Will be acquainted with the importance of the human microbiome including the benefits as well as possible harmful effects. They will have a fair knowledge of various types of microorganisms surviving on/in the human body.

CO2: Will have gained knowledge about the spectrum of diseases caused by bacteria, viruses, protozoa and fungi. They will be familiar with the methods of transmission and control of various diseases.

CO3: Will understand the role of probiotics in human health. They will have learnt about the characteristics of probiotic microorganisms and have a fair idea of prebiotics and synbiotics. They will also have an overview of bacteriophages and their role in therapy.

CO4: Will have hands-on training on isolation of microorganisms from skin and staining of microorganisms collected from oral cavity, and will be able to check the efficacy of the sanitizer and antimicrobial action of heavy metals.

CO5: Will become aware of various probiotic products available in the market and the organisms included in these products. They will receive hands-on training for evaluation of various probiotic products and microbial strains.

CO6: Will have a fair understanding of bacteriophage typing and will also have hands on training in the isolation of bacteriophages from sewage samples.

Contents:

Theory: **30 hours**

Unit 1: Role of microbiome in human health: Importance of human microbiome in health. Factors affecting the survival and colonization of microorganisms on various organs including skin, throat and upper respiratory tract, gastrointestinal tract and genitourinary tract. Understanding the human microbiome using animal model systems: *C. elegans*, mice, zebrafish. Strengths and weaknesses of using these systems for human microbiome studies. Technologies for assaying the human microbiome: direct observation methods, molecular

profiling techniques, sequencing methods, strengths and weaknesses of the technologies. **8**

Unit 2: Microorganisms in human diseases: A concise overview of aetiology, symptoms, transmission and control of some common diseases: bacterial (tuberculosis, cholera, typhoid, diphtheria), viral (rabies, hepatitis, zika, COVID , polio, AIDS), protozoan (malaria, kala azar) and fungal diseases (dermatophytoses, candidiasis, aspergillosis). **12**

Unit 3: Microbes for maintaining human health: Brief description and distinction between prebiotics, probiotics and synbiotics. Probiotics for maintaining human health: prerequisite characteristics of probiotic strains, common probiotic bacterial strains, modes of action of probiotics, probiotic supplementation for disease management. Bacteriophage therapy: concept and challenges. A brief account of bacteriophage therapy for various diseases. **10**

Practicals: **60 hours**

Unit 4. Study of human microflora: Isolation of microorganisms from skin by swab method using specific media: nutrient agar, mannitol salt agar, potato dextrose agar. Gram staining of bacterial isolates and lactophenol staining for fungal isolates. Gram staining of dental scrapings/plaques. Checking the efficacy of sanitizer on skin. study of the oligodynamic effect of metals on bacterial cultures. **Student group project**: multiple methods for sampling microbial biomass specimens for oral, skin, gut and respiratory microbiomes. **25**

Unit 5. Study of probiotics: Student group project: Conduction of a market survey to identify different probiotic products available in the market. Isolation and basic characterization of bacteria from probiotic products. Bacterial cell surface hydrophobicity (CSH) test to estimate bacterial adherence. Performance of acid and bile resistance test on bacterial strains. **25**

Unit 6. Bacteriophage isolation and typing: Principle, process and limitations of bacteriophage typing. Isolation of bacteriophages from sewage sample using double layer technique. **Student group project**: Phage therapy in India. **10**

Suggested Reading:

1. Brock Biology of Microorganisms by M.T. Madigan,J. Aiyer,D. Buckley,W.Sattley and D. Stahl.16th edition. Pearson, USA. 2021.
2. Prescott's Microbiology by J. M. Willey, K. Sandman and D. Wood. 11th edition. McGrawHill Higher Education, USA. 2019.
3. Textbook of Microbiology by R. Ananthanarayan and C.K.J. Paniker. 10th edition.Universities Press, India. 2017.
4. Jawetz, Melnick and Adelberg's Medical Microbiology by K.C. Carroll, S.A. Morse, T.A. Mietzner and S. Miller. 27th edition. McGraw Hill Education. 2016.
5. Microbiology: An Introduction by G.J. Tortora, B.R. Funke and C.L. Case. 9thedition.Pearson Education, USA. 2007.
6. Cappucino, J. and Sherman, N. (2014). Microbiology: A Laboratory Manual. 10th edition. Pearson Education, India.

7. Collee, J.G., Fraser, A.G., Marmion, B.P. and Simmons, A. (2007). Mackie and Mccartney Practical Medical Microbiology. Elsevier 14th edition 1996.

8. Randhawa, V.S., Mehta, G. and Sharma, K.B. (2009). Practicals and Viva in Medical Microbiology. 2nd edition. Elsevier, India.

9. Fuller, R. (2012). Probiotics: The Scientific Basis. Springer Netherlands.

10. Dhanasekaran, D. and Sankarnarayanan, A (2021). Advances in Probiotics, Microorganisms in Food and Health. Academic Press.

Facilitating the achievement of Course Learning Outcomes

Unit no.	Course Learning Outcomes	Teaching and learning Activity	Assessment Tasks
1.	Will be acquainted with the importance of the human microbiome including the benefits as well as possible harmful effects. They will have a fair knowledge of various types of microorganisms surviving on/in the human body	Class room lectures on human microbiome. Pictorial representation of various organ systems with the corresponding microflora.	Test and quiz on human microbiome.
2.	Will have gained knowledge about the spectrum of diseases caused by bacteria, viruses, protozoa and fungi. They will be familiar with the methods of transmission and control of various diseases.	Class room lectures on the aetiology, symptoms, transmission and control of various diseases. Pictorial representation of various signs and symptoms of diseases.	Test and quiz on symptoms, transmission and control of various diseases. Match the following type quiz on disease and causative agent. Identification of disease based on photographs of specific disease presentation.
3.	Will understand the role of probiotics in human health. They will have learnt about the characteristics of probiotic microorganisms and have a fair idea of prebiotics and synbiotics. They will also have an overview of	Class room lectures and videos on probiotics and bacteriophages.	Test and quiz on role of probiotics, prebiotics, synbiotics and bacteriophages.

	bacteriophages and their role in therapy.		
4.	Will have hands-on training on isolation of microorganisms from skin and staining of microorganisms collected from oral cavity, and will be able to check the efficacy of the sanitizer and antimicrobial action of heavy metals.	Class room lecture and hands-on practical of isolation of bacteria from skin surface and staining of bacteria from oral cavity. Determination of sanitizer efficacy on skin.	Demonstration of practicals. Quiz on various aspects of practicals including principle, observations, result and precautions.
5.	Will become aware of various probiotic products available in the market and the organisms included in these products. They will receive hands-on training for evaluation of various probiotic products and microbial strains.	Online and offline survey of probiotic products and types of probiotic organisms. Practical demonstration of isolation of probiotics and study of various properties.	Demonstration of practicals. Quiz on various aspects of practicals including principle, observations, result and precautions.
6.	Will have a fair understanding of bacteriophage typing and will also have hands on training in the isolation of bacteriophages from sewage samples.	Classroom lecture on bacteriophage typing. Practical performance of isolation of bacteriophages from sewage.	Quiz on various aspects of practicals including principle, observations, result and precautions.

*** Assessment tasks are indicative and may vary.**

MICROB-GE-3

FOOD FERMENTATION AND PRESERVATION TECHNIQUES

Marks: 100 (Theory = 50 marks
Practicals = 50 marks)

Duration: Theory = 30 hours (2 credits)
Practicals = 60 hours(2 credits)

Course objectives:

The major objective of this paper is to develop clear understanding about the microorganisms important in food and various factors affecting their growth. The students will gain in depth knowledge about food fermentation, their benefits and the processes involved in production of fermented foods. The concept of probiotic, prebiotic and synbiotics will also be discussed. The course also deals with the principle and the techniques involved in processing and preservation of food substances. The students will also be trained and be given hands on training in various microbiological techniques involved in food fermentation and food preservation. The course on completion can open many career options.

Pre-requisite: Student should have studied Biology/ Biotechnology/ Biochemistry in 12th standard.

Course learning outcomes:

Upon successful completion of the course, the student:

CO1: Will be familiar with the microbes important in food, their morphological, cultural, and physiological characteristics, and factors influencing their growth

CO2: Will have got an overview of fermented foods and their health benefits. Also, will be acquainted with the microbes and their processes involved in production of fermented foods.

CO3: Will have learnt about the causes of food spoilage and be aware of different preservation techniques used to increase the shelf life of food products.

CO4: Will have gained hands on experience in isolating and characterizing microbes from food.

CO5: Will have become familiar with the principle of food fermentation by production of fermented foods in the laboratory.

CO6: Will have an insight into various microbiological and biochemical testing techniques used for assessing the efficacy of various food preservation techniques.

Contents:

Theory: **30 hours**

Unit 1: Microorganisms in Food Microbiology: Introduction to microorganisms important in foods: morphological, cultural and physiological characteristics of moulds (*Aspergillus, Rhizopus*), yeast (*Saccharomyces)*, and bacteria (*Lactobacillus, Acetobacter),* Factors affecting microbial growth in foods- intrinsic (pH, water activity, mechanical barriers and redox potential) and extrinsic (temperature, gaseous atmosphere). **6**

Unit 2: Food Fermentation: History, definition and benefits of fermented foods. Types of food

fermentations (acid-, yeast-, solid state-, oriental and indigenous fermented foods). Production and maintenance of microbial cultures involved in food fermentation, starter culture and its problems. Production of dairy (dahi, yoghurt, kefir, cheese) and non-dairy fermented foods (dosa, kanji, sauerkraut, tempeh, soy sauce), beverages (beer, wine) and concept of pre-, pro- and syn- biotics. **12**

Unit 3: Principles of food preservation: Definition and causes of food spoilage. Classification of food by ease of spoilage. General principles of food preservation. Preservation by low temperature: freezing & refrigeration. Preservation by high temperature: pasteurisation and canning. Preservation by moisture control: drying and dehydration. Preservation by radiation: Gamma, microwaves and UV rays. Preservation by added food preservatives: salt, sugar, benzoate, nitrite and nitrate, wood smoke, nisin. Preservation by developed preservatives, modified atmosphere packaging. **12**

Practicals: 60 hours

Unit 4: Isolation and characterisation of microbes important in food: Isolation and microscopic examination of fungi from a spoiled bread. Isolation of lactic acid bacteria from curd using MRS medium and microscopic characterisation by Gram's staining. Effect of different temperatures/ salt concentration on microbial growth. **24**

Unit 5: Food fermentation: Preparation of kefir using kefir grains/ fermented cabbage (sauerkraut). Viability test for yeast using methylene blue. Survey on the availability and usage of various probiotic foods from market. **12**

Unit 6: Food Preservation: Effect of blanching on food preservation. Incubation test for cans/ tetrapack to determine sterility. Alkaline phosphatase test to check efficiency of pasteurization of milk: principle, performance of the test with various pasteurized milk samples, evaluation of milk quality based on results obtained. Assessment of efficiency of sterilisation of milk: principle and performance of Turbidity Test and evaluation of milk quality based on obtained results. **24**

Suggested Readings:

1. Food processing and preservation by H. Naik and T. Amin. CRC Press. 2022.
2. Microbiology: A Laboratory Manual by J. Cappuccino and C.T. Welsh. 12th edition. Pearson Education, USA. 2020.
3. Microbiology and Technology of fermented foods by R. Hutkins. 2nd edition. Wiley Blackwell, UK. 2019.
4. Food Microbiology by W.C. Frazier, D.C. Westhoff, and N.M. Vanitha. 5th edition. TataMcGraw-Hill Publishing Company Ltd, India. 2017.
5. Handbook of fermented functional foods by F. Edward. 2nd Edition. CRC press, UK. 2016.
6. FSSAI Manual of methods of analysis of foods. Food safety and standards Authority of India, Ministry of Health and Family Welfare, Government of India, 2015.
7. Advances in Fermented Foods and Beverages by W. Holzapfel. 1st edition. Woodhead Publishing, USA. 2014.

8. Handbook of food and beverage fermentation technology by Y. Hui, L. Meunier-Goddik, J. Josephsen, W. Nip and P. Stanfield. 1st edition. CRC Press, UK. 2004.

Facilitating the achievement of Course Learning Outcomes

S. No.	Course Learning Outcomes	Teaching and Learning Activity	Assessment Tasks
1.	Will be familiar with the microbes important in food, their morphological, cultural, and physiological characteristics, and factors influencing their growth	Interactive sessions with power point presentations on the morphological, cultural, and physiological characteristics of microbes important in food	Assignment and quiz on the characteristics of microbes associated with food and factors influencing their growth
2.	Will have got an overview of fermented foods and their health benefits. Also, will be acquainted with the microbes and their processes involved in production of fermented foods	Classroom lectures and detailed discussion on the fermentation process through flow charts, power point presentations and relevant online videos	Students to collect samples of various fermented foods available commercially and do market survey on their consumption. Class test / Assignment on MFC and types of starter cultures
3.	Will have learnt about the causes of food spoilage and be aware of different preservation techniques used to increase the shelf life of food products.	Teaching of various preservation techniques through power point presentations and online videos	Class tests, Quiz and MCQs on the various preservation methods
4.	Will have gained hands on experience in isolating and characterizing microbes from food.	Media preparation and sterilization, isolation & identification of various microbes in food. Also understanding the importance of various physical- chemical factors on growth	Drawing well labelled diagrams of microscopic observations of isolated fungi and bacteria from food
5.	Will have become familiar with the principle of food fermentation by production of fermented foods in the laboratory.	Hands on training on the laboratory preparation of fermented foods and survey on the consumption pattern of fermented foods	Compilation of report on the survey done by the students to understand the availability and acceptance of fermented foods
6.	Will have an insight into various microbiological and biochemical testing techniques used for assessing the efficacy of various food preservation techniques.	Laboratory training in processing and preservation protocols for different food products	Viva voce, multiple choice questions and spotting

***Assessment tasks listed here are indicative and may vary**

MICROB-GE-4

MICROBIAL QUALITY CONTROL AND TESTING

Marks: 100 (Theory = 50 marks
Practicals = 50 marks)

Duration: Theory = 30 hours (2 credits)
Practicals = 60 hours(2 credits)

Course objectives:

The main objective of the course is to underscore the importance of microbiological quality control in various sectors. Students will gain in-depth knowledge about criteria and procedures for safety in quality assurance in water, food and pharmaceutical sector. They will become proficient in various microbiological techniques used for quality testing of samples will be discussed. They will gain hands-on training in basic microbiological techniques used for quality testing.

Pre-requisite: Student should have studied Biology/ Biotechnology/ Biochemistry in 12th standard.

Course Learning Outcomes:

Upon successful completion of the course, the students:

CO1: Will have acquired knowledge about microbiological quality through Good Microbiological laboratory Practices (GMLP), biosafety levels, quality control of microbiological culture media, sterilization and antimicrobial susceptibility test.

CO2: Will have learnt methods to assess potability of drinking water, and become aware of Hazard analysis critical control point (HACCP) for food safety, as well as microbial limits in food and pharmaceutical products. Will be familiar with various microbiological standards and certifications by accredited certification bodies.

CO3: Will have gained insights into various microbiological, biochemical, molecular and immunological testing techniques used for assessing quality of drinking water and food products.

CO4: Will be capable of assessing the potability of water by performing various microbiological tests.

CO5: Will be capable of performing various biochemical and microbiological tests used to evaluate the quality of milk, packaged foods, pharmaceutical formulation and will gain knowledge about using phenol coefficient test for assessing quality of disinfectants.

CO6: Will learn to design HACCP plan for any food product manufacture like milk processing and packaging.

Contents:

Theory: **30 hours**

Unit 1: Safety practices and quality control in microbiology: Principles of Good microbiological laboratory practices (GMLP), Concept of biosafety levels (BSLs), Safety equipment and protective measures used in different categories of biosafety levels laboratories. Examples of microorganisms that are classified as BSL-1 to BSL-4. Quality control of microbiological culture media, sterilization, antimicrobial susceptibility test. **6**

Unit 2: Quality control and assurance in water, food and pharmaceutical sector: Water potability: criteria and procedures for quality assurance of drinking water, recommended quality control strains for water testing, recommendations of Environmental Protection Agency (EPA) for drinking water quality. Food safety and microbiology: overview of health hazards related to food, Hazard analysis of critical control point (HACCP) for food safety. Role of Codex Alimentarius Commission (CAC) in safety of food and agriculture products. BIS standards, FSSAI standards, ISO certification. Sterility testing of food and pharmaceutical products: importance and objectives, microbial limits. **10**

Unit 3: Microbial quality control tests: Collection and processing samples for testing. Detection of microorganisms and sample testing by culture and microscopic methods: direct microscopic counts (fluorescence-based), standard plate count method, selective media (*Salmonella-Shigella* agar, mannitol salt agar, EMB agar, McConkey agar), Bioburden testing, Most Probable Number (MPN), membrane filtration test, phenol coefficient test. Detection of microorganisms and sample testing by molecular methods: nucleic acid probes, PCR-based detection. Biosensors. Detection of microorganisms and sample testing by biochemical and immunological methods: Endotoxin testing by Limulus lysate test, pyrogen testing, rapid detection methods by Clot-on-Boiling Test **(**COB), Resazurin assay. **14**

Practicals: 60 hours

Unit 4: Water potability: Testing potability of water samples by standard procedures: Most Probable Number method (MPN) /presumptive test, confirmed test, completed test for faecal contamination: principles of the methods, performance of the tests with various water samples using differential and selective media, evaluation of the water quality based on the results obtained. Testing water potability by using standard kits. **20**

Unit 5: Food quality control and assurance: Assessment of the microbiological quality of raw versus pasteurized milk by Methylene Blue Dye Reduction Test (MBRT), evaluation and grading of milk quality based on the results obtained. Clot on boiling (COB) test of milk samples: principle, performance of the test with milk samples, and evaluation of milk quality based on results obtained. Sterility testing of canned food, tetra pack drinks and any pharmaceutical formulation (eye drops/ injection ampules) by either using the membrane filtration test or by standard plate count method. Detection of microorganisms in food samples through any one differential and selective medium. Demonstration of phenol coefficient test to evaluate efficacy of disinfectants using standard kits. **28**

Unit 6: HACCP: Student research study project: Designing of HACCP plan for milk processing and packaging or any other food product: product description, flowchart of production, assessing hazards and risks associated with different steps of production till consumption, identification of critical control points (CCP) and critical limits, suggestive procedures to monitor CCPs and corrective actions, effective record keeping to document the HACCP plan, and procedures for verification. **12**

Suggested Reading:

1. Analytical Food Microbiology: A Laboratory Manual by A.E. Yousef, J.G. Waite-Cusic and J.J. Perry. 2nd edition. Wiley Publishers, UK. 2022.

2. Laboratory Manual of Food Microbiology by N. Garg, K.L. Garg and K.G. Mukerji. Dreamtech Press, India. 2021.

3. Microbiology: A Laboratory Manual by J. Cappuccino and C.T. Welsh. 12th edition.

Pearson Education, USA. 2020.

4. Prescott's Microbiology by J. M. Willey, K. Sandman and D. Wood. 11th edition. McGrawHill Higher Education, USA. 2019.

5. Food Safety & Quality Control by P. Mathur. Orient Black Swan Pvt. Ltd., India. 2018.

6. Manuals of methods of analysis of foods and water by Food safety and standards authority of India, Ministry of health and family welfare, Government of India, 2016.

7. Food Microbiology by W.C. Frazier, D.C. Westhoff, and N.M. Vanitha. 5th edition. TataMcGraw-Hill Publishing Company Ltd, India. 2013.

8. Handbook of Microbiological Quality Control in Pharmaceuticals and Medical Devices by R.M. Baird and S.P. Denver. 1st edition, CRC Press, U.K. 2000.

9. Microbiological Analysis of Food and Water: Guidelines for Quality Assurance by N.F. Lightfoot and E.A. Maier. Elsevier Science. 1998.

10. Essentials of Food Microbiology by J.H. Garbutt. 2nd edition. Hodder Arnold Publishers. 1997.

Facilitating the achievement of course learning objectives

Unit No.	Course learning outcomes	Teaching and learning activities	Assessment tasks*
1.	Will have acquired knowledge about microbiological quality through Good Microbiological laboratory Practices (GMLP), biosafety levels, quality control of microbiological culture media, sterilization and antimicrobial susceptibility test.	Classroom lectures on biosafety and Good Microbiological Laboratory Practices (GMLP).	Assignment on Biosafety, Good Microbiological Laboratory Practices (GMLP).
2.	Will have learnt methods to assess potability of drinking water, and become aware of Hazard analysis critical control point (HACCP) for food safety, as well as microbial limits in food and pharmaceutical products. Will be familiar with various microbiological standards and certifications by accredited certification	Detailed discussion on control, regulation and inspection measures of water and food products that ensure the consumer receives products of good microbiological quality.	Class test and quiz on quality assurance and control.

	bodies.		
3.	Will have gained insights into various microbiological, biochemical, molecular and immunological testing techniques used for assessing quality of drinking water and food products.	Teaching various microbiological examination techniques and tools through flow charts, powerpoint presentations and relevant online videos.	Quiz and MCQ's on various tests and techniques for microbiological assessment of water and food products.
4.	Will be capable of assessing the potability of water by performing various microbiological tests.	Hands on training to assess the quality of various water samples by using kits and by preparing and inoculating different differential, selective and biochemical media eg. Lactose fermentation broth, EMB agar, peptone water, glucose peptone broth and Simmons citrate agar.	Viva and quiz on various differential and selective media and biochemical tests.
5.	Will be capable of performing various biochemical and microbiological tests used to evaluate the quality of milk, packaged foods, pharmaceutical formulation and will gain knowledge about using phenol coefficient test for assessing quality of disinfectants.	Practical laboratory sessions on the evaluation of microbiological quality of milk, various packaged foods and pharmaceutical products. Insight into the testing of bactericidal efficacy of various disinfectants using phenol coefficient test.	A short report on the microbiological quality of packaged food items available in the college canteen.
6.	Will learn to design HACCP plan for any food product manufacture like milk processing and packaging.	Guiding students in the preparation of a document in accordance with the principles of HACCP system for a food chain from primary production to final consumption.	Posters/charts on HACCP plan.

***Assessment tasks are indicative and may vary.**

MICROB-GE-5

MICROBES IN ANIMAL HEALTH

Marks: 100 (Theory = 50 marks
Practicals = 50 marks)

Duration: Theory = 30 hours (2 credits)
Practicals = 60 hours(2 credits)

Course objectives:

The main objective of this course is to introduce the students to the importance of microorganisms in animal health. Students will learn about the interactions of microbes with various types of livestock and pet animals. Students will be introduced to various bacterial, fungal, viral and protozoan diseases of animals. They will be introduced to various types of microorganisms residing in rumen, and learn about various methods for obtaining blood, rumen fluid and milk samples from animals. They will be introduced to principles of various diagnostic methods used in lab diagnosis of animal infections. Students will learn about the vaccination schedule followed for cattle and poultry.

Pre-requisite: Student should have studied Biology/ Biotechnology/ Biochemistry in 12th standard.

Course Learning Outcomes:

Upon successful completion of the course, the student:

CO1: Will be acquainted with various types of livestock and pet animals, rumen microflora, and their advantages and disadvantages.

CO2: Will have gained knowledge about the spectrum of diseases caused by bacteria and fungi in animals, becoming familiar with the symptoms, transmission mode, treatment, prevention and control of various bacterial and fungal diseases.

CO3: Will understand the symptoms, transmission, treatment, prevention and control of various diseases caused by viruses and protozoa.

CO4: Will be familiar with various methods of sampling of blood and rumen fluid. Will have had hands-on training for the detection of mastitis by testing milk samples.

CO5: Will be aware of the principles of serological tests based on agglutination, precipitation, haemagglutination inhibition, ELISA and lateral flow assays for diagnosis of animal diseases/infection.

CO6: Will have a fair understanding of vaccination schedule followed for cattle, buffalo and poultry. They will learn the concept of differentiation between the vaccinated and infected animals.

Contents:

Theory: **30 hours**

Unit 1. Introduction to livestock and rumen microflora: A brief introduction of various types of livestock and pet animals: cattle, sheep, goat, dogs, cats and poultry. Different types of microbes in rumen along with their functions: archaebacteria (methanogens), bacteria, protozoa, fungi (cellulolytic and proteolytic). **8**

Unit 2. Bacterial and fungal diseases of animals: A concise overview of aetiological agent, symptoms, transmission, treatment, prevention and control of the following bacterial and fungal diseases: anthrax, brucellosis, mastitis, Johne's disease, campylobacteriosis, black quarter, haemorrhagic septicemia (HS), aspergillosis and mucormycosis. **12**

Unit 3. Viral and protozoan diseases of animals: An overview of aetiological agent, symptoms, transmission, treatment, prevention and control of following viral diseases: foot and mouth disease (FMD), rinderpest/PPR, blue tongue disease, avian influenza, canine distemper, rabies, babesiosis, theileriosis and trypanosomiasis. **10**

Practicals: 60 hours

Unit 4. Sampling methods for obtaining blood, rumen fluid and milk: Sampling of blood from cattle, sheep, goat, dog, cat, mice and poultry by virtual lab. Sampling of rumen fluid: syringe, rumenotomy by virtual lab/video. Sampling of milk: California mastitis test. **15**

Unit 5. Serological tests for diagnosis of infectious agent: Principle and working method of**:** Agglutination, precipitation, haemagglutination inhibition assay, ELISA, and Lateral flow assay for antigen detection. **30**

Unit 6. Vaccination of livestock animals: Concept of differentiation between infected and vaccinated animal (DIVA test) for FMD and brucellosis. **Student group project**: Research study and review of the vaccination schedules for cattle, buffalo and poultry. **15**

Suggested Reading:

1. Brock Biology of Microorganisms by M.T. Madigan, K.S. Bender, D.H. Buckley, W.M. Sattley and D.A. Stahl. 16th edition. Pearson Education, USA. 2021.
2. Microbiology: A Laboratory Manual by J. Cappuccino and C.T. Welsh. 12th edition. Pearson Education, USA. 2020
3. Prescott's Microbiology by J. M. Willey, K. Sandman and D. Wood. 11th edition. McGrawHill Higher Education, USA. 2019.
4. Microbiology: An Introduction by G.J. Tortora, B.R. Funke,and C.L. Case. 13th edition. Pearson, USA. 2018.
5. Textbook of Microbiology by R. Ananthanarayan and C.K.J. Paniker. 10th edition.Universities Press, India. 2017.
6. Jawetz, Melnick and Adelberg's Medical Microbiology by K.C. Carroll, S.A. Morse, T.A.Mietzner and S. Miller. 27th edition. McGraw Hill Education. 2016.
7. Veterinary Microbiology by D. Scott McVey, Melissa Kennedy and M.M. Chengappa. 3rd edition. Wiley – Blackwell, USA. 2013.
8. Handbook of Good Dairy Husbandry Practices. National Dairy Development Board (NDDB).
9. Practicals and Viva in Medical Microbiology by V. Randhawa, G. Mehta and K. Sharma. 2nd edition. Elsevier, India. 2009.

10. Mackie and McCartney Practical Medical Microbiology by J. Collee, A. Fraser, B. Marmion and A. Simmons. 14th edition. Elsevier publications. 1996

Facilitating the achievement of Course Learning Outcomes

Unit no.	Course Learning Outcomes	Teaching and learning Activity	Assessment Tasks
1.	Will be acquainted with various types of livestock and pet animals, rumen microflora, and their advantages and disadvantages.	Class room lectures on livestock, pet animals and rumen microflora. Pictures of various animal breeds.	Test and quiz on livestock, pet animals and rumen microflora.
2.	Will have gained knowledge about the spectrum of diseases caused by bacteria and fungi in animals, becoming familiar with the symptoms, transmission mode, treatment, prevention and control of various bacterial and fungal diseases.	Class room lectures on the aetiology, symptoms, transmission, treatment, prevention and control of bacterial and fungal diseases in animals. Pictorial representation of various signs and symptoms of diseases.	Test and quiz on symptoms, transmission and control of various diseases. Match thefollowing type quizon disease and causative agent. Identification of disease based on photographs of specific disease presentation. MCQson causation of disease and prevention and control.
3.	Will understand the symptoms, transmission, treatment, prevention and control of various diseases caused by viruses and protozoa.	Class room lectures on the aetiology, symptoms, transmission, treatment, prevention and control of viral and protocoan diseases in animals. Pictorial representation of various signs and symptoms of diseases.	Test and quiz on symptoms, transmission and control of various diseases. Match thefollowing type quizon disease and causative agent. Identification of disease based on photographs of specific disease presentation.

			MCQson causation of disease and prevention and control.
4.	Will be familiar with various methods of sampling of blood and rumen fluid. Will have had hands-on training for the detection of mastitis by testing milk samples.	Various sampling methods through virtual lab / videos. Performance of California test for diagnosing mastitis.	Quiz on various aspects of the practicals. Recording of principle, observations, result and precautions in practical records.
5.	Will be aware of the principles of serological tests based on agglutination, precipitation, haemagglutination inhibition, ELISA and lateral flow assays for diagnosis of animal diseases/infection.	Various diagnostic methods through virtual lab / videos. Performance of ELISA/lateral flow assay.	Quiz on various aspects of the practicals. Recording of principle, observations, result and precautions in practical records
.6.	Will have a fair understanding of vaccination schedule followed for cattle, buffalo and poultry. They will learn the concept of differentiation between the vaccinated and infected animals.	Student group research study and group discussion on vaccination for various diseases and concept of differentiation of infectious and vaccinated animals (DIVA).	Quiz on various vaccines and concept of DIVA.

*** Assessment tasks are indicative and may vary.**

All Courses (other than B.Sc. (Hons.) Mathematics) (Sem I)
GE-1(i): Fundamentals of Calculus

Total Marks: 100 (Theory: 75, Internal Assessment: 25) **Examination:** 3 Hrs.
Workload: 3 Lectures, 1 Tutorial (per week) **Credits:** 4

Course Objectives: Calculus is referred as 'Mathematics of change' and is concerned with describing the precise way in which changes in one variable relate to the changes in another. Through this course, students can understand the quantitative change in the behaviour of the variables and apply them on the problems related to the environment.

Course Learning Outcomes: The students who take this course will be able to:

i) Understand continuity and differentiability in terms of limits.
ii) Describe asymptotic behavior in terms of limits involving infinity.
iii) Understand the importance of mean value theorems and its applications.
iv) Learn about Maclaurin's series expansion of elementary functions.
v) Use derivatives to explore the behavior of a given function, locating and classifying its extrema, and graphing the polynomial and rational functions.

Unit 1: Continuity and Differentiability of Functions

Limits and continuity, Types of discontinuities; Differentiability of functions; Successive differentiation: Calculation of the *n*th derivatives, Leibnitz theorem; Partial differentiation, Euler's theorem on homogeneous functions.

Unit 2: Mean Value Theorems and its Applications

Rolle's theorem, Mean value theorems and applications to monotonic functions and inequalities; Expansion of functions: Taylor's theorem, Taylor's series, Maclaurin's series expansion of $e^x, \sin x, \cos x, \log(1+x)$ and $(1+x)^m$; Indeterminate forms.

Unit 3: Tracing of Curves

Concavity and inflexion points, Asymptotes (parallel to axes and oblique), Relative extrema, Tracing graphs of polynomial functions, rational functions, and polar equations.

References:

1. Anton, Howard, Bivens, Irl, & Davis, Stephen (2013). *Calculus* (10th ed.). Wiley India Pvt. Ltd. New Delhi. International Student Version. Indian Reprint 2016.
2. Prasad, Gorakh (2016). *Differential Calculus* (19th ed.). Pothishala Pvt. Ltd. Allahabad.

Additional Reading:

i. Thomas Jr., George B., Weir, Maurice D., & Hass, Joel (2014). *Thomas*' *Calculus* (13th ed.). Pearson Education, Delhi. Indian Reprint 2017.

All Courses (other than B.Sc. (Hons.) Mathematics) (Sem I)
GE-1(ii): Theory of Equations and Symmetries

Total Marks: 100 (Theory: 75, Internal Assessment: 25) **Examination:** 3 Hrs.
Workload: 3 Lectures, 1 Tutorial (per week) **Credits:** 4

Course Objectives: The goal of this paper is to acquaint students with certain ideas about integral roots, rational roots, an upper bound on number of positive or negative roots of a polynomial, and finding roots of cubic and quartic equations in special cases using elementary symmetric functions and in general using Cardon's and Descartes' methods, respectively.

Course Learning Outcomes: After completion of this paper, the students will be able to:

i) Understand the nature of the roots of polynomial equations and their symmetries.
ii) Solve cubic and quartic polynomial equations with special condition on roots and in general.
iii) Find symmetric functions in terms of the elementary symmetric polynomials.

Unit 1: Polynomial Equations and Properties

General properties of polynomials and equations; Fundamental theorem of algebra and its consequences; Theorems on imaginary, integral and rational roots; Descartes' rule of signs for positive and negative roots; Relations between the roots and coefficients of equations, Applications to solution of equations when an additional relation among the roots is given; De Moivre's theorem for rational indices, the *n*th roots of unity and symmetries of the solutions.

Unit 2: Cubic and Biquadratic (Quartic) Equations

Transformation of equations (multiplication, reciprocal, increase/diminish in the roots by a given quantity), Removal of terms; Cardon's method of solving cubic and Descartes' method of solving biquadratic equations.

Unit 3: Symmetric Functions

Elementary symmetric functions and symmetric functions of the roots of an equation; Newton's theorem on sums of the like powers of the roots; Computation of symmetric functions such as $\sum\alpha^2\beta,\ \sum\alpha^2\beta^2, \sum\alpha^2\beta\gamma, \sum\frac{1}{\alpha^2\beta\gamma}, \sum\alpha^{-3}, \sum(\beta+\gamma-\alpha)^2,\ \sum\frac{\alpha^2+\beta\gamma}{\beta+\gamma},\ldots$ of polynomial equations; Transformation of equations by symmetric functions and in general.

References:

1. Burnside, W.S., & Panton, A.W. (1979). *The Theory of Equations* (11th ed.). Vol. 1. Dover Publications, Inc. (4th Indian reprint. S. Chand & Co. New Delhi).
2. Dickson, Leonard Eugene (2009). *First Course in the Theory of Equations*. John Wiley & Sons, Inc. The Project Gutenberg eBook: http://www.gutenberg.org/ebooks/29785

Additional Reading:

i. Prasad, Chandrika (2017). *Text Book of Algebra and Theory of Equations*. Pothishala Pvt Ltd.

Course Type: Generic Elective (GE)
Course Title: Delhi Through the Ages: The making of its early Modern History

Course Objective:
The objective of the paper is to explore the city of Delhi from its early history to the eighteenth century. The city grew into one of the largest cities in the world and was the capital of some of the great empires. As capital Delhi profited from continuous immigration, state patronage and vibrant cultural life. The city was not merely dependent upon its rulers for cultural and political sustenance. The course also focuses on Sufis, litterateurs and merchants who also gave the city its unique character and resilience in the face of political turbulence.

Learning Outcomes:
Upon completion of this course the student shall be able to:

- To acquaint students with the history of Delhi till the early modern period.
- Analyse the processes of urbanization as shaped by political, economic and social changes

Course Content:
Unit I: Delhi's Early History: Indraprastha, Ashokan Edicts, Mehrauli Iron Pillar, Lalkot
Unit II: From Settlements to Cityscape - Understanding the 13th and 14th Century Cities of Delhi. Case Study Any Two:

1. Dehli-i Kuhna's Masjid-i Jami
2. Siri
3. Ghiyaspur-Kilukhari
4. Tughulqabad
5. Firuzabad

Unit III: 16th to 17th Century Delhi:

1. Humayun's Garden Tomb
2. Morphology of Shahjahanabad

Unit IV: 18th Century Delhi - Understanding political and social changes

Essential Readings:
Unit 1: This unit will introduce students to the early history of Delhi, focusing on Indraprastha ancient edicts and pillars and the Tomar and Chauhan constructions. (Teaching Time: 3 Weeks)

- Richard J. Cohen, "An Early Attestation of the Toponym Ḍhillī", *Journal of the American Oriental Society*, Vol. 109 (1989), pp. 513-519.
- Singh, Upinder. (2006). *Ancient Delhi*, Delhi: Oxford University Press
- Mani, B.R. (1997). Delhi: Threshold of the Orient; (Studies in ArchaeologicalInvestigations), Aryan Books International

Unit 2: This unit will study the cities of Sultanate Delhi in the 13th and 14th centuries. It will discuss the various reasons for the shift of capitals and the changing character of the city. Case studies of any two of these cities will be undertaken. Students will be encouraged to plan field trips related to the themes and readings. (Teaching Time : 4 Weeks)

- Ali, Athar. (1985). "Capital of the Sultans: Delhi through the 13th and 14th Centuries", in R.E. Frykenberg, ed., *Delhi Through the Age: Essays in Urban History, Culture and Society*, Delhi: Oxford University Press, pp. 34-44
- Kumar, Sunil. (2019) "The Tyranny of Meta-Narratives; Re-reading a History of Sultanate Delhi", in Kumkum Roy and Naina Dayal. (Ed.). *Questioning Paradigms, Constructing Histories: A Festschrift for Romila Thapar*, Aleph Book Company, pp 222-235.
- Kumar, Sunil. (2011). "Courts, Capitals and Kingship: Delhi and its Sultans in theThirteenth and Fourteenth Centuries CE" in Albrecht Fuess and Jan Peter Hartung. (eds.).*Court Cultures in the Muslim World: Seventh to Nineteenth Centuries,* London: Routledge,pp. 123-148
- Kumar, Sunil. (2009) 'Qutb in Modern Memory'. In: Kaul, Suvir, (ed.), Partitions of Memory. Delhi: Permanent Black, pp. 140-182.
- Jackson, Peter. (1986). 'Delhi: The Problem of a Vast Military Encampment', in: R.E. Frykenberg (ed.). *Delhi Through the Ages: Essays in Urban History, Culture, and Society*,New Delhi: Oxford University Press, 1986), pp.18-33.
- Haidar, Najaf. (2014). 'Persian Histories and a Lost City of Delhi', *Studies in People's History*, vol. 1, pp. 163–171
- Aquil, R. (2008). "Hazrat-i-Dehli: The Making of the Chishti Sufi Centre and the Stronghold of Islam." *South Asia Research* 28: 23–48.
- Welch, Anthony and Howard Crane. (1983). "The Tughluqs: Master Builders of the Delhi Sultanate ": *Muqarnas*, vol. 1 pp. 123-166.
- Welch, Anthony. (1993). Architectural Patronage and the Past: The Tughluq Sultans of India: Muqarnas, Vol. 10, Essays in Honor of Oleg Graber, pp. 311-322, Published by Brill. https://www.jstore.org/stable/1523196

Unit 3: This unit will explore the structure and meanings of Humayun's Garden Tomb and morphology of the imperial city of Shahjahanabad, in the 16th and 17th centuries (Teaching time: 4 weeks)

- Chandra, Satish. (1991). "Cultural and Political Role of Delhi, 1675-1725", in R.E.Frykenberg, *Delhi through the Ages: Essays in Urban History, Culture and Society*, Delhi:Oxford University Press, pp. 106-116.
- Blake, Stephen, (1985). "Cityscape of an Imperial City: Shahjahanabad in 1739", in R.E. Frykenberg, Delhi Through the Ages: Essays in Urban History, Culture and Society, Oxford University Press, pp. 66-99.

- Hasan, Nurul, S. (1991). "The Morphology of a Medieval Indian City: A Case Study of Shahjahanabad", In Indu Banga (ed.). The City in Indian History, Delhi: Manohar, pp. 87-98.
- Gupta. Narayani. (1993). "The Indomitable City," in Eckart Ehlers and Thomas Krafft, eds., *Shahjahanabad / Old Delhi: Tradition and Change*. Delhi: Manohar, pp. 29-44.
- Koch, Ebba. (1994). "Diwan-iʿAmm and Chihil Sutun: The Audience Halls of Shah Jahan". *Muqarnas*, vol. 11, pp. 143-165.
- Lowry, Glenn D. (1987). Humayun's Tomb: Form Function, and Meaning in Early Mughal Architecture. Muqarnas, Vol. 4, pp. 133-148
- Dickie, James (Zaki, Yakub), (1985). The Mughal Garden: Gateway to Paradise, Muqarnas, Vol. 3, pp. 128-137.
- Koch, Ebba. (1997). 'Mughal Palace Gardens from Babur to Shahjahan (1526-1648), Muqarnas, pp. 143-165.
- Rezavi, Syed Ali Nadeem, (2010). "The Mighty Defensive Fort': Red Fort at Delhi Under Shahjahan -- Its Plan and Structures as Described by Muhammad Waris." *Proceedings of the Indian History Congress* 71, pp. 1108–1121.

Unit 4: This unit will discuss the developments in Shahjahanabad in the 18th century. The 'decline' in the authority meant turbulence in the city, but it also empowered new groups of people and created a cultural and social dynamism that was embraced by some and seen as a challenge by others. (Teaching Time: 4 Weeks)

- Alam, Muzaffar. (2013) "Introduction to the second edition: Revisiting the Mughal Eighteenth Century" in *The Crisis of Empire in Mughal North India: Awadh and the Punjab 1707-1748*, Delhi: Oxford University Press, pp. xiii-lxiv
- Ataullah. (2006-2007). "Mapping 18th Century Delhi: the cityscape of a pre-Modern sovereign city" *Proceedings of the Indian History Congress*, vol. 67 pp. 1042-1057.
- Chenoy, Shama Mitra. (1998). *Shahjahanabad, a City of Delhi, 1638-1857*. New Delhi: Munshiram Manohar Lal Publishers.
- Raziuddin Aquil, (2017) "Violating Norms of Conduct" in *The Muslim Question: understanding Islam and Indian History*, Delhi: Penguin Random House, pp. 133-156.

Suggested Readings:

- Anthony Welch, 'A Medieval Centre of Learning in India: The Hauz Khas Madrasa in Delhi', *Muqarnas*, 13 (1996): 165-90;
- Anthony Welch, 'The Shrine of the Holy Footprint in Delhi', *Muqarnas*, 14 (1997): 116-178;
- Asher, Catherine B. (2000). "Delhi Walled: Changing Boundaries" in James D. Tracy, *City Walls: The Urban Enceinte in Global Perspective*, Cambridge: Cambridge University Press, pp. 247-281.

- Bayly, Christopher Alan. (1986). "Delhi and Other Cities of North India during the 'Twilight'", in *Delhi through the Ages: Essays in Urban History, Culture, and Society*, edited by Robert Eric Frykenberg, Delhi: Oxford University Press, pp. 221–36.
- Blake, Stephen P. (1991). *Shahjahanabad: The Sovereign City in Mughal India, 1639-1739*. Cambridge; New York: Cambridge University Press.
- Chandra, Satish. (1991). "Cultural and Political Role of Delhi, 1675-1725", in R.E.Frykenberg, *Delhi through the Ages: Essays in Urban History, Culture and Society*, Delhi:Oxford University Press, pp. 106-116.
- Hasan, Zafar. (1922). *A Guide to Nizamu-d Din*. New Delhi: Memoirs of the Archaeological Survey of India #10
- Habib, Irfan. (1978). 'Economic History of the Delhi Sultanate -- an Essay in
- Interpretation', *Indian Historical Review* vol. 4, pp. 287-303.
- Flood, Finbarr B. (2008). "Introduction" in Finbarr B. Flood, *Piety and Politics in the Early Indian Mosque,* Delhi: Oxford University Press, pp. xi-lxxviii
- Matsuo, Ara. (1982). "The Lodi Rulers and the Construction of Tomb-Buildings in Delhi". *Acta Asiatica*, vol. 43, pp. 61-80.
- Moosvi, Shireen. (1985) "Expenditure on Buildings under Shahjahan–A Chapter of Imperial Financial History." *Proceedings of the Indian History Congress,* vol. 46 pp. 285–99.
- Page, J.A. (1926). *An Historical Memoir on the Qutb*. New Delhi: Memoirs of the Archaeological Survey of India #22
- Page, J.A. (1937). *A Memoir on Kotla Firoz Shah, Delhi*. New Delhi: Memoirs of the Archaeological Survey of India #52
- Shamsur Rahman Faruqi, (2001). "A True Beginning in the North" and "A Phenomenon called 'Vali'" in *Early Urdu Literary Culture and History*, Delhi: Oxford University Press,pp. 109-126, 129-142.
- Shokoohy, Mehrdad. (2007). *Tughluqabad: a paradigm for Indo-Islamic Urban planning and its architectural components*. London: Araxus Books.
- Singh, Upinder. ed., (2006) *Delhi: Ancient History*, Delhi: Social Science Press
- Flood, Finbarr B. (2003). "Pillars, Palimpsests, and Princely Practices: Translating the past in Sultanate Delhi" R*ES: Anthropology and Aesthetics,* No. 43, Islamic Arts, pp. 95-116.
- Anand Taneja, 'Saintly Visions: Other histories and history's others in the medieval ruins of Delhi' *IESHR*, 49 (2012).
- Pinto, Desiderios. J. (1989). "The Mystery of the Nizamuddin Dargah: the Account of Pilgrims", in Christian W. Troll, ed., *Muslim Shrines in India*, Delhi: Oxford University Press, pp. 112-124.

Teaching Learning Process:

Classroom teaching is supported by group discussions or group presentations on specific themes/ readings. Given that the students enrolled in the course are from a non-history background,

adequate emphasis shall be given during the lectures to what is broadly meant by the historical approach and the importance of historicising various macro and micro-level developments/phenomena. Interactive sessions through group discussions or group presentations shall be used to enable un-learning of prevailing misconceptions about historical developments and time periods, as well as to facilitate revision of issues outlined in the lectures. Supporting audio-visual aids like documentary films and power point presentations, and an appropriate field- visit will be used where necessary.

Assessment Methods: Students will be regularly assessed for their grasp on debates and discussions covered in class. Two written submissions; one of which could be a short project, will be used for the final grading of the students. Students will be assessed on their ability to explain important historical trends and thereby engage with the historical approach.
Internal Assessment: 25 Marks
Written Exam: 75 Marks To-
tal: 100 Marks

Keywords: History, settlements, cityscape, morphology, social empowerment, Delhi, Urbanisation

Course Type: Generic Elective (GE)
Course Title: Science, Technologies and Humans: Contested Histories

Course Objectives:
This course proposes to examine the history 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 the unknown and the need to predict the future which often ventures into providence has been explored through case studies of astronomy and astrology. The paper analyses the impact of hegemony of Colonial science on traditional knowledge systems. It proposes a case study to highlight the highly contested heritage of science. The thin line between military and peaceful use of technology in the capitalist economy also constitutes an important component of this paper. A brief discussion on Science and nation making has been introduced to highlight the role of important figures and women in sciences that shaped the nature of scientific development in India.

Learning Outcomes:
After completing this course, students should 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.
- Define various initiatives taken by the government for promotion of science andtechnology.

Course Content

Unit 1: Science, Technology and Society

1. Revisiting 'Scientific Revolution'
2. Colonialism and Science

Unit 2: Science: Contestation and Exchanges

1. Decimal and Zero
2. Hegemony of documentation

Unit 4: Economics of Technologies: Questions of Ethics

1. Generic Medicines
2. Industrial Disasters

Unit 5: Science and nation making

1. Atomic Power
2. Policies and Institutions
3. Homi Jehangir Bhabha, Meghnad Shaha, E. K. Janaki Ammal

Essential Readings and Unit Wise Teaching Outcomes:

Unit-1: Science and technology have a very complex relationship with society. Populatanding of 'Science' and 'Technology' will be unpacked to convey the role of colonial power in establishing the hegemony of western knowledge systems. **(Teaching Time: 4 weeks Approx.)**

- Pati, Biswamoy & Harrison, Mark. (2001). Introduction in Biswamoy Pati & MarkHarrison,eds., *Health, Medicine and Empire: Perspectives on Colonial India*. New Delhi:Orient Longman. pp. 1-24/36.
- मल, गुणाकर. (२००५). भारतीयईतहासमेंर वज्ञान. र्िल्ली:यात्रीप्रकाशन. (अध्याय:र वज्ञानऔरसमाज; पष्ठ ११-29, ज्योर् तषकाआरम्भऔररवकास; पष्ठ ४१-49, वैर् िकर्गणतकीसमीक्षा; पष्ठ ५0--66).
- Bernal, J D. (1969). *Science in History Vol, I: The Emergence of Science.* Middlesex: Penguin Books, pp. 27-57.
- Raj, Kapil. (2017). 'Thinking Without the Scientific Revolution: Global Interactions and the Construction of Knowledge'. *Journal of Early Modern History*, Vol. 21 (No.5), pp. 445-458.
- Habib, S Irfan and Raina, Dhruv. (2007). 'Introduction', in S Irfan Habib & Dhruv Raina.(Eds.). *Social History of Science in Colonial India*. Delhi: Oxford University Press.pp. XII-XL.
- (Revised version published as S Irfan Habib & Dhruv Raina, 'Introduction' in *Social History of Science in Colonial India*, New Delhi: Oxford University Press, 2007, pp. XII-XL.)
- Kumar, Deepak, *Science and the Raj*, OUP, 1998 (Introduction).

Unit-2: Students will understand the politics associated with appropriation of 'Scientific' heritage through the case study of the decimal and zero. It will also teach them about the politics of documentation and its importance during early modern times. **(Teaching Time: 4 weeks Approx.)**

- Nanda, Meera. (2016). 'Nothing that is: Zero's Fleeting Footsteps', in *Science in Saffron: Skeptical Essays on History of Science*. Delhi: Three Essays Collective. pp. 49-92.
- Grove, Richard. (1996). 'Indigenous Knowledge and the Significance of South-West India for Portuguese and Dutch Constructions of Tropical Nature'. *Modern Asian Studies*, Vol. 30 (No. 1), pp. 121-143.
- Joseph, George V., *A Passage to Infinity: Medieval Indian Mathematics from Kerala and Its Impact*, Sage Publication, 2009 (Introduction).

Unit-3: This unit will make an attempt to convey that science and technology need to be carefully historicized in the context of the prevalent political-economy. It will also problematise associated questions of ethics in science. **(Teaching Time: 3 weeks Approx.)**

● Mazumdar, Pradip. (2017). 'The Generic manoeuvre'. *Economic and Political Weekly*, Vol. LII (No.35), pp. 22-26.
● Nagaraj, Vijay K. and Raman, Nithya V. (2007). 'Are we prepared for another Bhopal?' in Mahesh Rangarajan, ed., *Environmental Issues in India: A Reader*. Delhi: Pearson. pp.
● 530-43. **(Also available in Hindi)**
● Banerjee, Madhulika, *Power, Knowledge, Medicine: Ayurvedic Pharmaceuticals at Home and in the World*', Hyderabad: Orient Blackswan, 2009 (Introduction).

Unit-5: This unit will highlight the role of science in 'nation-making'. It will also examine the role of a few scientists and women; associated institutions and their contribution in nation making. **(Teaching Time: 3 weeks Approx.)**

● Kosambi, D. D. (2016). 'Atomic Energy for India', in Ram Ramaswamy, ed., *D.D.Kosambi:Adventures into the unknown*: Gurgaon: Three Essays Collective. pp. 59-70.
● Marshal, Eliot. (2007). 'Is the Friendly Atom Poised for a Comeback?' in MaheshRanga-rajan, ed., *Environmental Issues in India: A Reader*. Delhi: Pearson. pp.544-49. **(Also available in Hindi)**
● Banerjee, Somaditya. (2016). 'Meghnad Shaha: Physicist and Nationalists'. *Physics Today*, Vol.69 (No.8), pp. 39-44.
● Wadia, Spenta R. (2009). 'Homi Jehangir Bhaba and the Tata Institute of Fundamental Research'. *Current Science*, Vol.96 (No.5), pp. 725-33.
● Krishna, V.V. (2013). 'Science, Technology and Innovation Policy 2013: High on Goals, Low on Commitment'. *Economic and Political Weekly*, Vol. 48 (No.16), pp. 15-19.
● Damodaran, Vinita. (2013). 'Gender, Race and Science in Twentieth-Century India: E.K. Janaki Ammal and the History of Science.' *History of Science*, Vol. 51 (No. 3), pp. 283- 307.
● Chattopadhyay, Anjana. (2018). 'Janaki Ammal, Edavaleth Kakkat (1897-1984)', in *Women Scientists in India: Lives, Struggles and Achievements*, New Delhi: National BookTrust, pp. 170-172.

Suggested Readings:

● Bhattacharya, Nandini. (2018). Interrogating the Hegemony of Biomedicine. *Economic and Political Weekly*, Vol. LIII (No.9), pp. 45-47.
● Chaterjee, Santimay. (1994). 'Meghnad Shaha: The Scientist and the Institution maker.' *Indian Journal of History of Science*, Vol.29 (No.1), pp. 99-110.
● Habib, Irfan. (2008). *Technology in Medieval India. c. 650-1750*. New Delhi: Tulika (Also available in Hindi).
● Qaisar, A J. (1982). *Indian Response to European Technology and Culture AD 1498*-1707, Bombay: Oxford University Press.
● Rahman, Abdur. (1984). *Science and Technology in Indian Culture: A HistoricalPer-spective*. Delhi: National Institute of Science, Technology & Development Studies

Science, Technology and Innovation Policy 2013, Government of India, India. (http://www.dst.gov.in/sites/default/files/STI%20Policy%202013-English.pdf) Available in Hindi Also :(http://www.dst.gov.in/sites/default/files/STI%20Policy%202013%20Hindi.pdf).

- Zimmerman, F. (1987). 'Monsoon in Traditional Culture', in Jay S. Fein and Pamela L. Stephens, eds., *Monsoon*. New York, Chichester, Brisbane, Toronto, Singapore: John Willey & Sons. pp. 51-76.

FILMS:

- *The Fugitive* A movie featuring Harrison Ford.
- *The Effects of the Atomic Bomb on Hiroshima and Nagasaki* (https://www.youtube.com/watch?v=3wxWNAM8Cso and https://www.youtube.com/watch?v=n7fT6Mur6Gg&list=PLD7F1A06CE1780AD5&index=5)

Teaching Learning Process:

Classroom teaching supported by group discussions or group presentations on specific themes/readings. Given that the students enrolled in the course are from a non-history background, adequate emphasis shall be given during the lectures to what is broadly meant by the historical approach and the importance of historicising various macro and micro-level developments/phe-nomena. Interactive sessions through group discussions or group presentations shall be used to enable un-learning of prevailing misconceptions about historical developments and time periods, as well as to facilitate revision of issues outlined in the lectures. Supporting audio-visual aids like documentaries and power point presentations, and an appropriate field-visit will be used where necessary.

Assessment Methods:

Students will be regularly assessed for their grasp on debates and discussions covered in class. Two written submissions; one of which could be a short project, will be used for final grading of the students. Students will be assessed on their ability to explain important historical trends and there by engage with the historical approach.

Internal Assessment: 25 Marks

Written Exam: 75 Marks To-

tal: 100 Marks

Keywords: Scientific Revolution, Colonialism, Hegemony, Predictions, Cross-cultural, Documentation

हिंदी का वैश्विक परिदृश्य

Generic Elective – (GE) /Language

Core Course - (GE) Credits : 4

सेमेस्टर 1

Course Objective (2-3)

- विद्यार्थी की भाषाई दक्षता और भाषा.कौशल को बढ़ावा देना
- भाषा प्रयोगशाला के माध्यम से प्रायोगिक कार्य को प्रोत्साहन
- विश्व की प्रमुख भाषाओं से विद्यार्थी का परिचय कराना
- वैश्विक स्तर पर हिन्दी भाषा की स्थिति और स्वरूप से विद्यार्थी का परिचय कराना
- हिन्दी प्रयोग से जुड़े फील्ड वर्क आधारित विश्लेषण
- विद्यार्थी के लेखन कौशल को बढ़ावा देना

Course learning outcomes

भाषा के शुद्ध उच्चारण, रचनात्मक लेखन, औपचारिक लेखन तथा तकनीकी शब्दों से विद्यार्थी अवगत हो सकेगा

स्नातक स्तर के विद्यार्थी को भाषायी सम्प्रेषण की समझ और संभाषण से सम्बन्धित विभिन्न पक्षों से अवगत हो सकेगा

वार्तालाप भाषण संवाद समूह चर्चा, अनुवाद के माध्यम से विद्यार्थी में अभिव्यक्ति कौशल का विकास हो सकेगा

समूह चर्चा, परियोजना के द्वारा विद्यार्थी में आलोचनात्मक क्षमता का विकास हो सकेगा

Unit 1

- विश्व में बोली जाने वाली किन्हीं दो भाषाओं का संक्षिप्त परिचय ;मंदारिन, अंग्रेज़ी, हिन्दी, स्पेनिश, रूसीए जापानी
- वैश्विक स्तर पर हिन्दी का स्थान (संक्षिप्त परिचय)
- हिन्दी का अंतरराष्ट्रीय स्वरूप (मॉरीशस, सूरीनाम, फीजी में हिन्दी)

Unit 2

- संयुक्त राष्ट्र संघ में हिन्दी का प्रयोग
- हिन्दी के विकास में विश्व हिन्दी सम्मलेन की भूमिका
- विश्व हिन्दी दिवस (संक्षिप्त परिचय)

Unit 3

- किसी एक विश्व हिन्दी सम्मलेन की रिपोर्ट.प्रस्तुति
- संयुक्त राष्ट्र संघ में हिन्दी के प्रयोग पर अनुच्छेद लेखन
- विश्व हिन्दी दिवस के मौके पर विज्ञापन के प्रारूप का निर्माण

Unit 4

- विदेशों में हिन्दी भाषा की प्रमुख लोकप्रिय पुस्तकों की सूची बनाना
- विदेशों में हिन्दी की प्रमुख लोकप्रिय फ़िल्में, गीत, संकलन
- वैश्विक स्तर पर हिन्दी की संभावनाएँ, समूह चर्चा पर रिपोर्ट प्रस्तुति

References

- हिन्दी भाषा की पहचान से प्रतिष्ठा तक (डॉ. हनुमानप्रसाद शुक्ल) लोकभारती प्रकाशन संस्करण 1994
- हिन्दी भाषा (हरदेव बाहरी) अभिव्यक्ति प्रकाशन, दिल्ली
- प्रयोजनमूलक हिन्दी (सिद्धांत और प्रयोग) दंगल झालटे, वाणी प्रकाशन, दिल्ली संस्करण 2010
- मानक हिन्दी का स्वरूप (भोलानाथ तिवारी) प्रभात प्रकाशन, दिल्ली संस्करण 2008
- रचनात्मक लेखन (सं रमेश गौतम) भारतीय ज्ञानपीठ, दिल्ली संस्करण 2016
  भारतीय भाषा चिंतन की पीठिका (विद्यानिवास मिश्र)बिहार राष्ट्रभाषा परिषद् संस्करण 1978

Teaching learning process

कक्षा व्याख्यान

1 से 3 सप्ताह – इकाई – 1
4 से 6 सप्ताह – इकाई – 2
7 से 9 सप्ताह – इकाई – 3
10 से 12 सप्ताह – इकाई – 4
13 से 14 सप्ताह सामूहिक चर्चा, विशेष व्याख्यान एंव आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Asesment Methods

टेस्ट, असाइनमेंट

Keywords
पारिभाषित शब्दावली

हिंदी सिनेमा और उसका अध्ययन

Generic Elective – (GE) /Language

Core Course - (GE) Credits : 4

सेमेस्टर 1

Course Objective (2-3)

हिंदी सिनेमा जगत की जानकारी
सिनेमा के निर्माण, प्रसारण और उपभोग से संबंधित आलोचनात्मक चिंतन की समझ

Course learning outcomes

हिंदी सिनेमा, समाज और संस्कृति की समझ
सिनेमा निर्माण, प्रसार कैमरे की भूमिका आदि की व्यावहारिक समझ

Unit 1

सिनेमा : सामान्य परिचय

1. जनमाध्यम के रूप में सिनेमा,
2. सिनेमा की इतिहास यात्रा
3. सिनेमा के प्रकार – व्यावसायिक सिनेमा, समानान्तर सिनेमा, क्षेत्रीय सिनेमा।

Unit 2

सिनेमा अध्ययन

1. सिनेमा अध्ययन की दृष्टियाँ
2. हिंदी सिनेमा का राष्ट्रीय बाज़ार
3. हिंदी सिनेमा का अंतरराष्ट्रीय बाज़ार

Unit 3

सिनेमा अंतर्वस्तु और तकनीक

1. पटकथा, अभिनय, संवाद, संगीत और नृत्य
2. कैमेरा, लाइट, साउंड
3. सिनेमा और सेंसरबोर्ड

Unit 4

सिनेमा अध्ययन की दिशाएँ

1. सिनेमा समीक्षा के विविध पहलू

2. हिंदी की महत्वपूर्ण फिल्मों की समीक्षा का व्यावहारिक ज्ञान (अछूत कन्या, मदर इंडिया, काबुलीवाला, शोले, सद्गति, अमर अकबर एंथनी, पीकू, मधुमती)
3. सिनेमा के दृश्य, तकनीक, कहानी, स्पेशल इफेक्ट, आइटम गीत, गीत, संगीत आदि की समीक्षा

References

1. फिल्म निर्देशन – कुलदीप सिन्हा
2. हिंदी सिनेमा का इतिहास – मनमोहन चड्ढा
3. नया सिनेमा – ब्रजेश्वर मदान
4. भारतीय सिने सिद्धांत – अनुपम ओझा
5. सिनेमा : कल, आज, कल – विनोद भारद्वाज
6. हिंदी सिनेमा के सौ वर्ष – प्रकाशन विभाग
7. हिंदी सिनेमा का समाजशास्त्र, जवरीमल पारख

Additional Resources:

विश्व सिनेमा में स्त्री विजय शर्मा

Teaching learning process

व्याख्यान, सामूहिक चर्चा, फिल्म प्रस्तुति और विश्लेषण

1 से 3 सप्ताह – इकाई – 1
4 से 6 सप्ताह – इकाई – 2
7 से 9 सप्ताह – इकाई – 3
10 से 12 सप्ताह – इकाई – 4
13 से 14 सप्ताह सामूहिक चर्चा, विशेष व्याख्यान एंव आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Asessment Methods

टेस्ट, असाइनमेंट

Keywords

सिनेमा, हिंदी सिनेमा, फिल्म समीक्षा, फिल्म तकनीक, सेंसर बोर्ड

हिंदी में व्यावहारिक अनुवाद

Generic Elective – (GE) /Language

Core Course - (GE) Credits : 4

सेमेस्टर 1

Course Objective (2-3)

अनुवाद की समझ विकसित करना
व्यावहारिक और क्षेत्र विशेष में अनुवाद गतिविधियों का परिचय देना

Course learning outcomes

अनुवाद की रोजगारपरक क्षमता विकसित होगी
क्षेत्र विशेष की माँग से परिचित होगें

Unit 1

भारत का भाषायी परिदृश्य और अनुवाद का महत्व
अनुवाद का स्वरूप
अनुवाद प्रक्रिया

Unit 2

प्रयुक्ति की आवधारणा
अनुवाद और विविध प्रयुक्ति क्षेत्र
अनुवाद की व्यावसायिक संभावनाएँ

Unit 3

अनुवाद व्यवहार –1 (अंग्रेजी से हिंदी तथा हिंदी से अंग्रेजी)
सर्जनात्मक साहित्य
ज्ञान–विज्ञान और तकनीकी साहित्य

Unit 4

अनुवाद व्यवहार 2 (अंग्रेजी से हिंदी तथा हिंदी से अंग्रेजी)
जनसंचार
प्रशासनिक अनुवाद और बैकिंग अनुवाद

References

अनुवाद विज्ञान : सिद्धांत और अनुप्रयोग – डॉ. नगेंद्र
अनुवाद के सिद्धांत – रामालु रेड्डी
अनुवाद (व्यवहार से सिद्धांत की ओर) – हेमचन्द्र पाण्डेय
कार्यालय प्रदीपिका – हरि बाबू कंसल

Additional Resources:

कम्प्यूटर के भाषिक अनुप्रयोग – विजय कुमार मल्होत्रा
सृजनात्मक साहित्य का अनुवाद – सुरेश सिंहल
काव्यानुवाद : सिद्धांत और समस्याएँ – नवीन चंद्र सहगल
कोश विशेषांक, भारतीय अनुवाद परिषद, नई दिल्ली – सं विमलेश कांति वर्मा
अनुवाद और तत्काल भाषांतरण – विमलेश कांति वर्मा
The theory and practice of Translation – Nida E.
Language, Structure & Translation – Nida E.
Routledge Encyclopedia of Translation – Baker, Mona
Translation Evaluation – House, Juliance
Machine Translation: Its Scope and Limits – Wilks, Vorick
Translation and Interpreting – Baker H.
Revising and Editing for Translators – Mossop B.
Introducing Translation Studies: Theories and applications – Munday J.
The Routledge Companion to Translation Studies – Munday J.
Comprehensive English – Hindi Dictionary – Raghubir
Oxford Hindi – English Dictonary – R.S. Mc Gregor
English- Hindi Dictionary – Hardeo Bahari

Teaching learning process

1 से 3 सप्ताह – इकाई – 1
4 से 6 सप्ताह – इकाई – 2
7 से 9 सप्ताह – इकाई – 3
10 से 12 सप्ताह – इकाई – 4
13 से 14 सप्ताह सामूहिक चर्चा, विशेष व्याख्यान एंव आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Asessment Methods

टेस्ट, असाइनमेंट

Keywords

पारिभाषिक शब्दावली

2. Nicols G., 2009 Sedimentology and Stratigraphy 2nd Edition, Wiley-Blackwell
3. Brookfield, M.E., 2016 Principles of stratigraphy, Wiley India

GE-1 (4) One from GE Pool:

12.4.1 Course code: GE1, Course title: Essentials of Geology (L4, P0)

Objectives
1. Interactive and interdisciplinary nature of geology
2. Interplanetary scope of geology
3. Introduction to atmosphere, hydrosphere, biosphere and lithosphere

Learning Outcomes
1. Earth, its origin and concept of geological time
2. Formation of planets and solar system
3. Composition of inner as well as surficial components of planet earth
4. Major geomorphic features, and compositions of various parts of earth and major earth processes
5. Earth Resources

Unit 1
Introduction to geology, scope, sub-disciplines and relationship with other branches of sciences
Solar system and its origin: Terrestrial and Jovian planets; Nebular hypothesis.
Earth's size, shape, mass, density, rotational and evolutional parameters
Earth in comparison to other bodies in the solar system

Unit 2
Internal constitution of the earth - core, mantle and crust (Chemical and mechanical differentiation)
Convections in the earth's core and production of magnetic field;
Concept of Plate Tectonics as a unifying theory

Unit 3
Origin and composition of hydrosphere and atmosphere;
Origin of biosphere;
Origin of oceans, continents and mountains.

Unit 4
Geological Time Scale
Radioactivity dating and its application in determining the age of the rocks.
Earth Resources and their sustainable use

Suggested readings:
1. Holmes, A. (1992). Principles of Physical Geology, 1992, Chapman and Hall.
2. Emiliani, C. (1992). Planet Earth, Cosmology, Geology and the Evolution of Life and

Environment, Cambridge University Press.
3. Gross, M.G. (1977). Oceanography: A view of the Earth, Prentice Hall.
4. Grotzinger, J.P. & Jordan, T.H. (2020) Understanding Earth. 8th Edition, W.H. Freeman and Company

UNIVERSITY OF DELHI

DEPARTMENT : HINDI

COURSE NAME: B.Com Program

(SEMESTER -I)

Based on
Undergraduate Curriculum Framework 2022 (UGCF)
(Effective from Academic Year 2022-23)

General Electives

Course Title	Nature of the Course	Total Credits	Components			Eligibility Criteria/ Prerequisite	**Contents of the course and reference is in**
			Lecture	Tutorial	Practical		
हिंदी क हिंदी भाषा और साहित्य का उद्भव और विकास	GE	4	3	1	0		Annexure-I
हिंदी ख हिंदी भाषा और साहित्य का उद्भव और विकास	GE	4	3	1	0		Annexure-III
हिंदी ग हिंदी भाषा और साहित्य का उद्भव और विकास	GE	4	3	1	0		Annexure-III

(Generic Elective / Language)

सेमेस्टर–I

'हिंदी–क' (उन विद्यार्थियों के लिए जिन्होंने 12वीं कक्षा तक हिंदी पढ़ी है।)

हिंदी : भाषा और साहित्य

Course Objective (2-3)

हिंदी भाषा और साहित्य की सामान्य जानकारी विकसित करना।

राष्ट्रभाषा, राजभाषा और संपर्क भाषा के रूप में हिंदी की स्थिति का परिचय देना।

विशिष्ट कविताओं के अध्ययन–विश्लेषण के माध्यम से कविता–संबंधी समझ विकसित करना।

Course Learning Outcomes

हिंदी साहित्य और भाषा के विकास की स्पष्ट समझ विकसित होगी।

आधुनिक आवश्यकताओं के अनुरूप राष्ट्रभाषा, राजभाषा और संपर्कभाषा की जानकारी प्राप्त होगी।

इकाई–1

(क) हिंदी भाषा का उद्भव एवं विकास

(ख) राष्ट्रभाषा, राजभाषा और संपर्क–भाषा के रूप में हिंदी

इकाई–2

हिंदी साहित्य का इतिहास

(क) हिंदी साहित्य का इतिहास (आदिकाल, मध्यकाल) सामान्य परिचय

(ख) हिंदी साहित्य का इतिहास (आधुनिक काल) सामान्य परिचय

इकाई–3

(क) कबीर – कबीर ग्रंथावली, सं. श्यामसुंदर दास, नागरीप्रचारिणी सभा, वाराणसी 17वां संस्करण, सं. 2049 वि.

साखी : रस कौ अंग – 1, 2, 3, 4, 5, 6, 7 और 8

(ख) भूषण – भूषण ग्रंथावली, सं. आचार्य विश्वनाथ प्रसाद मिश्र, वाणी प्रकाशन, दिल्ली, 1998; कवित्त संख्या 409, 411, 412

(ग) बिहारी – बिहारी रत्नाकर, सं. जगन्नाथ दास रत्नाकर बी.ए., प्रकाशन संस्थान, नई दिल्ली, सं. 2006, दोहा 1,10, 13, 32

इकाई–4

– आधुनिक हिंदी कविता

– माखनलाल चतुर्वेदी : बेटी की विदाई

– जयशंकर प्रसाद : हिमाद्रि तुंग शृंग से

– नागार्जुन : बादल को घिरते देखा है

References

1. रामचंद्र शुक्ल : हिंदी साहित्य का इतिहास
2. हजारीप्रसाद द्विवेदी : हिंदी साहित्य की भूमिका
3. सं. डॉ. नगेंद्र : हिंदी साहित्य का इतिहास
4. रामस्वरूप चतुर्वेदी : हिंदी साहित्य और संवेदना का विकास
5. डॉ. रसाल सिंह : हिंदी साहित्य के इतिहास पर कुछ नोट्स

Teaching Learning Process

व्याख्यान, सामूहिक चर्चा, वीडियो आदि

1 से 3 सप्ताह : इकाई–1

4 से 6 सप्ताह : इकाई–2

7 से 9 सप्ताह : इकाई–3

10 से 12 सप्ताह : इकाई–4

13 से 14 सप्ताह : सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट और असाइनमेंट

डॉ. श्यौराज सिंह / Dr. Shyoraj SINGH
वरिष्ठ आचार्य एवं अध्यक्ष, हिन्दी विभाग
Senior Professor and Head, Deptt. of Hindi
दिल्ली विश्वविद्यालय / University of Delhi
दिल्ली–110007 / Delhi-110007

(Generic Elective / Language)

सेमेस्टर–I

'हिंदी–'ख' (उन विद्यार्थियों के लिए जिन्होंने 10वीं कक्षा तक हिंदी पढ़ी है।)

हिंदी : भाषा और साहित्य

Course Objective (2-3)

हिंदी भाषा और साहित्य की सामान्य जानकारी विकसित करना।

विशिष्ट कविताओं के अध्ययन–विश्लेषण के माध्यम से कविता संबंधी समझ विकसित करना।

Course Learning Outcomes

हिंदी साहित्य और भाषा के विकास की स्पष्ट समझ विकसित होगी।

विशिष्ट कविताओं के अध्ययन से साहित्य की समझ विकसित होगी।

इकाई–1

हिंदी भाषा और साहित्य

हिंदी भाषा का उद्भव और विकास

हिंदी की प्रमुख बोलियों का परिचय

हिंदी साहित्य का इतिहास : संक्षिप्त परिचय (आदिकाल, मध्यकाल)

हिंदी साहित्य का इतिहास : संक्षिप्त परिचय (आधुनिक काल)

इकाई–2

भक्तिकालीन कविता :

(क) कबीर – कबीर ग्रंथावली, सं. श्यामसुंदर दास, नागरीप्रचारिणी सभा, वाराणसी 17वां संस्करण, सं. 2049 वि.

हिंदी - विभाग
दिल्ली विश्वविद्यालय

साखी : गुरुदेव कौ अंग – 24, 25, 26, 27, 28, 33, 34

(ख) तुलसी : 'रामचरितमानस' गीता प्रेस, गोरखपुर से 'केवट प्रसंग'

इकाई–3

– मैथिलीशरण गुप्त : नर हो न निराश करो .....

– सूर्यकांत त्रिपाठी 'निराला' – तोड़ती पत्थर

– केदारनाथ अग्रवाल : धूप

इकाई–4

आधुनिक कविता

– सुभद्रा कुमार चौहान : बालिका का परिचय

– निराला : तोड़ती पत्थर

References

1. रामचंद्र शुक्ल : हिंदी साहित्य का इतिहास
2. हजारीप्रसाद द्विवेदी : हिंदी साहित्य की भूमिका
3. सं. डॉ. नगेंद्र : हिंदी साहित्य का इतिहास
4. रामस्वरूप चतुर्वेदी : हिंदी साहित्य और संवेदना का विकास
5. आ. विश्वनाथ प्रसाद मिश्र : भूषण ग्रंथावली
6. डॉ. रसाल सिंह : हिंदी साहित्य के इतिहास पर कुछ नोट्स

Teaching Learning Process

व्याख्यान, सामूहिक चर्चा

1 से 3 सप्ताह : इकाई–1

4 से 6 सप्ताह : इकाई–2

7 से 9 सप्ताह : इकाई–3

10 से 12 सप्ताह : इकाई–4

13 से 14 सप्ताह : सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट और असाइनमेंट

डॉ. श्यौराज सिंह / [illegible] VEERAJ SINGH
वरिष्ठ आचार्य एवं अध्यक्ष
Senior Professor and Head, Deptt. of Hindi
दिल्ली विश्वविद्यालय / University of Delhi
दिल्ली–110007 / Delhi-110007

(Generic Elective / Language)

सेमेस्टर–I

'हिंदी–'ग' (उन विद्यार्थियों के लिए जिन्होंने 8वीं कक्षा तक हिंदी पढ़ी है।)

हिंदी : भाषा और साहित्य

Course Objective (2-3)

हिंदी भाषा और साहित्य की सामान्य जानकारी विकसित करना।

विशिष्ट कविताओं के अध्ययन–विश्लेषण के माध्यम से कविता संबंधी समझ विकसित करना।

Course Learning Outcomes

हिंदी साहित्य और भाषा के विकास की स्पष्ट समझ विकसित होगी।

विशिष्ट कविताओं के अध्ययन से साहित्य की समझ विकसित होगी।

इकाई–1

हिंदी भाषा और साहित्य

(क) हिंदी भाषा का उद्भव एवं विकास

(ख) हिंदी का भौगोलिक विस्तार

(ग) हिंदी कविता का विकास (आदिकाल, मध्यकाल) : सामान्य विशेषताएँ

(घ) हिंदी कविता का विकास (आधुनिक काल) : सामान्य विशेषताएँ

इकाई–2

भक्तिकालीन हिंदी कविता :

कबीर : कबीर ग्रंथावली, सं. श्यामसुंदर दास, नागरीप्रचारिणी सभा, वाराणसी 17वां संस्करण, सं. 2049 वि.

साखी : गुरुदेव कौ अंग – 19, 20, 21, 22, 23

सूरदास :

– मैया मैं नहिं माखन खायौ .....

– उधो मन न भए दस–बीस .....

इकाई–3

रीतिकालीन हिंदी कविता

(क) बिहारी :

– मेरी भव बाधा हरौ .....

– कनक कनक ते सौं गुनी .....

– कहत नटत रीझत खिजत .....

(ख) घनानंद :

– अति सूधो सनेह को मारग .....

– रावरे रूप की रीति अनूप .....

इकाई–4

आधुनिक हिंदी कविता

– सुमित्रानंदन पंत : आह! धरती कितना देती है .....

– सर्वेश्वर दयाल सक्सेना : लीक पर वे चलें .....

References

1. कबीर : हजारीप्रसाद द्विवेदी
2. तुलसी काव्य–मीमांसा : उदयभानु सिंह

3. हिंदी साहित्य का सरल इतिहास : विश्वनाथ त्रिपाठी
4. बिहारी की वाग्विभूति : विश्वनाथ प्रसाद मिश्र
5. हिंदी साहित्य का इतिहास : रामचंद्र शुक्ल
6. डॉ. रसाल सिंह : हिंदी साहित्य के इतिहास पर कुछ नोट्स

Teaching Learning Process

सीखने की इस प्रक्रिया में हिंदी साहित्य और हिंदी कविता को मजबूती प्रदान करना है। कालक्रम के विद्यार्थी युगबोध को ठीक से जान सकेंगे। छात्र कविता के माध्यम से उसमें निहित मानवतावादी दृष्टिकोण को बेहतर तरीके से जान सकेंगे। हिंदी भाषा आज तेजी से वैश्वीकृत हो रही है। ऐसे में कविता की भूमिका और भी अधिक महत्वपूर्ण हो जाती है। साहित्य के आरंभ से ही कविता ने समय और समाज को प्रभावित किया है और मानवीय आचरण को संतुलित करने में महत्वपूर्ण भूमिका निभाई है। अतः शिक्षण में हिंदी कविता छात्रों के दृष्टिकोण को और भी अधिक परिपक्व करेगी। प्रस्तुत पाठ्यक्रम को निम्नांकित सप्ताहों में विभाजित किया जा सकता है :

1 से 3 सप्ताह : इकाई–1

4 से 6 सप्ताह : इकाई–2

7 से 9 सप्ताह : इकाई–3

10 से 12 सप्ताह : इकाई–4

13 से 14 सप्ताह : सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट और असाइनमेंट

Assessment Methods

टेस्ट और असाइनमेंट

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Annexure-4

Business Organisation
BCH: GE- 1.1

Objective: The course aims to familiarize the students with the forms of business organisation and contemporary issues.

Learning Outcomes: After completion of the course, learners will be able to:

1. examine the dynamics of the most suitable form of business organisation in different situations.
2. evaluate the various elements affecting the business environment.
3. analyse business models for different organisations.
4. record and report emerging issues and challenges of business organisations.
5. evaluate changes in the working pattern of modern organisations

Course Contents:

Unit	Unit wise weightage of marks (in %)	C&K*	A&A**
Unit 1: Introduction	15	√	√
Unit 2: Business Enterprises	25	√	√
Unit 3: Business Environment	20	√	√
Unit 4: Entrepreneurship: Founding the Business	25	√	√
Unit 5: Contemporary Issues of Business Organisations	15	√	√

*C&K- Comprehension & Knowledge
**A&A – Analysis & Application

Unit 1: Introduction

Business – Concept, nature and scope, business as a system, business objectives, business and environment interface, distinction between business, commerce and trade, Business ethics, social responsibilities of Business

Unit 2: Business Enterprises

Forms of Business Organisation: Sole Proprietorship, Partnership firm, Joint Stock Company, One Person Company, Cooperative society; Limited Liability Partnership; Multinational Corporations; Choice of Form of Organisation; Business Combination: Need and Objectives,

Forms: Mergers, Takeovers and Acquisitions.

Unit 3: Business Environment

Meaning and significance of Business environment, Internal and external environment, Dimensions of Business Environment; Uncertainty and business; Environmental Analysis and Diagnosis, Environment scanning techniques: SWOT and ETOP.

Unit 4: Entrepreneurship: Founding the Business

Entrepreneur-Entrepreneurship-Enterprise; entrepreneurial ideas and opportunities in the contemporary business environment; Process of entrepreneurship; Forms of entrepreneurship; Skill India, Start-up India, Make in India, Globalisation.

Unit 5: Contemporary Issues of Business Organisations

Emerging Issues and Challenges; Innovation in Organisational Design; Learning Organisations, Workforce Diversity, Franchising, Outsourcing, and E-commerce; Government and business interface; Sustainability; Digitalisation and Technological innovations.

Practical Exercises:

The learners are required to

1. complete the exercise wherein they are given different situations and scenarios to start their own business (in terms of capital, liability, the scale of operations, etc.) and are asked to select the most suitable form of business and justify the same highlighting the advantages and disadvantages of their choice.
2. identify various elements affecting the business environment and conduct a SWOT analysis for the company identified.
3. visit different enterprises and present a report on business models followed by them through a comparative analysis.
4. record and report their observations regarding the emerging issues and challenges of business organisations.
5. identify changes in the working pattern of modern organisations.

Suggested Readings:

- Basu, C. (2017). Business Organisation and Management. McGraw Hill Education.
- Chhabra, T. N. (2019). Business Organisation and Management. Sun India Publications. New Delhi.
- Drucker, P. F. (1954). The Practice of Management. Newyork: Harper & Row.
- Kaul, V. K. (2012). Business Organisation Management. Pearson Education.
- Koontz, H., & Weihrich, H. (2012). Essentials of Management: An International and Leadership Perspective. Paperback.
- Singh, B. P., & Singh, A. K. (2002). Essentials of Management. New Delhi. Excel Books Pvt. Ltd.

- Vasishth, N., & Rajput, N. (2019). Business Organisation & Management. Kitab Mahal. Delhi.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.

Annexure- 5

Finance for Everyone
BCH: GE- 1.2

Objective: The course aims to offer an integrated approach to the understanding of concepts and applications of financial planning.

Learning Outcomes: After completion of the course, learners will be able to:
1. explain the importance of financial literacy and the institutions providing financial services.
2. prepare a financial plan, and budget and manage personal finances.
3. avail and manage services offered by banks.
4. avail and manage services offered by post offices.
5. plan for life insurance and property insurance.
6. choose instruments for investment in shares.

Course Contents:

Unit	Unit wise weightage of marks (in %)	C&K*	A&A**
Unit 1: Introduction, Financial Planning and Budgeting	20	√	√
Unit 2: Banking Services	20	√	√
Unit 3: Financial Services from India Post Office	20	√	√
Unit 4: Insurance Services	20	√	√
Unit 5: Stock Markets – Some Basic Concepts	20	√	√

*C&K- Comprehension & Knowledge
**A&A – Analysis & Application

Unit 1: Introduction, Financial Planning and Budgeting
Meaning, importance and scope of financial literacy; Prerequisites of financial literacy – level of education, numerical and communication ability; Various financial institutions – banks, insurance companies, post offices, mobile app-based services. Need of availing of financial services from banks, insurance companies and postal services. Concept of economic wants and means for satisfying these needs; Balancing between economic wants and resources; Meaning, importance and need for financial planning; Personal budget, family budget, business budget and

national budget; Procedure for financial planning and preparing a budget; Budget surplus and budget deficit, Avenues for savings from surplus, Sources for meeting the deficit.

Unit 2: Banking Services

Types of banks; Banking products and services – Various services offered by banks; Types of bank deposit accounts – savings bank account, term deposit, current account, recurring deposit; pan card, address proof, KYC norm; Various types of loans – education loan, consumer durable loan, vehicle loan, housing loan, short term, medium term, long term, microfinance, bank overdraft, cash credit, mortgage, reverse mortgage, hypothecation, pledge, Agricultural and related interest rates offered by various nationalized banks; Cashless banking, e-banking, check counterfeit currency; CIBIL, ATM, net banking, RTGS, NEFT, IMPS, electronic clearance services (ECS), debit and credit card, app-based payment system, bank draft and pay order; banking complaints and ombudsman.

Unit 3: Financial Services from India Post Office

Post office savings schemes: savings bank, recurring deposit, term deposit, monthly income scheme, kisan vikas patra, NSC, PPF, senior citizen savings scheme , sukanya samriddhi yojana ; India post payments bank. money transfer: money order, e-money order. instant money order, collaboration with the western union financial services; mo videsh, international money transfer service, money gram international money transfer, Indian postal order.

Unit 4: Insurance Services

Life insurance policies: life insurance, term life insurance, endowment policies, pension policies, ULIP, health insurance plans, comparison of policies offered by various life insurance companies, comparison of policies offered by various health insurance companies. Property insurance policies. Post office life insurance schemes: postal life insurance and rural postal life insurance.

Unit 5: Stock Markets – Some Basic Concepts

Terms used in stock markets: SENSEX, NIFTY, primary markets, secondary markets, initial public offering(IPO), follow-on public offering (FPO), offer for sale (OFS), block deal, equity shares, preference shares, debentures, bonus shares, stock split, dividend, buyback, DEMAT account, trading account, delivery instruction slip (DI Slips), blue chips, defensive stocks, face value, market value, market capitalisation, pre-opening session, trading session, opening price, closing price, business days, bull, bear, bull market, bear market, risk, stop loss, derivatives, call option, put option, hedge, holding period; Tax on short term capital gains and long-term capital gains, Mutual Fund and its various schemes.

Practical Exercises:

The learners are required to

1. visit banks, post offices, and insurance companies to collect information and required documents related to the services offered by these institutions and to know the procedure for availing of these services.
2. carry out the comparative analysis of different types of life insurance policies.
3. carry out the comparative analysis of different types of health insurance policies.
4. prepare a personal and family budget for one/six/ twelve months on imaginary figures.

Suggested Readings:

- Avadhani, V. A. (2022). Investment Management. Himalaya Publishing House Pvt. Ltd., Mumbai.
- Batra, J. K. (2018). Accounting and Finance for Non-finance Managers, Sage Textbook
- Bhattacharya. (2018). Indian Financial System.Oxford University Press.
- Chandra, P. (2018). Investment Game: How to Win. Tata McGraw Hill Education, New Delhi.
- Kothari, R. (2010). Financial Services in India-Concept and Application. Sage Publications India Pvt. Ltd., New Delhi.
- Milling, B. E. (2001). The Basics of Finance: Financial Tools for Non-Financial Managers. Universe Company, Indiana,
- Mittra, S., Rai, S. K., Sahu, A. P., & Starn, H. J. (2020). Financial Planning. Sage Publications India Pvt. Ltd., New Delhi.
- Sofat, R. & Hiro, P. (3rd Edition). (2016). Basic Accounting. PHI learning
- Zokaityte, A. (2017). Financial Literacy Education. Palgrave Macmillan, London.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.

Assessment Method:

1. There shall be 2 credit hours for lectures.
2. Theory exam shall carry 100 marks (including Internal Assessment of 25 Marks). The theory exam will be for 3 hours.

Annexure- 6

Marketing for Beginners
BCH: GE- 1.3

Objective: The structure of this course is to provide a basic understanding of concepts, principles, tools and techniques of marketing and to provide knowledge about various developments in the marketing scenario in India.

Learning Outcomes: After completion of the course, learners will be able to:

1. evaluate the companies following societal marketing concepts and along with their social initiatives.
2. judge the segmentation of a product, service, event, or organisation of companies.
3. analyse the process of value creation through marketing decisions involving product, pricing and distribution.
4. compare the pricing strategies of various companies.
5. explain marketing decisions involving product promotion and acquire knowledge about the various developments in the marketing area.

Course Contents:

Unit	Unit Wise Weightage of Marks (in %)	C&K*	A & A**
Unit 1: Introduction to Marketing And Marketing Environment	20	√	√
Unit 2: Consumer Behaviour and Marketing Strategies	20	√	√
Unit 3: Product Decisions	20	√	√
Unit 4: Pricing Decisions and Distribution Decisions	20	√	√
Unit 5: Promotion Decisions and Developments in Marketing	20	√	√

Unit 1: Introduction to Marketing and Marketing Environment
Introduction to Marketing: Concept, Scope and Importance; Marketing Philosophies; Marketing Mix for goods and services.
Marketing Environment: Need for studying marketing environment; Micro environment- company, suppliers, marketing intermediaries, customers, competitors, publics; Macro environment- demographic, economic, natural technological, politico-legal and socio-cultural factors.

Unit 2: Consumer Behaviour and Marketing Strategies
Consumer Behaviour: Need for studying consumer Behaviour; Stages in consumer buying decision process, Factors influencing consumer's buying decisions.
Marketing Strategies: Market segmentation-concept and bases of segmenting consumer markets; Market Targeting; Product Positioning- concept and bases.

Unit 3: Product Decisions
Concept and classification; Product mix; Branding; Packaging; Labeling; Product support services; Product life cycle concept and marketing strategies.

Unit 4: Pricing Decisions and Distribution Decisions
Pricing Decisions: Objectives; Factors affecting the price of a product; Pricing strategies for new products- penetration pricing and skimming pricing.
Distribution Decisions: Channels of Distribution**:** types and functions; Wholesaling and retailing; factors affecting the channels of distribution; Logistics Decisions.

Unit 5: Promotion Decisions and Developments in Marketing
Promotion Decisions: Communication process; Importance of promotion; Promotion tools: advertising, personal selling, sales promotion, public relations, publicity and direct marketing
Developments in Marketing: Sustainable Marketing; Rural marketing; Social marketing; Digital marketing – an overview.

Practical Exercises:

The learners are required to

1. select the examples of companies who are following societal marketing concepts and discuss their social initiatives.
2. suggest the suitable bases for segmentation of a product, service, event, or organisation of your choice.
3. list out the companies whose product has reached the maturity stage and explain the marketing strategies adopted by them.
4. identify the companies following skimming and penetration pricing policy.
5. analyse the rural marketing strategies of a business organisation.

Suggested Readings

- Baines, P. et al. (2021). Fundamentals of Marketing.Oxford University Press.
- Etzel, M. J., Walker, B. J., Stanton, W. J. & Pandit, A. (2010). Marketing. Mc Graw Hill.

- Kapoor, N. (2022). Principles of Marketing, 2nd ed. PHI learning
- Kotler, P., Armstrong, G., & Agnihotri, P. (2018). Principles of Marketing. Pearson Education. Indian edition.
- Kotler, P., Chernev, A., & Keller, K. L. (2022). Marketing Management. United Kingdom: Pearson Education.
- Levy, M., & Grewal, D. (2022). Marketing. United States: McGraw-Hill Education.
- Masterson, R. (2022). Marketing, 5ed., Sage Textbook
- Ramaswamy, N. (2018). Marketing Management, Sage Textbook
- Sharma, K. & Aggarwal S. (2021). Principles of Marketing. Taxmann Publications.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.

Annexure- 7

Accounting for Everyone
BCH: GE- 1.4

Objective: The course aims to help learners coming from non-commerce backgrounds acquire basic knowledge of financial accounting and to impart preliminary skills for recording various kinds of financial transactions and preparing financial statements.

Learning Outcomes: After completion of the course, learners will be able to:

1. Analyze various terms used in accounting;
2. Make accounting entries and prepare cash books and other accounts necessary while running a business;
3. Prepare profit and loss account and balance sheet;
4. Prepare accounts based on accounting software;
5. Analyze information from the company's annual report.

Unit	Unit wise Weightage of Marks (in %)	C&K*	A&A**
Unit 1: Introduction to Accounting and Accounting Principles	15	√	√
Unit 2: Recording of transactions	20	√	√
Unit 3: Preparation of Accounts and Depreciation Accounting	25	√	√
Unit 4: Preparation of Financial Statement	25	√	√
Unit 5: Accounts from Incomplete Records	15	√	√

*C&K- Comprehension & Knowledge

**A&A – Analysis & Application

Unit 1: Introduction to Accounting and Accounting Principles
Accounting - Meaning, Importance, Need, objectives, advantages and limitations. Accounting as an information system, user of accounting information, sources of accounting information.
Some Basic Accounting Terms –Transactions, Accounts, Assets, Liabilities, Capital, Drawings, Expenditure and Expense, Income, Revenue, Gain, Profit, Surplus, Loss, Deficit.
Accounting Principles Basis of Accounting – Cash, Accrual and Hybrid. Difference between Double Entry system and Single entry system (accounting for incomplete records).

Unit 2: Recording of transactions
Identification of transactions and events for recording, Classifications of accounts (Traditional): Personal Account, Real Account and Nominal Account, Classifications of accounts (Modern): Assets, Liabilities, Capital, Income and expenses. Accounting Equation, Rules of debit and credit. Basis of recording – vouchers, Journalising the transactions.

Unit 3: Preparation of Accounts and Depreciation Accounting
Preparation of Ledger, Cash Book including bank transactions and depreciation accounting: concept, features, causes, methods (SLM and WDV), charging to assets account.

Unit 4: Preparation of Financial Statement
Trial Balance; Concept of Revenue and Capital expenditure; Preparation of Trading and Profit & Loss Account and Balance Sheet for a sole proprietor with basic adjustments.

Unit 5: Accounts from Incomplete Records
Meaning, features, reasons and limitations of accounting from incomplete records. Determining profit and loss using the Statement of affairs method.

Practical Exercises:

1. Download annual reports of business Organisations from the websites and go through the contents of the annual report and present the salient features of the annual report using some ratios and content analysis including textual analysis.

2. Prepare a bank reconciliation statement from the individual passbooks.

3. Prepare Trading and Profit & Loss Account, Balance Sheet, and Cash Flow Statement collecting necessary data from small business firms.

4. Prepare financial statements using appropriate software.

Suggested Readings:

- Batra, J. K. (2018) Accounting and Finance for Non-finance Managers, Sage Textbook
- Goyal, B. K., & Tiwari, H. N. (2021). Financial Accounting. Taxmann Publication, New Delhi.
- Gupta, R. L., & Radhaswamy, M. (2014). Financial Accounting. S. Chand Publishing, New Delhi.
- Hatfield, L. (2019). Accounting Basics. Amazon Digital Services LLC.
- Horngren, C. T., Sundem, G. L., Elliott, J. A., & Philbrick, D. (2017). Introduction to Financial Accounting. Pearson Education, London
- Kumar, A. (2018). Financial Accounting, Singhal Publication
- Lal, J., & Srivastava, S. (2017). Financial Accounting Text & Problems. Himalaya Publishing House, Mumbai.

- Lt Bhupinder (2020) Principles of Financial Accounting, Cengage.
- Maheshwari, S. N., Maheshwari, S. K., & Maheshwari, S. K.(2018). Financial Accounting. Vikas Publishing House Pvt. Ltd, New Delhi
- Monga, J. R. (2020). Financial Accounting: Concepts and Applications. Mayur Paperback , New Delhi
- Mukharji, A., & Hanif, M. (2010). Financial Accounting. Tata McGraw Hill Publishing Co. Ltd, New Delhi
- Mukherjee, S., & Mukherjee, A. K. (2017). Financial Accounting Oxford University Press, USA
- Sah, R. K. (2020). Concept building approach to financial accounting, Cengage
- Sehgal, D. (2016). Financial Accounting. Vikas Publishing House Pvt. Ltd, New Delhi.
- Siddiqui, S. A. (2008). Book Keeping & Accountancy. Laxmi Publications Pvt. Ltd, New Delhi.
- Sofat, R. & Hiro, P . (2016). Basic Accounting, 3rd ed. PHI learning
- Tulsian, P. C. (2020). Financial Accounting.Tata McGraw Hill Publishing Co. Ltd, New Delhi.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.

Annexure- 8

Computer Applications in Business
BCH: GE- 1.5

Objective: This paper aims to impart computer knowledge that will enable them the ability to handle and analyse data for decision making and present it to the person concerned in the form of presentations and/or reports in the fast-moving business world.

Learning Outcomes: After completion of the course, learners will be able to:

1. describe the various concepts and terminologies used in computing, computer networks and the internet.
2. examine document creation for report making and communication.
3. identify and make good presentations.
4. analyse various computations using various functions in the area of accounting and finance and represent the business data using suitable charts. s/he should also be able to manipulate and analyse the business data for a better understanding of the business environment and decision-making.
5. identify the spreadsheet knowledge acquired through this paper in solving real-life problems that help in decision making.

Course Contents:

Unit	Unit wise weightage of marks (in %)	C&K*	A&A**
Unit 1: Introduction	25	√	√
Unit 2: Word Processing	20	√	√
Unit 3: Preparing presentation	10	√	√
Unit 4: Spreadsheet basics	20	√	√
Unit 5: Spreadsheet projects	25	√	√

*C&K- Comprehension & Knowledge
**A&A – Analysis & Application

Unit 1: Introduction

Computing: Concept of computing, Data and information; Computing Interfaces: Graphical User Interface (GUI), Command Line Interface(CLI), Touch Interface, Natural Language Interface(NLI); data processing; applications of computers in business.

Computer Networks: Meaning of computer network; objectives/ needs for networking; Applications of networking; Basic Network Terminology; Types of Networks; Network Topologies; Distributed Computing: Client Server Computing, Peer-to-peer Computing; Wireless Networking; Securing Networks: firewall.

Basic Internet Terminology: I.P. Address, Modem, Bandwidth, Routers, Gateways, Internet Service Provider (ISP), World Wide Web (www), Browsers, Search Engines, Proxy Server, Intranet and Extranet; Basic Internet Services; Internet Protocols: TCP/IP, FTP, HTTP(s), Uses of the Internet to Society; Cyber Security: Cryptography, digital signature.

Unit 2: Word Processing

Introduction to word Processing, Word processing concepts, Use of Templates and styles, Working with word documents: Editing text, Find and replace text, Formatting, spell check, Autocorrect, Auto-text; Bullets and numbering, Tabs, Paragraph Formatting, Indent, Page Formatting, Header and footer, page break, table of contents, Tables: Inserting, filling and formatting a table; Inserting Pictures and Video; Mail Merge (including linking with spreadsheet files as data source); Printing documents; Citations, references and Footnotes.

Unit 3: Preparing Presentations

Basics of presentations: Slides, Fonts, Drawing, Editing; Inserting: Tables, Images, texts, Symbols, hyperlinking, Media; Design; Transition; Animation; and Slideshow, exporting presentations as pdf handouts and videos.

Unit 4: Spreadsheet basics

Spreadsheet concepts, Managing worksheets; Formatting, conditional formatting, Entering data, Editing, and Printing and Protecting worksheets; Handling operators in the formula, Projects involving multiple spreadsheets, Organizing Charts and graphs; Flash-fill; Working with Multiple worksheets; controlling worksheet views, naming cells and cell ranges.

Spreadsheet functions: Mathematical, Statistical, Financial, Logical, Date and Time, Lookup and reference, Text functions and Error functions.

Working with Data: Sort and filter; Consolidate; Tables; Pivot tables; What–if-analysis: Goal seek, Data tables and Scenario manager.

Unit 5: Spreadsheet projects

Creating business spreadsheet: Loan repayment scheduling; forecasting: stock prices, costs & revenues; Payroll statements; handling annuities and unequal cash flows; Frequency distribution and its statistical parameters and break-even analysis.

Note:

1. The General Purpose Software referred in this course will be notified by the University Departments every three years. If the specific features, referred to in the detailed course above, are not available in that software, to that extent it will be deemed to have been modified.

2. There shall be a practical examination of 50 Marks (2 hours duration), a theory exam of 25 marks (1 hour duration) and an Internal Assessment of 25 marks (Class Test-10 Marks, WorkBook- 10 Marks and attendance- 5 marks).

3. There shall be 1 lecture period per class and 6 Practical Lab periods per batch to be taught in the Computer Laboratory.

Practical Exercises

The learners are required to do the practical exercises which include, but are not limited to, the following:

1. Analyze and compare the different mobile payment apps (at least 5) on the basis of their pros and cons and prepare a report on the same in word document using a table of contents, bullets, numbering, citations, etc. Also prepare a presentation for the same.

2. Using mail merge utility of word processing for either sending letters or for creating any other document like salary slip/ utility bills to be delivered to multiple recipients using data from a business organization or of the peer students.

3. Identify a topic related to any business operation and prepare a PowerPoint Presentation with all the above functions therein.

4. Prepare a Spreadsheet document with any hypothesized data and perform all the above functions therein.

5. By taking secondary data from a company's income statement and balance sheet for five to ten years, all the learners are required to conduct the Ratio Analysis and forecast values for different items of these statements for the next five to ten years.

6. Using logical, mathematical and statistical functions of the spreadsheet, the learners should be able to analyse the results of the class test using hypothesized data to determine the students who passed or failed, assigning them ranks like first, second, third, etc., finding out a number of absentees, counting no. of students scoring marks with distinction, etc.

7. The learners should be able to prepare repayment schedules of the loans that they borrow, prepare a payroll statement using spreadsheet functions listed above and analyse different investment opportunities using financial functions.

8. By taking live data from the website of the Government of India, use a Spreadsheet for preparing frequency distribution, and graphs, and calculate statistical measures like mean, median, mode, standard deviation, Correlation etc.

Suggestive Readings:

- Jain, H. C. & Tiwari, H. N. (2021). Computer Applications in Business. Taxmann, Delhi.
- Joseph, P. T., S. J. (2015). E-Commerce: An Indian Perspective, 6th ed. PHI Learning
- Mathur, S. & Jain, P. (2016). Computer Applications in Business. Galgotia Publishing Company
- Madan, S. (2020).Computer Applications in Business. Scholar Tech Press, Delhi.
- Sharma, S. K. & Bansal, M. (2017). Computer Applications in Business. Taxmann, Delhi.
- Thareja, R. (2019). Fundamentals of Computers. Oxford University Press.
- Thareja, R. (2018). IT & It's Business Application.Oxford University Press.
- Walkenbach, J. MS Excel (2016). Bible. John Wiley & Sons, USA.
- Winston, W. L. MS Excel (2013). Data Analysis & Business Modeling. Microsoft Press, USA.

Additional Readings:

- Benninga, S. (2022). Financial Modeling. The MIT Press, USA.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.

Annexure- 9

Bhartiya Gyan Parampara (Indian Knowledge System)
BCH: GE- 1.6

Objective: The course aims to familiarize the students with the astonishing breadth and depth of the Indian scientific and knowledge tradition.

Learning Outcomes: After completion of the course, learners will be able to:

1. apportion the experience of the Gurukul system of education Indian culture
2. explain the concept of oneness (Ekatma Bhav).
3. use meditation on Panchkoshas and Chakras for enhancing productivity.
4. apply the management principles from the epics and compare them with the policies and schemes of the Government of India.

Course Contents:

Unit	Unit wise weightage of marks (in %)	C&K*	A&A**
Unit 1: Bhartiya Gyan Parampara (Indian Knowledge System) – An Overview	25	√	√
Unit 2: Knowledge: Framework and Classification	25	√	√
Unit 3: Health, Wellness and Psychology	25	√	√
Unit 4: Governance and Public Administration	25	√	√

*C&K- Comprehension & Knowledge
**A&A – Analysis & Application

Unit 1: Bhartiya Gyan Parampara (Indian Knowledge System) – An Overview
Importance of Ancient Knowledge; Defining Indian Knowledge System; The Indian Knowledge System Corpus- A Classification Framework; Some unique aspects of Indian Knowledge System: Nuances of an Oral Tradition. History of Traditional Indian Trade and commerce: Silk, cotton, sugar, spices etc., silk route. Traditional mercantile system

Unit 2: Knowledge: Framework and Classification
Tarka: The Indian Art of Debate- The Knowledge Triangle; Prameya – A Vaisesikan Approach to Physical Reality- Dravyas, Attributes, Action; Vaisesikan Worldview of 'Existence';

Pramana; Samasya; Framework for establishing Valid Knowledge – Deductive/ Inductive Logic Framework, Potential Fallacies in the Reasoning Process, Established Tenets in a Field of Study. Knowledge management; Types of knowledge management , Knowledge barriers, Knowledge Retention

Unit 3: Health, Wellness and Psychology

Impact of Yoga Way of life on Emotional Intelligence of Managers; Ayurveda- Definition of Health; Tri- dosas – Relationship to Health; The Body- Mind- Intellect- Consciousness Complex; Consciousness- The True Nature of an Individual; Five layered Consciousness of an Individual (Panchkoshas); Chakra System (Energy centres). Consciousness: Management by consciousness, Levels of Individual and Organizational consciousness, Self-consciousness, beyond self-consciousness.

Unit 4: Governance and Public Administration

Ramayana on Great Attributes, Dos, and Don'ts of a King; Arthasastra- Governance and Administration; Relevance of Arthasastra; Kautilyan State; Vidura- niti – Advice to a King- The Amatya, Settlements and Land Use (Janapada), Fortified Capital city (Durga), Treasury and State Economy (Kosa), Law & Order and Security (Danda), Foreign Policy and Allies (Mitra); Public Administration- Perspectives from the Epics. Indigenous banking system: Methods of the Indigenous banking system; Promissory note, Dastavez, Rahan,

Functions of the indigenous banking system; Advancing loans, discounting Hundis; Type of Hundi, Darshni Hundi, Muddati Hundi.

Practical Exercises:

1. visit a Gurukul/ Ashram and have your own experience (*anubhooti*) of the Indian ancient knowledge system.
2. muktchintan (brainstorming) on topics life worldview of existence.
3. practise of meditation on Panchkoshas and Chakras.
4. muktchintan (brainstorming) on the perspectives from the epics and the real-life scenario of their applicability in the policies and schemes of the Government of India like Foreign policy, Defence policy, Innovation and Start-up Policy, Global Initiatives like One Sun One World One Grid: India's Initiative; Vaccine Diplomacy, International Yoga Day.

Suggested Readings:

- Aurobindo, S. (2021). The Foundations of Indian Culture. India: Sri Aurobindo Ashram.
- Dharampal. (1995). The Beautiful Tree: Indigenous Indian Education in the Eighteenth Century. Rashtrotthana Sahitya. ISBN-10:8175310952
- Indian Knowledge Systems. (2005). India: Indian Institute of Advanced Study.
- Mahadevan, B., Bhat, V. R., & Pavana, N. (2022) Introduction to Indian Knowledge System Concepts and Applications. PHI Learning

- Parthasarathy, S. (2014). Vedanta for Modern World. Sri Siim Research Press.
- Pe, D. (2005). Hidden dangers of meditation and yoga. Payal Books
- Simpson, A. (2019). Leadership Lessons from the Bhagavad Gita. India: SAGE Publications.
- The Arthashastra. (2000). India: Penguin Books Limited.
- Vivekananda, S. (2021). Patanjali Yoga Sutra. Srishti Publishers & Distributors. ISBN-10:9390441137

Additional Sources for material Indian Knowledge System

- https://iksindia.org/index.php
- https://indianculture.gov.in/indian-culture-repository
- https://vedicheritage.gov.in/
- https://www.rarebooksocietyofindia.org/
- https://management.cessedu.org/
- https://indica.in/
- https://www.bhratiyakritisampada.nic.in
- Attree, A. K., Kumar, V., and Singh, A. K. (2020) Developing and validating the individual and organisational consciousness scale, International Journal of Work Organisation and Emotion, Vol. 11, No. 2, 154-177

Note: Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.

Annexure 10

TAXATION
Basic Personal Taxation

BCH: GE-1.10

Course Objective(s): To provide basic knowledge and equip students with the application of principles and provisions of the Income-tax Act, 1961 applicable to individuals and the relevant Rules; and to enable the students to apply them to real-world situations.

Learning Outcomes:

1. analyse the basic concepts of income tax and determine the residential status of different persons;
2. compute income under the heads 'salaries' and 'income from house property;
3. compute income under the heads 'Profits and gains of business or profession' and 'capital gains';
4. compute income under the head 'income from other sources' and understand the provisions relating to income of other persons included in assessee's total income; and
5. analyse various deductions and computation of total income and tax liability of individuals.

Course Contents:

Units	Unit wise weightage of marks (in %)	C & K*	A & A*
Unit 1: **Introduction**	20	√	√
Unit 2: **Computation of Income – 1**	26	√	√
Unit 3: **Computation of Income – 2**	27	√	√
Unit 4 **Computation of Income -3**	27	√	√

Unit 1: Introduction **(3 Weeks)**

Origin of Tax System in India; Taxation – Voluntary practice to the involuntary system, Kautilya's philosophy of Taxation.

Basic concepts: Income, agricultural income, person, assessee, assessment year, previous year, gross total income, total income, the maximum marginal rate of tax; Permanent Account Number (PAN). Residential status (only individual); Scope of total income on basis of residential status.

Unit 2: Computation of Income – 1 **(4 Weeks)**

Income from Salaries: Meaning, the basis of charge, different forms, allowances, perquisites.

Income from house property: Basis of charge, computing income from letting out, self-occupied and partly let out and partly self-occupied, provisions related to unrealised rent, taxation of arrears of rent. Deductions from Annual Value (Sec 24).

Unit 3: Computation of Income – 2 **(4 Weeks)**

Profits and gains of business or profession: Basis of charge, computing business or profession income, the relevance of method of accounting, scheme of deductions and allowances, specific deductions under the act, specific disallowances under the act.

Unit 4: Computation of Income -3 **(4 Weeks)**

Capital gains: Basis of charge, capital asset, transfer of a capital asset, consideration, cost of acquisition, cost of improvement, indexation, computation of capital gains.

Income from other sources: Basis of charge, the relevance of method of accounting, dividend, interest on securities, winnings from lotteries, crossword puzzle, horse race, and card games and their taxation.

Practical Exercises:

The learners are required to:

1. discuss selected provisions of the Income-tax Act, 1961 from the official website of the Government of India;

2. refer to the Finance Act to learn about the amendments done in various provisions of the Income-tax Act, 1961;

3. refer relevant notifications and circulars from the official website of Government of India;

4. use tax calculators available on the official website of Government of India; and

5. explore and attempt online filing of Returns of Income & TDS on the Income tax e-filing website under ITR-1 and ITR-2.

Suggested Readings:

1. Singhania, V. K., & Singhania, M. (2021). Students' Guide to Income Tax. University Edition. Taxmann Publications Pvt. Ltd., New Delhi.
2. Ahuja, G., & Gupta, R. (2022). Systematic Approach to Income Tax. Commercial Law House, Delhi.
3. Pagare, D. (2021). Law and Practice of Income Tax. Sultan Chand and Sons, New Delhi.
4. Lal, B. B. (2011). Income Tax Law and Practice. Konark Publications, New Delhi.

Additional Readings

1. Income Tax Reports. Company Law Institute of India Pvt. Ltd., Chennai.
2. Current Tax Reporter. Current Tax Reporter, Jodhpur.
3. Taxman. Taxman Allied Services Pvt. Ltd., New Delhi.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.

Assessment

Total Marks: 100
Internal Assessment: 25 Marks
End Semester University Exam: 75 Marks
The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work and Presentations, amongst others as decided by the faculty.

(Generic Elective / Language)

सेमेस्टर–I

'हिंदी–क' (उन विद्यार्थियों के लिए जिन्होंने 12वीं कक्षा तक हिंदी पढ़ी है।)

हिंदी : भाषा और साहित्य

Course Objective (2-3)

हिंदी भाषा और साहित्य की सामान्य जानकारी विकसित करना।

राष्ट्रभाषा, राजभाषा और संपर्क भाषा के रूप में हिंदी की स्थिति का परिचय देना।

विशिष्ट कविताओं के अध्ययन–विश्लेषण के माध्यम से कविता–संबंधी समझ विकसित करना।

Course Learning Outcomes

हिंदी साहित्य और भाषा के विकास की स्पष्ट समझ विकसित होगी।

आधुनिक आवश्यकताओं के अनुरूप राष्ट्रभाषा, राजभाषा और संपर्कभाषा की जानकारी प्राप्त होगी।

इकाई–1

(क) हिंदी भाषा का उद्भव एवं विकास

(ख) राष्ट्रभाषा, राजभाषा और संपर्क–भाषा के रूप में हिंदी

इकाई–2

हिंदी साहित्य का इतिहास

(क) हिंदी साहित्य का इतिहास (आदिकाल, मध्यकाल) सामान्य परिचय

(ख) हिंदी साहित्य का इतिहास (आधुनिक काल) सामान्य परिचय

इकाई–3

(क) कबीर – कबीर ग्रंथावली, सं. श्यामसुंदर दास, नागरीप्रचारिणी सभा, वाराणसी 17वां संस्करण, सं. 2049 वि.

साखी : रस कौ अंग – 1, 2, 3, 4, 5, 6, 7 और 8

(ख) भूषण – भूषण ग्रंथावली, सं. आचार्य विश्वनाथ प्रसाद मिश्र, वाणी प्रकाशन, दिल्ली, 1998; कवित्त संख्या 409, 411, 412

(ग) बिहारी – बिहारी रत्नाकर, सं. जगन्नाथ दास रत्नाकर बी.ए., प्रकाशन संस्थान, नई दिल्ली, सं. 2006, दोहा 1,10, 13, 32

इकाई–4

– आधुनिक हिंदी कविता

– माखनलाल चतुर्वेदी : बेटी की विदाई

– जयशंकर प्रसाद : हिमाद्रि तुंग शृंग से

– नागार्जुन : बादल को घिरते देखा है

References

1. रामचंद्र शुक्ल : हिंदी साहित्य का इतिहास
2. हजारीप्रसाद द्विवेदी : हिंदी साहित्य की भूमिका
3. सं. डॉ. नगेंद्र : हिंदी साहित्य का इतिहास
4. रामस्वरूप चतुर्वेदी : हिंदी साहित्य और संवेदना का विकास
5. डॉ. रसाल सिंह : हिंदी साहित्य के इतिहास पर कुछ नोट्स

Teaching Learning Process

व्याख्यान, सामूहिक चर्चा, वीडियो आदि

1 से 3 सप्ताह : इकाई–1

4 से 6 सप्ताह : इकाई–2

7 से 9 सप्ताह : इकाई–3

10 से 12 सप्ताह : इकाई–4

13 से 14 सप्ताह : सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट और असाइनमेंट

डॉ. श्यौराज सिंह / Dr. Shyoraj SINGH
वरिष्ठ आचार्य एवं अध्यक्ष, हिन्दी विभाग
Senior Professor and Head, Deptt. of Hindi
दिल्ली विश्वविद्यालय / University of Delhi
दिल्ली–110007 / Delhi-110007

(Generic Elective / Language)

सेमेस्टर–I

'हिंदी–'ख' (उन विद्यार्थियों के लिए जिन्होंने 10वीं कक्षा तक हिंदी पढ़ी है।)

हिंदी : भाषा और साहित्य

Course Objective (2-3)

हिंदी भाषा और साहित्य की सामान्य जानकारी विकसित करना।

विशिष्ट कविताओं के अध्ययन–विश्लेषण के माध्यम से कविता संबंधी समझ विकसित करना।

Course Learning Outcomes

हिंदी साहित्य और भाषा के विकास की स्पष्ट समझ विकसित होगी।

विशिष्ट कविताओं के अध्ययन से साहित्य की समझ विकसित होगी।

इकाई–1

हिंदी भाषा और साहित्य

हिंदी भाषा का उद्भव और विकास

हिंदी की प्रमुख बोलियों का परिचय

हिंदी साहित्य का इतिहास : संक्षिप्त परिचय (आदिकाल, मध्यकाल)

हिंदी साहित्य का इतिहास : संक्षिप्त परिचय (आधुनिक काल)

इकाई–2

भक्तिकालीन कविता :

(क) कबीर – कबीर ग्रंथावली, सं. श्यामसुंदर दास, नागरीप्रचारिणी सभा, वाराणसी 17वां संस्करण, सं. 2049 वि.

हिंदी - विभाग
दिल्ली विश्वविद्यालय

साखी : गुरुदेव कौ अंग – 24, 25, 26, 27, 28, 33, 34

(ख) तुलसी : 'रामचरितमानस' गीता प्रेस, गोरखपुर से 'केवट प्रसंग'

इकाई–3

– मैथिलीशरण गुप्त : नर हो न निराश करो .....

– सूर्यकांत त्रिपाठी 'निराला' – तोड़ती पत्थर

– केदारनाथ अग्रवाल : धूप

इकाई–4

आधुनिक कविता

– सुभद्रा कुमार चौहान : बालिका का परिचय

– निराला : तोड़ती पत्थर

References

1. रामचंद्र शुक्ल : हिंदी साहित्य का इतिहास
2. हजारीप्रसाद द्विवेदी : हिंदी साहित्य की भूमिका
3. सं. डॉ. नगेंद्र : हिंदी साहित्य का इतिहास
4. रामस्वरूप चतुर्वेदी : हिंदी साहित्य और संवेदना का विकास
5. आ. विश्वनाथ प्रसाद मिश्र : भूषण ग्रंथावली
6. डॉ. रसाल सिंह : हिंदी साहित्य के इतिहास पर कुछ नोट्स

Teaching Learning Process

व्याख्यान, सामूहिक चर्चा

1 से 3 सप्ताह : इकाई–1

4 से 6 सप्ताह : इकाई–2

7 से 9 सप्ताह : इकाई–3

10 से 12 सप्ताह : इकाई–4

13 से 14 सप्ताह : सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट और असाइनमेंट

डॉ. श्यौराज सिंह / [illegible] VEERAJ SINGH
वरिष्ठ आचार्य एवं अध्यक्ष
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दिल्ली–110007 / Delhi-110007

(Generic Elective / Language)

सेमेस्टर–I

'हिंदी–'ग' (उन विद्यार्थियों के लिए जिन्होंने 8वीं कक्षा तक हिंदी पढ़ी है।)

हिंदी : भाषा और साहित्य

Course Objective (2-3)

हिंदी भाषा और साहित्य की सामान्य जानकारी विकसित करना।

विशिष्ट कविताओं के अध्ययन–विश्लेषण के माध्यम से कविता संबंधी समझ विकसित करना।

Course Learning Outcomes

हिंदी साहित्य और भाषा के विकास की स्पष्ट समझ विकसित होगी।

विशिष्ट कविताओं के अध्ययन से साहित्य की समझ विकसित होगी।

इकाई–1

हिंदी भाषा और साहित्य

(क) हिंदी भाषा का उद्भव एवं विकास

(ख) हिंदी का भौगोलिक विस्तार

(ग) हिंदी कविता का विकास (आदिकाल, मध्यकाल) : सामान्य विशेषताएँ

(घ) हिंदी कविता का विकास (आधुनिक काल) : सामान्य विशेषताएँ

इकाई–2

भक्तिकालीन हिंदी कविता :

कबीर : कबीर ग्रंथावली, सं. श्यामसुंदर दास, नागरीप्रचारिणी सभा, वाराणसी 17वां संस्करण, सं. 2049 वि.

साखी : गुरुदेव कौ अंग – 19, 20, 21, 22, 23

सूरदास :

– मैया मैं नहिं माखन खायौ .....

– उधो मन न भए दस–बीस .....

इकाई–3

रीतिकालीन हिंदी कविता

(क) बिहारी :

– मेरी भव बाधा हरौ .....

– कनक कनक ते सौं गुनी .....

– कहत नटत रीझत खिजत .....

(ख) घनानंद :

– अति सूधो सनेह को मारग .....

– रावरे रूप की रीति अनूप .....

इकाई–4

आधुनिक हिंदी कविता

– सुमित्रानंदन पंत : आह! धरती कितना देती है .....

– सर्वेश्वर दयाल सक्सेना : लीक पर वे चलें .....

References

1. कबीर : हजारीप्रसाद द्विवेदी
2. तुलसी काव्य–मीमांसा : उदयभानु सिंह

3. हिंदी साहित्य का सरल इतिहास : विश्वनाथ त्रिपाठी
4. बिहारी की वाग्विभूति : विश्वनाथ प्रसाद मिश्र
5. हिंदी साहित्य का इतिहास : रामचंद्र शुक्ल
6. डॉ. रसाल सिंह : हिंदी साहित्य के इतिहास पर कुछ नोट्स

Teaching Learning Process

सीखने की इस प्रक्रिया में हिंदी साहित्य और हिंदी कविता को मजबूती प्रदान करना है। कालक्रम के विद्यार्थी युगबोध को ठीक से जान सकेंगे। छात्र कविता के माध्यम से उसमें निहित मानवतावादी दृष्टिकोण को बेहतर तरीके से जान सकेंगे। हिंदी भाषा आज तेजी से वैश्वीकृत हो रही है। ऐसे में कविता की भूमिका और भी अधिक महत्वपूर्ण हो जाती है। साहित्य के आरंभ से ही कविता ने समय और समाज को प्रभावित किया है और मानवीय आचरण को संतुलित करने में महत्वपूर्ण भूमिका निभाई है। अतः शिक्षण में हिंदी कविता छात्रों के दृष्टिकोण को और भी अधिक परिपक्व करेगी। प्रस्तुत पाठ्यक्रम को निम्नांकित सप्ताहों में विभाजित किया जा सकता है :

1 से 3 सप्ताह : इकाई–1

4 से 6 सप्ताह : इकाई–2

7 से 9 सप्ताह : इकाई–3

10 से 12 सप्ताह : इकाई–4

13 से 14 सप्ताह : सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट और असाइनमेंट

Assessment Methods

टेस्ट और असाइनमेंट

हिन्दी विभाग
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UNIVERSITY OF DELHI

DEPARTMENT OF ENGLISH

COURSE NAME: Language Course for B.A./B.Com. Programme

(SEMESTER -)
based on

Undergraduate Curriculum Framework 2022 (UGCF)

(Effective from Academic Year 2022-23)

University of Delhi

Course name: Language Course for B.A./B.Com. Programme

Course Title	Nature of the Course	Total Credits	Components			Eligibility Criteria/ Prerequisite	Contents of the course and reference is in
			Lecture	Tutorial	Practical		
English Language Through Literature- I	GE Language 1	4	3	1	0	Class XII pass	Annexure 5
English Language Through Literature- II	GE Language 2	4	3	1	0	Class XII pass	Annexure 5
Digital Communications- I	GE Language 3	4	3	1	0	Class XII pass	Annexure 5
Digital Communications- II	GE Language 4	4	3	1	0	Class XII pass	Annexure 5
English Fluency- I	GE Language 5	4	3	1	0	Class XII pass	Annexure 5
English Fluency- II	GE Language 6	4	3	1	0	Class XII pass	Annexure 5
Developing English Language Skills- I	GE Language 7	4	3	1	0	Class XII pass	Annexure 5
Developing English	GE Language	4	3	1	0	Class XII	Annexure 5

Language Skills- II	8					pass	

ANNEXURE 5

GE LANGUAGES (ENGLISH) FOR B.A./B. COM. PROGRAMME

Credits: 4 credits per course(3 Theory+ 1 Tutorial)

GE Language Course 1: ENGLISH LANGUAGE THROUGH LITERATURE- I

Credit: 4 (3 Theory+1 Tutorial/Internal Assessment)

Course objectives:

This course aims to:

- develop in students the ability and confidence to process, understand and examine different kinds of texts-verbal and written-that they encounter in everyday life.
- enable students to identify and understand social contexts and ethical frameworks in the texts they encounter.
- encourage suitable research–to recognize sources; to distinguish fact from opinion/editorialization; produce objective versus subjective pieces
- learn skilled comprehension; listening/reading; skimming; summarizing; précis writing; paraphrasing; note making
- identify key topics/arguments/ideas
- accomplish writing goals: creating an essay; writing a thesis statement; producing topic sentences; developing organised paragraphs; evolving the skill of producing suitable transitions between paragraphs
- enable students to write in expository argumentative and descriptive modes
- help students identify and use the characteristic features of various writing forms: letters; programmes reports/press-releases; newspaper; feature articles; fiction and nonfiction
- enable students to choose between expository, argumentative, descriptive and narrative writing styles to assemble their own writing
- inculcate confident expression: to enable students to articulate their own views confidently as their language skills sufficiently empower them to converse, research and collate information from various textual sources, be these verbal or written.

Course Content:

UNIT 1: Understanding Everyday Texts

1. Edwards, Adrian 'Forced displacement worldwide at its highest in decades' *UNHCRorg*UNHCR

http://wwwunhcrorg/afr/news/stories/2017/6/5941561f4/forced-displacement-worldwide-its-highest-decadeshtml# Accessed 1st June, 2022

2. Jadhav, Radheshyam 'Groom wanted: Trader peon…anyone but a farmer' *Times News Network*. 1st Jan, 2018

https://timesofindiaindiatimescom/city/chandigarh/groom-wanted-trader-peonanyone-but-a-farmer/articleshow/62321832cms Accessed 1st June, 2022

3. Knapton, Sarah 'Selfitis' -- the obsessive need to post selfies-- is a genuine mental disorder say psychologists' *The* Telegraph. 15th December 2017 https://wwwtelegraphcouk/science/2017/12/15/selfitis-obsessive-need-post-selfies-genuine-mental-disorder/ Accessed 1st June 2022

4. '13 letters every parent every child should read on Children's Day' *The Indian Express*. 10th November 2014

http://indianexpresscom/article/lifestyle/feelings/12-letters-every-parent-every-child-should-read-on-childrens-day/ Accessed 1st June 2022

UNIT 2: Understanding Drama

5. Lakshmi, CS. (i) 'Ambai' (ii) 'Crossing the River', *Staging Resistance: Plays by Women in Translation*. Ed. Tutun Mukherjee, Oxford: Oxford University Press, 2005.

UNIT 3: Understanding Poetry

6. Angelou, Maya. 'Caged Bird', *The Complete Collected Poems of Maya Angelou*. New York: Random House Inc, 1994.

7. Ezekiel, Nissim. 'Goodbye Party for Miss Pushpa TS', *Collected Poems*. New Delhi: Oxford University Press, 2005.

8. Okara, Gabriel. 'Once Upon a Time', *Gabriel Okara: Collected Poems*. Nebraska: University of Nebraska, 2016.

9. Lawrence, DH. 'Last Lesson of the Afternoon', *The Complete Poems of DH Lawrence*. Hertfordshire: Wordsworth Editions, 1994.

GE Language Course 2: ENGLISH LANGUAGE THROUGH LITERATURE- II

Credit: 4 (3 Theory+1 Tutorial/Internal Assessment)

Course objectives:

This course aims to:

- develop in students the ability and confidence to process, understand and examine different kinds of texts-verbal and written-that they encounter in everyday life.
- enable students to identify and understand social contexts and ethical frameworks in the texts they encounter.
- encourage suitable research–to recognize sources; to distinguish fact from opinion/editorialization; produce objective versus subjective pieces
- learn skilled comprehension; listening/reading; skimming; summarizing; précis writing; paraphrasing; note making
- identify key topics/arguments/ideas
- accomplish writing goals: creating an essay; writing a thesis statement; producing topic sentences; developing organised paragraphs; evolving the skill of producing suitable transitions between paragraphs
- enable students to write in expository argumentative and descriptive modes
- help students identify and use the characteristic features of various writing forms: letters; programmes reports/press-releases; newspaper; feature articles; fiction and nonfiction
- enable students to choose between expository, argumentative, descriptive and narrative writing styles to assemble their own writing
- inculcate confident expression: to enable students to articulate their own views confidently as their language skills sufficiently empower them to converse, research and collate information from various textual sources, be these verbal or written.

Course Content:

UNIT 1: Understanding Fiction

1. Kumar E., Santhosh. ‘Three Blind Men describe an Elephant’, *Indian Review*.

http://indianreviewin/fiction/malayalam-short-stories-three-blind-men-describe-an-elephant-by-e-santhosh-kumar/ Accessed 1st June 2022

2. Mistry, Rohinton. ‘The Ghost of Firozsha Baag’, *Tales from Firozsha Bagh*. McClelland & Stewart, 1992.

3. Joshi, Umashankar. ‘The Last Dung Cake’, *The Quilt from the Flea-market and Other Stories*. Delhi: National Book Trust, 2017.

UNIT 2: Creating Your Own Voice

4. Powell, Tori B. 'Young people discuss how phones and social media create connection — and self-doubt: "Compared to them, I am a nobody"' *CBS News*. Posted 24th May 2022.

https://www.cbsnews.com/news/mental-health-impacts-phones-social-media/

5. Khanna, Twinkle. 'Lesson from Frida: Backbone can win over broken spine' in 'Mrs. Funnybones' *The Times of India*. 16th September 2018. https://timesofindia.indiatimes.com/blogs/mrsfunnybones/lesson-from-frida-backbone-can-win-over-broken-spine/ Accessed 13th June 2022

UNIT 3: Writing your own academic paper

6. Patel, Raj and Moore Jason. 'How the chicken nugget became the true symbol of our era' *The Guardian*, 8th May 2018

https://wwwtheguardiancom/news/2018/may/08/how-the-chicken-nugget-became-the-true-symbol-of-our-era Accessed 1st June 2022

7. Latest editions of the MLA and APA style sheets

GE Language Course 3: DIGITAL COMMUNICATIONS- I

Credit: 4 (3 Theory+1 Tutorial/Internal Assessment)

Course objectives:

- This course is for students who intend to understand and learn globally emerging forms of digital communication in English and effectively communicate in their everyday contexts be it in social or professional situations.
- The course aims to hone skills for online communication and provide interpersonal skills required in the digital world.
- The course will help students effectively present themselves in personal and professional capacities using online mediums.

Course content:

UNIT I: Constructing a Self

1. Creating a personal/professional profile for social media. (Facebook, LinkedIn etc.)

2. Striking up formal, informal conversations (register, tone, vocabulary)

3. Social Media etiquette

UNIT II: Expressing the Self

1. Blogs, Facebook posts (expressing likes and dislikes)

2. Formal and informal correspondence (emails, making announcements on social groups: expressing/ declining interests, making requests, sharing information).

3. Acknowledging and negotiating opinions

UNIT III: Expressing Visually

1. Introducing oneself in a vlog (how to create a narrative: biography, autobiography)

2. Striking a rapport/connecting with viewers/audience (colloquial language, discourse markers)

3. Moderating content (integrating narrative with visuals/images)

GE Language Course 4: DIGITAL COMMUNICATIONS- II

Credit: 4 (3 Theory+1 Tutorial/Internal Assessment)

Course objectives:

- This course is for students who intend to understand and learn globally emerging forms of digital communication in English and effectively communicate in their everyday contexts be it in social or professional situations.
- The course aims to hone skills for online communication and provide interpersonal skills required in the digital world.
- The course will help students effectively present themselves in personal and professional capacities using online mediums.

Course content:

UNIT I: Curating Persona

1. Maintaining profiles (continuity: coherence, cohesion)

2. Innovating content (introducing new ideas, opinions, and facts: style and correctness)

3. Content writing (briefs, press releases, podcast scripts: concise, cohesion, coherence, clarity)

UNIT II: Making Institutional Profiles and networks

1. Writing about the institution (describing and assessing)

2. Building networks (compare, contrast, synthesize)

3. Updating Blogs and Vlogs (discourse markers)

UNIT III: Online Interactions and Diversity

1. Etiquettes for online interactions (chats, meetings, video conferences).

2. Ethics towards inclusive and integrated participation (addressing gender, ethnicity, special abilities)

3. Drawing boundaries in communication (obscenities, hostility, addressing disrespectful comments and feedback: changing register and tone of communication)

GE Language Course 5: ENGLISH FLUENCY- I

Credit: 4 (3 Theory+1 Tutorial/Internal Assessment)

Course objectives:

- This course is intended for students who possess basic grammatical and vocabulary skills in English but may not be able to effectively communicate in their everyday contexts.
- The course aims to equip them with skills that will help them interact with people around their personal, institutional and social spaces.

The course will help students to:

- describe or express their opinions on topics of personal interest such as their experiences of events, their hopes and ambitions.
- read and understand information on topical matters and explain the advantages and disadvantages of a situation.
- write formal letters, personal notes, blogs, reports and texts on familiar matters.
- comprehend and analyse texts in English.
- organise and write paragraphs and short essays in a variety of rhetorical styles.

Course content:

UNIT I: In the domestic sphere

1. Diary

2. Modifiers, Prepositions, Conjunctions

3. Write a diary entry and convert it into a blog post

4. Convert a transcript/ script/ piece of dialogue into a diary entry/ blog post

Readings:

1. Morgan, Esther. 'The Lost Word', *New Writing*. ed. Penelope Lively and George Szirtes, Picador India, 2001.

2. Sharma, Natasha. *Squiggle Gets Stuck: All About Muddled Sentences*. India: Penguin Books Limited, 2016.

UNIT II: In the University

1. Introducing oneself -- Note-making

2. Pronunciation Intonation – Nouns, Verbs, Articles

3. Blog writing

A. Introduce yourselves as individuals and as groups -- group discussion exercise Take notes on your fellow students' introductions.

B. Introduce characters from the text you are reading via posters

Readings:

3. Ghose, Premola. *Tales of Historic Delhi*. Zubaan, 2011.

UNIT III: In public places

1. CV Job applications

2. Tenses and concord

A. Write the CV of a fictional character

B. Write the perfect job application for your dream job

Readings:

4. Chakrabarti, Nirendranath. ‘Amalkanti’, *The Oxford Anthology of Modern Indian Poetry*. ed. Vinay Dharwadkar and A.K. Ramanujan, India: Oxford University Press, 1994.

5. Anand, S., et al. *Bhimayana: Incidents in the Life of Bhimrao Ramji Ambedkar*. India: Navayana Pub, 2011. pp 60-71

GE Language Course 6: ENGLISH FLUENCY- II

Credit: 4 (3 Theory+1 Tutorial/Internal Assessment)

Course objectives:

- This course is intended for students who possess basic grammatical and vocabulary skills in English but may not be able to effectively communicate in their everyday contexts.
- The course aims to equip them with skills that will help them interact with people around their personal, institutional and social spaces.

The course will help students to:

- describe or express their opinions on topics of personal interest such as their experiences of events, their hopes and ambitions.
- read and understand information on topical matters and explain the advantages and disadvantages of a situation.
- write formal letters, personal notes, blogs, reports and texts on familiar matters.
- comprehend and analyze texts in English.
- organize and write paragraphs and short essays in a variety of rhetorical styles.

Course content:

Unit 1: In the State

- Research -- Filing an FIR, making an RTI request, submitting a consumer complaint
- Active & Passive voice; idioms

A. Find out what the procedure is for making a complaint about trees being cut in your neighbourhood.

B. Draft a formal letter requesting information about the disbursal of funds collected by a residents' welfare association

Readings:

1. Sendak, Maurice. *Where the Wild Things Are*. UK: Random House, 2000.

2. https://rtionline.gov.in/

3. www.jaagore.com/know-your-police/procedure-of-filing-fir

4. www.consumercomplaints.in/municipal-corporation-of-delhi-b100274

Unit 2: Interface with Technology

- Book/film reviews
- Punctuation

A. Write a review of a text you have read in class.

B. Record a collaborative spoken-word review of the latest film your group have all seen

Readings:

5. Kennedy, Elizabeth. "Breakdown and Review of 'Where the Wild Things Are'." *ThoughtCo*. Posted 3rd July, 2019.

https://www.thoughtco.com/where-the-wild-things-are-maurice-sendak-626391 Accessed 1st June, 2022

6. Brown, Dan. *Angels & Demons*. UK: Pocket Books, 2000.

7. *Angels & Demons*. dir. Ron Howard, 2009.

Unit 3: Self-Representation

- Introducing oneself, giving and seeking information.
- Introduce characters from the texts you are reading.
- Creating a profile for social media.
- Creating a professional profile of oneself.
- Dialogue writing, Paragraph writing – Brainstorming, planning/outline rough drafts, editing.
- Intercultural Communication

Readings:

8. "To Jyotiba, From Savitribai Phule: These Aren't Love Letters, But Tell You What Love Is All About", *Scroll.In*. Posted 14th February, 2016.

https://scroll.in/article/801848/to-jyotiba-from-savitribai-phule-these-arent-love-letters-buttell-you-what-love-is-all-about Accessed on 1st June 2022

9. Sharma, Natasha. *Squiggle Takes a Walk: All About Punctuation*. Penguin/Young Zubaan and Puffin, 2014.

10. Lorde, Audre. 'The Transformation of Silence into Language and Action', *Sister Outsider*. NY: Random House, 1984. pp 40-44

11. *Haroun and the Sea of Stories: Salman Rushdie*. New Delhi: Penguin Books, 1991. pp 15-23

GE Language Course 7: DEVELOPING ENGLISH LANGUAGE SKILLS- I

Credit: 4 (3 Theory+1 Tutorial/Internal Assessment)

Course objectives:

This course is intended for students who have had inadequate exposure to English and hence exhibit a very low level of proficiency in the language – difficulty in comprehending simple texts, limited vocabulary, a poor grasp of basic syntactical structures, and an inability to speak or write the language with confidence. The course that is spread over two semesters aims to redress these issues and aims to:

- enhance comprehension skills and enrich vocabulary through the reading of short and simple passages with suitable tasks built around these.
- introduce simple syntactical structures and basic grammar to students through contextualized settings and ample practice exercises so that they can engage in short independent compositions.
- introduce the sounds of the language and the essentials of English pronunciation to students in order to remove the inhibitions experienced by them while speaking English.
- acquaint students with social formulae used to perform various everyday functions so that they can converse in English in simple situations.

NOTE: The unit names are indicative only and identify core language areas that are targeted through the course. The learning of various language skills needs to happen in an integrated fashion. It is, therefore, imperative that for every unit, learners should work through the whole range of tasks in the prescribed readings.

Course content:

UNIT 1: Reading & Vocabulary–I

- Strategies for language learning;
- various ways of reading;
- understanding different text types like newspaper articles, poems, stories, etc. through a variety of textual tasks such as reading aloud, sentence completion, true/false activities, re-ordering jumbled sentences, supplying alternative titles, short comprehension questions, etc.

Readings:

1. *A Foundation English Course for Undergraduates*: Book II. Delhi: University of Delhi, 1992. pp 8–10, 47–49

2. *Developing Language Skills I*. Delhi: Manohar, 1997. pp 61–69

3. *English at the Workplace*. Delhi: Macmillan, 2006. pp 1–3, 16–20

4. *Everyday English*. Delhi: Pearson, 2005. pp 21–31

5. *Everyday English 2*. Delhi: Foundation Books, 2006. pp 95 – 100

UNIT 2: Writing & Grammar–I

- Understanding the structure of written texts by identifying topic sentences and supporting details.
- summarizing passages.
- expanding ideas, subjects and topics.
- the steps involved in the process of good writing.
- Revising key topics in grammar: subject - verb agreement, tenses, articles, prepositions.

Readings:

6. *A Foundation English Course for Undergraduates*: Book III. Delhi: University of Delhi, 1993. pp 119–125

7. *Developing Language Skills I*. Delhi: Manohar, 1997. pp 186–195, 209–216

8. *Developing Language Skills 2*, Delhi: Doaba House, 1995. pp 76–88

9. *English at the Workplace*. Delhi: Macmillan, 2006. pp 38–42

10. *English at the Workplace II*. Delhi: Oxford University Press, 2007. pp 29–30

UNIT 3: Speaking & Listening–I

- Learning to use language according to situation: the difference between formal and informal;

- ways of socializing and showing politeness;
- expressions used for greetings and asking after, introducing oneself and others, thanking, wishing well, apologizing and excusing, asking for and giving information, making offers and requests and giving orders.

Readings:

11. *Developing Language Skills I*. Delhi: Manohar, 1997. pp 1–26

12. *English at the Workplace*. Delhi: Macmillan, 2006. pp 10–13

13. *English at the Workplace II*. Delhi: Oxford University Press, 2007. pp 5–8, 14–18.

GE Language Course 8: DEVELOPING ENGLISH LANGUAGE SKILLS – II

Credit: 4 (3 Theory+1 Tutorial/Internal Assessment)

Course objectives:

- This course is intended for students who have had inadequate exposure to English and hence exhibit a very low level of proficiency in the language–difficulty in comprehending simple texts, limited vocabulary, a poor grasp of basic syntactical structures, and an inability to speak or write the language with confidence.

The course that is spread over two semesters aims to redress these issues and aims to:

- enhance comprehension skills and enrich vocabulary through the reading of short and simple passages with suitable tasks built around these.
- introduce simple syntactical structures and basic grammar to students through contextualized settings and ample practice exercises so that they can engage in short independent compositions.
- introduce the sounds of the language and the essentials of English pronunciation to students in order to remove the inhibitions experienced by them while speaking English.
- acquaint students with social formulae used to perform various everyday functions so that they can converse in English in simple situations.

NOTE: The unit names are indicative only and identify core language areas that are targeted through the course. The learning of various language skills needs to happen in an integrated fashion. It is, therefore, imperative that for every unit, learners should work through the whole range of tasks in the prescribed readings.

Course content:

UNIT 1: Reading & Vocabulary–II

- Ways of expanding vocabulary;
- learning how to use a dictionary;
- understanding more text types such as argumentative and descriptive passages, poetry, character sketches, etc. through suitable activities based on selected texts

Readings:

1. *A Foundation English Course for Undergraduates*: Book III. Delhi: University of Delhi, 1993. pp 5–10, 27–29, 40–44, 81–83

2. *Developing Language Skills 2*. Delhi: Doaba House, 1995. pp 43–51

3. *Everyday English*. Delhi: Pearson, 2005. pp 36–43

4. *English at the Workplace II*. Delhi: Oxford University Press, 2007. pp 32–37, 46–48

UNIT 2: Writing & Grammar–II

- Understanding what constitutes a piece of good writing;
- learning to describe objects and processes, narrate incidents and stories, and argue a point of view.
- framing of questions and negative sentences;
- modals and their uses.

Readings:

5. *A Foundation English Course for Undergraduates*: Book II. Delhi: University of Delhi, 1992. pp 115–130

6. *A Foundation English Course for Undergraduates*: Book III. Delhi: University of Delhi, 1993. pp 126–136

7. *Developing Language Skills I*. Delhi: Manohar, 1997. pp 183–186, 206–209

8. *Developing Language Skills 2*. Delhi: Doaba House, 1995. pp 112–116

9. *English at the Workplace II* (Delhi: Oxford University Press, 2007) pp 49 – 52.

UNIT 3: Speaking & Listening–II

- Understanding the essentials of English pronunciation: word stress and rhythm in connected speech; speaking on the telephone;
- becoming a better listener;
- expressions used for getting and giving permission, agreeing and disagreeing, warning and persuading, inviting, suggesting, accepting and refusing, expressing likes and dislikes, regulating speech and ending a conversation.

Readings:

10. *Developing Language Skills I*. Delhi: Manohar, 1997. pp 26–45

11. *English at the Workplace*. Delhi: Macmillan, 2006. pp 52–57

12. *English at the Workplace II*. Delhi: Oxford University Press, 2007. pp 10–13, 20–24, 38–45

ANNEXURE IV

STRUCTURE OF GENERIC ELECTIVE PAPERS

ODD SEMESTERS

GE 1. Language and Culture

GE 2. Genre Fiction

GE 3. Dystopian Writings

GE 4. Literature & Human Rights

GE 5. Readings on Indian Diversities and Literary Movements

GE 6. Indian English Literatures

GE 7. Research Methodology

DETAILS OF GENERIC ELECTIVE PAPERS

ODD SEMESTERS

GE 1: Language and Culture

Credit: 4 (3 Theory+1 Tutorial/Internal Assessment)

Course Objectives:

- To familiarize students with the basic approaches to the study of language
- To impart a socio- cultural perspective to the study of English in the Indian context

Learning Outcomes:

- This course will enable students to analyze both the socio-cultural and formal aspects of language in general and English in particular.
- Students will be able to understand the shifting and evolving dynamics of the link between language and culture in India.

Course Content:

UNIT I-Language

1. Connor-Linton, Jeffrey, and Fasold, Ralph. 'Introduction', *An Introduction to Language and Linguistics*. United States: Cambridge University Press, 2006.

2. Fromkin, Victoria, Robert Rodman, and Nina Hyams. 'Part 1', *An Introduction to the Study of Language*. Boston, MA: Cengage, 2017.

3. Wardaugh, Ronald. Chapters 2 and 3, *An Introduction to Sociolinguistics*. Malden, MA: Blackwell, 2006.

4. Rodriques, M V. Chapters 2 and 6, *Perspectives of Communication and Communicative Competence*. India: Concept Pub, 2000.

UNIT II- English Language in India and Multilingualism

5. Jayendran, Nishevita, et al. Chapters 3, 5 and 6, *Language Education: Teaching English in India*. India: Taylor & Francis, 2021.

6. Mukherjee, Joybrato. 'The development of the English language in India', *The Routledge Handbook of World Englishes*. ed. A. Kirkpatrick, London and New York: Routledge, Taylor & Francis Group, 2000. pp 167-180

7. Bhatia, Tej K. 'The Multilingual Mind, Optimization Theory and Hinglish', *Chutnefying English: The Phenomenon of Hinglish. India.* ed. Rita Kothari & Rupert Snell, Penguin Books, 2011.

UNIT III: Language and Society

8. Wardaugh, Ronald. 'Gender', An *Introduction to Sociolinguistics*. Malden, MA: Blackwell, 2006.

9. Soden, Satori, et al. Chapter 5, 6, 8, 9, *Language, Society and Power: An Introduction*. Taylor & Francis, 2010.

10. Wilson, James C. and Cynthia Lewiecki-Wilson. 'Disability, Rhetoric, and the Body': *Embodied Rhetorics: Disability in Language and Culture*. United States: Southern Illinois University Press, 2001.

Suggested Readings:

1. Fowler, Roger. *The Linguistics of Literature*. London: Routledge and Kegan Paul Ltd, 1971.

2. Bailey, R. W. and J. L. Robinson, ed. *Varieties of present-day English*. New York: Macmillan, 1973.

3. Fishman, J.A. *Sociolinguistics: A Brief Introduction*. Mass: Newbury House Rowley, 1971.

4. Gupta R. S. and K. S. Agarwal, *Studies in Indian Sociolinguistics*. New Delhi: Creative Books, 1996.

5. 'Notes on the History of the Study of the Indian Society and Culture', *Structure and Change in Indian Society*, ed. Milton Singer and Bernard S Cohn. Chicago: Aldine Press, 1968.

6. 'Towards a Definition of Culture', *India and World Culture*. New Delhi: Sahitya Academy, 1986.

7. 'Culture and Ideology', *Culture, Ideology and Hegemony: Intellectual and Social Consciousness in Colonial India*. London and New York: Longman,1995.

8. Crystal, David. *The Stories of English*. UK: Penguin Books Limited, 2005.

9. Krishnaswamy, N., and Krishnaswamy, Lalitha. *The Story of English in India*. India: Foundation Books, 2006.

10. Crystal, David. *The Cambridge Encyclopedia of the English Language*. Cambridge: Cambridge University Press, 1995.

11.Mesthrie, Rajend, and Bhatt, Rakesh M. *World Englishes: The Study of New Linguistic Varieties*. United Kingdom: Cambridge University Press, 2008.

12. Marckwardt, Albert H. "English as a Second Language and English as a Foreign Language." *PMLA*, vol. 78, no. 2, 1963, pp 25–28.

13. Kramschin, Claire. *The Routledge Handbook of Language and Culture. United Kingdom, Taylor & Francis, 2014.*

GE 2: Genre Fiction

Credit: 4 (3 Theory+1 Tutorial/Internal Assessment)

Course Objectives:

- To understand how the evolving genre of fiction engages with contemporary social and cultural realities

- To understand the strategies of narrative and themes this specific genre of fiction uses

Learning Outcomes:

- This course will enable students to efficiently undertake textual analysis within the specific rubric of genre fiction
- Students will be informed about the aspects of of fictionality while engaging with popular culture

Course Content:

UNIT I:

1. Arthur Conan Doyle: *The Sign of Four*

UNIT II:

2. Kashigo Ishiguro: *Never Let Me Go*

UNIT III:

3. Ibn-e-Safi: *House of Fear*

4. Madulika Liddle: *Crimson City*

SUGGESTED READINGS:

1. H. Thomas Milhorn: *Writing Genre Fiction: A Guide to the Craft* (2006)

2. Beth Driscoll, Kim Wilkins, Lisa Fletcher: *Genre Worlds: Popular Fiction and Twenty-First-Century* (2022)

3. Joyce G. Saricks: *The Readers' Advisory Guide to Genre Fiction* (2009)

4. Jeremy Rosen: 'Literary Fiction and the Genres of Genre Fiction' Posted 8th July, 2018.

https://post45.org/2018/08/literary-fiction-and-the-genres-of-genre-fiction/

GE 3: Dystopian Writings

Credit: 4 (3 Theory+1 Tutorial/Internal Assessment)

Course Objectives:

- To familiarize students with the evolution of the literary trends/movements under Dystopian writings
- To analyse texts and identify the distinctions across prominent milieus and regions

Learning Outcomes:

- This course will enable students to understand what constitutes the genre of Dystopian Writings.
- This course will enable students to discern the shifting dynamics of reality and representation.

Course Content:

UNIT I:

1. Mary Shelley: *The Last Man*

UNIT II:

2. H.G. Wells: *The Time Machine*

UNIT III:

3. Malcolm Bradbury: *Fahrenheit 451*

SUGGESTED READINGS:

1. Stock, Adam. *Modern Dystopian Fiction and Political Thought: Narratives of World Politics*. United Kingdom: Taylor & Francis, 2018.

2. Gottlieb, Erika. *Dystopian Fiction East and West: Universe of Terror and Trial*. Maldives: McGill-Queen's University Press, 2001.

3. Basu, Balaka, et al. (ed.) *Contemporary Dystopian Fiction for Young Adults: Brave New Teenagers*. United States: Taylor & Francis, 2013.

4. Isomaa, Saija, et al. (ed.) *New Perspectives on Dystopian Fiction in Literature and Other Media*. United Kingdom: Cambridge Scholars Publishing, 2020.

5. Anthony, Ashley G., et al. (ed.) *Worlds Gone Awry: Essays on Dystopian Fiction*. United States: Incorporated Publishers, 2018.

GE 4: Literature & Human Rights

Credit: 4 (3 Theory+1 Tutorial/Internal Assessment)

Course Objectives:

- To consider the relationship between literature and human rights
- To indicate investments in human rights within literary texts

Learning Outcomes:

- This course will provide understanding of the relevance of human rights in everyday contexts.
- Students will be able to appreciate the importance of human rights in literary and theoretical terms.

Course Content:

UNIT I:

1. George Orwell: *1984*(1949)

UNIT II:

2. Harper Lee: *To Kill a Mockingbird* (1960)

UNIT III:

3. *Freedom: Short Stories Celebrating the Universal Declaration of Human Rights*. Amnesty International, 2009.

(i) 'In the Prison of Repose'—Paulo Coelho

(ii) 'Amnesty'—Nadine Gordimer

(iii) 'ABC Antidote'—Ishmael Beah

4. Maya Angelou: 'I Know Why the Caged Bird Sings'[poem]

5. June Millicent Jordan: 'Poem About My Rights'

SUGGESTED READINGS:

1. *The Universal Declaration of Human Rights*

https://www.un.org/en/udhrbook/pdf/udhr_booklet_en_web.pdf

2. Barzilay, Vered Cohen. 'Foreword: The Tremendous Power of Literature', *Freedom: Short Stories Celebrating the Universal Declaration of Human Rights*. Amnesty International, 2009.

3. Hunt, Lynn. *Inventing Human Rights: A History*. W.W. Norton, 2008.

4. Nickel, James W. *Making Sense of Human Rights: Philosophical Reflections on the Universal Declaration of Human Rights*. United Kingdom: University of California Press, 1987.

5. Tierney, Brian. *The Idea of Natural Rights: Studies on Natural Rights, Natural Law, and Church Law*, 1150-1625. United Kingdom: Eerdmans Publishing Company, 2001.

6. Rawls, John. T*he Law of Peoples: with "The Idea of Public Reason Revisited"*. United Kingdom: Harvard University Press, 1999.

7. Griffin, James. *On Human Rights*. United Kingdom: OUP, 2009.

GE 5: Readings on Indian Diversities and Literary Movements

Credit: 4 (3 Theory+1 Tutorial/Internal Assessment)

Course Objectives:

- To introduce the social and cultural history of India which were conducive to the development of art and literature
- To inculcate new ways to interpret, understand and read representations of diversity

Learning Outcomes:

- This course will help students read non-verbal social and cultural history.
- Students will be encouraged to be open to the diverse modes of thought.

Course Content:

UNIT I:

- Overview
- Linguistic Plurality within Sufi and Bhatia Tradition

UNIT II:

- Language Politics: Hindi and Urdu

- Tribal Verse
- Dalit Voices

UNIT III

- Writing in English
- Woman Speak: Examples from Kannada and Bangla
- Literary Cultures: Gujarati and Sindhi

Essential Reading:

1. Kumar, Sukrita Paul et al. (eds.). *Cultural Diversity, Linguistic Plurality, and Literary Traditions in India*. New Delhi: Macmillan, 2005.

GE 6: Indian English Literatures

Credit: 4 (3 Theory+1 Tutorial/Internal Assessment)

Course Objectives:

- To introduce literary texts from a range of regional, cultural, social, and political locations within India
- To inculcate an in-depth understanding of some of the major issues shaping this literary production

Course Outcomes:

- This course will help students to comprehend regional differences in the issues discussed and in socio-cultural contexts.
- Students will be enabled to analyze the use of the English language by non-native speakers and writers.

Course Content:

UNIT I

1. Vikram Seth: *A Suitable Boy*

UNIT II

2. Shashi Deshpande: ‘The Intrusion’

3. Salman Rushdie: 'The Courter'

4. Rohinton Mistry: 'Swimming Lessons'

5. Vikram Chandra: 'Dharma'

UNIT III

6. Kamala Das: (i) 'An Introduction' (ii) 'My Grandmother's House'

7. Nissim Ezekiel: (i) 'Night of the Scorpion' (ii) 'Goodbye Party for Miss Pushpa TS'

8. Arun Kolatkar: (i) 'The Bus'

9. Mamang Dai, 'The Sorrow of Women'

Suggested Readings:

1. Burton, Antoinette. *Dwelling in the Archive: Women Writing House, Home, and History in Late Colonial India*. Oxford UP, 2003.

2. Zecchini, Laetitia. *Arun Kolatkar & Literary Modernism in India: Moving Lines*. USA: Bloomsbury Academic, 2014.

3. Nerlekar, Anjali. *Bombay Modern: Arun Kolatkar and Bilingual Literary Culture*. Speaking Tiger, 2017.

4. Anjaria, Ulka. *Realism in the Twentieth-Century Indian Novel: Colonial Difference and Literary Form*. Cambridge UP, 2012.

5. Parashkevova, Vassilena. *Salman Rushdie's Cities: Reconfigurational Politics and the Contemporary Urban Imagination*. Bloomsbury, 2012.

GE 7: Research Methodology *(To be offered in Semester 6 and 7)*

Credit: 4 (3 Theory+1 Tutorial/Internal Assessment)

Course Objectives:

- To offer practical training in academic writing
- To introduce the basics of research methodology

Learning Outcomes:

- This course will help students acquire in-depth and practical knowledge regarding academic reading and writing.
- It will enable students to write a research paper as part of project work.

Course Content:

UNIT I:

1. Introduction to Practical Criticism

2. Conceptualizing and Drafting of a Research Proposal

UNIT II:

3. Style Manuals: Notes, References and Bibliography/Annotated Bibliography

UNIT III:

4. Workshop on Topic Development

5. Workshop on Research Proposal

Project Work: Writing a Research Paper (2000 to 2,500 words)

Practical: During classes, the workshop mode of teaching is to be favoured for units which indicate the same. In the tutorials, individual guidance is to be given to each student.

ESSENTIAL READINGS:

1. Flick, Uwe. *Introducing Research Methodology: A Beginner's Guide to Doing a Research Project.* New Delhi: Sage, 2017.

2. Leki, Ilona. *Academic Writing: Exploring Processes and Strategies*. 2nd edn. New York: CUP, 1998.

3. Dev, Anjana N (ed.). *Academic Writing and Composition.* New Delhi: Pinnacle, 2015.

4. Richards, I. A. *Practical Criticism: A Study of Literary Judgement*. New York: Harcourt Brace, 1929.

5. Bailey, Stephen. *The Essentials of Academic Writing for International Students.* London: Routledge, 2015.

6. Orwell, George. *Politics and the English Language*. United Kingdom: Sahara Publisher Books, 1946.

SUGGESTED READINGS:

1. Hamp-Lyons, Liz and Ben Heasley. *Study Writing: A Course in Writing Skills for Academic Purposes*. Cambridge: CUP, 2006.

2. Kumar, Ranjit, *Research Methodology: A Step by Step Guide for Beginners*. New Delhi: Sage, 2014.

3. Phanse, Sameer. *Research Methodology: Logic, Methods and Cases*. New Delhi:OUP, 2016.

4. Griffin, Gabrielle, ed. *Research Methods for English Studies.* 2nd edn. New Delhi: Rawat Publications. 2016 (Indian Reprint)

Department of Computer Science
University of Delhi

General Electives (GEs)

Offered by
Department of Computer Science
Under UGCF 2022

Approved in
UG Committee meeting held on May17, 2022
Faculty of Mathematical Sciences meeting held on May 25, 2022
Standing Committee on Academic Matters

1. Table of additional GEs

Table of additional GEs

Semester	GE -No.	Title	L	T*	P*	Total credits	Prerequisites
I	**GE1a**	Programming using C++	**3**	**0**	**1**	**4**	Pass in Class XII
	GE1b	Programming with Python	**3**	**0**	**1**	**4**	Pass in Class XII
II	**GE2a**	Data Analysis and Visualization using Python	**3**	**0**	**1**	**4**	A course in Python
	GE2b	Data Analysis and Visualization using Spreadsheet	**3**	**0**	**1**	**4**	Pass in Class XII
III	**GE3a**	Database Management Systems					Pass in Class XII
	GE3b	Java Programming					Pass in Class XII
IV	**GE4a**	Data Structures using C++	**3**	**0**	**1**	**4**	A course in C++
	GE4b	Introduction to Web Programming	**3**	**0**	**1**	**4**	Pass in Class XII
V	**GE5a**	Operating Systems	**3**	**0**	**1**	**4**	Knowledge of Programming and Data Structures

	GE5b	Advanced Web Programming	**3**	**0**	**1**	**4**	Knowledge of HTML, CSS
	GE5c	Java Based Web App Development	**3**	**0**	**1**	**4**	A course in C++/Java
VI	**GE6a**	Computer Networks	**3**	**0**	**1**	**4**	Knowledge of C/C++/Java/Python
	GE6b	Internet Technologies: Web App Design and Development	**3**	**0**	**1**	**4**	A course in C++/Java
	GE6c	Artificial Intelligence	**3**	**0**	**1**	**4**	Knowledge of any programming language, basics of Algorithms and Data structures
VII	**GE7a**	Information Security	**3**	**0**	**1**	**4**	Knowledge of Programming, Computer System Architecture, Database Management Systems, Data Structures, Algorithms, Operating systems, Computer Networks.
	GE7b	Design and Analysis of Algorithms					Knowledge of Programming and Data Structures
	GE7c	Internet Technologies : Mobile App Design and Development	**3**	**0**	**1**	**4**	A course in C++/Java
VIII	**GE8a**	Machine Learning	**3**	**1**	**0**	**4**	A course in probability, statistics, linear algebra and multivariate analysis
	GE8b	Digital Marketing	**3**	**0**	**1**	**4**	Python and HTML

		and Social Media Analytics (under preparation)					
	GE8c	Introduction to Parallel Programming	**3**	**1**	**0**	**4**	Knowledge of Computer System Architecture, C++, Knowledge of Basic Data Structures and Algorithms, Operating Systems

Note:

1. Wherever C++/Java/Python is a prerequisite, C++/Java/Python of plus 2 level is acceptable.
2. Batch size for Practicals will be (8-10) and Tutorials will be (12-15).

It was recommended to add more electives in Semester VII and VIII in due course of time.

GE1a: Programming using C++

Course Objective

This course is designed to develop structured as well as object-oriented programming skills using C++ programming language. The course provides a complete understanding of the object-oriented programming features, namely Encapsulation, Abstraction, Inheritance and Polymorphism along with an in-depth knowledge of C++ constructs.

Course Learning Outcomes

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

1. Explain significance of object oriented paradigm.
2. Solve programming problems using C++.
3. Create classes and reuse them.

Syllabus

Unit 1 Introduction to C++: Overview of Procedural and Object-Oriented Programming, Using main() function, Header Files, Compiling and Executing Simple Programs in C++.

Unit 2 Programming Fundamentals: Data types, Variables, Operators, Expressions,

Arrays, Keywords, Decision making constructs, Iteration, Type Casting, Input-output statements, Functions, Command Line Arguments/Parameters

Unit 3 Object Oriented Programming: Concepts of Abstraction, Encapsulation. Creating Classes and objects, Modifiers and Access Control, Constructors, Destructors, Implementation of Inheritance and Polymorphism, Template functions and classes

References

1. Stephen Prata, *C++ Primer Plus*, 6th Edition, Pearson India, 2015.
2. E Balaguruswamy, *Object Oriented Programming with C++*, 8th edition, McGraw-Hill Education, 2020.
3. D.S. Malik, *C++ Programming: From Problem Analysis to Program Design*, 6th edition, Cengage Learning, 2013.

Additional References

(i) Herbert Schildt, C++: *The Complete Reference*, 4th edition, McGraw Hill, 2003.
(ii) A. B. Forouzan, Richard F. Gilberg, Computer Science: *A Structured Approach using C++,* 2nd edition, Cengage Learning, 2010.

Suggested Practical list

1. Write a program to compute the sum of the first n terms of the following series:

   S = 1 - 2 + 3 - 4 + … n

   The number of terms n is to be taken from the user through the command line. If the command line argument is not found then prompt the user to enter the value of n.

2. Write a program to display the following pattern:

   1

   22

   333

   4444

   55555

   The number of rows n, is to be taken from the user.

3. Write a program to compute the factors of a given number.

4. Write a menu driven program to perform the following operations on an array:
    a. Find the minimum, maximum and average of the array elements
    b. Search an element in the array using linear and binary search
5. Write a menu driven program to perform the following operations on a string:
    a. Calculate length of the string
    b. Check whether the first character of every word in the string is in uppercase or not
    c. Reverse the string
6. Create a class Triangle. Include overloaded functions for calculating the area of a triangle.
7. Create a template class TwoDim which contains x and y coordinates. Define default constructor, parameterized constructor and void print() function to print the co-ordinates. Now reuse this class in ThreeDim adding a new dimension as z. Define the constructors and void print() in the subclass. Implement main() to show runtime polymorphism.

GE1b: Programming with Python

Course Objective

This course is designed as the first course that introduces programming concepts using Python to students. The course focuses on the development of Python programming to solve problems of different domains. It also introduces the concept of object- oriented programming.

Course Learning Outcomes

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

1. Understand the basics of programming language
2. Develop, document, and debug modular Python programs.
3. Apply suitable programming constructs and built-in data structures to solve a

problem.

4. Use and apply various data objects in Python.
5. Handle files

Syllabus

Unit 1 Introduction to Programming: Problem solving strategies; Structure of a Python program; Syntax and semantics; Executing simple programs in Python.

Unit 2 Creating Python Programs: Identifiers and keywords; Literals, numbers, and strings; Operators; Expressions; Input/output statements; Defining functions; Control structures (conditional statements, loop control statements, break, continue and pass, exit function), default arguments.

Unit 3 Built-in data structures: Mutable and immutable objects; Strings, built-in functions for string, string traversal, string operators and operations; Lists creation, traversal, slicing and splitting operations, passing list to a function; Tuples, sets, dictionaries and their operations.

Unit 4 File and exception handling: File handling through libraries; Errors and exception handling.

References

1. Taneja, S., Kumar, N., *Python Programming- A modular Approach*, Pearson Education India, 2018.
2. Balaguruswamy E., *Introduction to Computing and Problem Solving using Python,* 2nd edition, McGraw Hill Education, 2018.

Additional References

(i) Brown, Martin C., *Python: The Complete Reference*, 2nd edition, McGraw Hill Education, 2018.

(ii) Guttag, J.V. *Introduction to computation and programming using Python,* 2nd edition, MIT Press, 2016.

Suggested Practical List

1. WAP to find the roots of a quadratic equation.
2. WAP to accept a number ‘n’ and
    a. Check if ’n’ is prime
    b. Generate all prime numbers till ‘n’
    c. Generate first ‘n’ prime numbers
    d. This program may be done using functions.
3. WAP to create a pyramid of the character ‘*’ and a reverse pyramid

```
    *
   ***
  *****
 *******
*********
```

```
*********
 *******
  *****
   ***
    *
```

4. WAP that accepts a character and performs the following:
    a. print whether the character is a letter or numeric digit or a special character
    b. if the character is a letter, print whether the letter is uppercase or lowercase
    c. if the character is a numeric digit, prints its name in text (e.g., if input is 9, output is NINE)
5. WAP to perform the following operations on a string
    a. Find the frequency of a character in a string.
    b. Replace a character by another character in a string.
    c. Remove the first occurrence of a character from a string.
    d. Remove all occurrences of a character from a string.
6. WAP to swap the first n characters of two strings.

7. Write a function that accepts two strings and returns the indices of all the occurrences of the second string in the first string as a list. If the second string is not present in the first string then it should return -1.
8. WAP to create a list of the cubes of only the even integers appearing in the input list (may have elements of other types also) using the following:
    a. 'for' loop
    b. list comprehension
9. WAP to read a file and
    a. Print the total number of characters, words and lines in the file.
    b. Calculate the frequency of each character in the file. Use a variable of dictionary type to maintain the count.
    c. Print the words in reverse order.
    d. Copy even lines of the file to a file named ‘File1’ and odd lines to another file named ‘File2’.
10. Write a function that prints a dictionary where the keys are numbers between 1 and 5 and the values are cubes of the keys.
11. Consider a tuple t1=(1, 2, 5, 7, 9, 2, 4, 6, 8, 10). WAP to perform following operations:
    a. Print half the values of the tuple in one line and the other half in the next line.
    b. Print another tuple whose values are even numbers in the given tuple.
    c. Concatenate a tuple t2=(11,13,15) with t1.
    d. Return maximum and minimum value from this tuple
12. WAP to accept a name from a user. Raise and handle appropriate exception(s) if the text entered by the user contains digits and/or special characters.

GENERIC ELECTIVE (GE) COURSES
GENERAL MANAGEMENT
1. MANAGEMENT WISDOM FROM INDIA

Course Objectives: This course aims to bring management education and research in India in line with its needs to tackle contemporary challenges and develop management models that are rooted in India's spiritual and cultural ethos. This course attempts to highlight relevant contemporary issues.

Learning Outcomes: At the end of this course, students should be able to:

1. Have a deeper understanding of the various theories, concepts and ideas that constitute 'received knowledge' of Indian Management.
2. See how to compare and contrast Indian management thought with Western concepts.
3. Apply Indian management thought more effectively in an organisation setting.
4. Understand how Indian thoughts help enable growth and development of the self, organisations, society and environment in the present as well as future context.

Course Contents:

Unit 1: Indian Wisdom (3 Weeks)

Understand the principles of materialism (abhyudhaya), spiritualism (nisreyasa), nivṛtti (spiritual contemplation), pravṛtti (worldly duties), coexistence (loka sagraham), cohesion (samanva), arkashastra (Analysis, Reasoning, Argumentation), Diversity Management (Anekanthavada). Relevance of Gurukul concepts in modern corporate world - shadowing, mentoring and coaching; Roots of Indian wisdom - welfare-oriented economy based on moral values. Using Indian wisdom to solve modern management problems.

Unit 2: Management Paradigms from Ancient Texts (4 Weeks)

Relevant concepts: Spiritual dimensions, Karma, Organisation tension, Positive thinking, Integrity, Leadership, Work Ethic. Management learnings from the Bhagavad Gita. Interpersonal Relations in Ramayana and Mahabharata. Pauranic Jagruti and Tourism Management. Management principles from the Guru Granth Sahib. Management learning and Organisational Policies from the Thirukural. Government administration from Kautilya's Arthasastra. Learnings from a study of Manusmriti.

Unit 3: Indian Management Practices (5 Weeks)

Uniquely Indian business scenarios – population density, crowd behaviour, role of the unorganized sector in trade and commerce, or cultural issues in business, infrastructure development, public private partnerships and regulation, how taxation drives business behaviour, logistics management, saving habits of Indians. Indian business practices-Community-based Business Management (Chettiars in Tamil Nadu, Marwaris of Rajasthan, Angadias of Gujarat), Indian family business management, community level success stories-Gupta empire, Gujarati, Marwari, Punjabi traders. Studying Indian business success stories

such as Dabbawallas, Amul, Swachh Bharat, Atmanirbhar Bharat, PLI scheme initiatives, Indian corporates working abroad, success of Indians as individuals abroad in domains such as IT, Merchant Navy, Higher Education, Medicine

Unit 4: Future for Indian Management Thoughts (3 Weeks)

Indian models like OSHA, Theory K and Corporate Rishi Model. Management education should be based on four Ds (decision, direction, determination and dedication) and four Es (explore, experience, enjoy and excel) in students. Indian perspectives on sustainability, creativity, interpersonal skills, business ethics, environment friendly.

References:

1. Srinivasan, V.: New Age Management Philosophy from Ancient India. Lotus.
2. Peetham, Sri Sharada: Ancient Wisdom for Modern Management. Springer.
3. Bansal, Ipshita: Management Concepts In Ancient Indian Psycho-Philosophic Thought. Wisdom-Banasthali Vidyapith.
4. Sharma, Subhash: Indian Management. New Age International.
5. Swami Ranganathananda, (2001), "Universal Message of the Bhagavad Gita", 3 Volumes, Advaita Ashrama, Kolkata.
6. Swami Dayananda Saraswati, (2007), "The value of values", Arsha Vidya Research & Publication Trust, Chennai.

Additional Readings:

1. Mahadevan, B. Writings on Gita & Management, http://www.iimb.ernet.in/webpage/b- mahadevan/bhagavad- gita- amp- management.
2. Swami Chinmayananda, (1996), "Holy Geeta", Central Chinmaya Mission Trust, Mumbai.
3. Bhattathiri, M.P. "Bhagavad Gita and Management".
4. Houston, D.J. and Cartwright K.E. (2007), "Spirituality and Public Service". Public Administration Review, Jan. – Feb., 2007, 88 – 102.
5. Poole, E. (2007). "Organizational Spirituality – A literature review", Journal of Business Ethics, 84, pp. 577 – 588.
6. Mahadevan, B., (2013). "Inspirational Leadership: Perspectives from Gītā", Chapter 13 in Sanskrit and Development of World Thought, Kutumba Sastry V. (Ed.), D K Print World, New Delhi, pp 199 - 210.
7. Ehrenfeld, J. R. (2005). "The Roots of Sustainability", MIT Sloan Management Review, 46 (2), pp. 23- 25.

Teaching – Learning Process:

The teaching-learning process for this paper would include classroom lectures; Case study discussions; class presentations; Interactive sessions; Workshops; Tutorials and Role playing.

Assessment
Total Marks: 100
Internal Assessment: 25 Marks
End Semester University Exam: 75 Marks
The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Key Words
Indian Management; Ancient Wisdom; Arthashastra; Gurukul; Indian Management Thought

Notes:

1. https://cessedu.org/sites/cessedu.org/files/National%20Workshop%20on%20Bharatiya%20Management.pdf
2. https://www.iimb.ac.in/sites/default/files/inline-files/MPBG%20Course%20Outline_0_1.pdf
3. https://www.icsi.edu/media/webmodules/linksofweeks/ICSI-June_2020.pdf
4. https://mibrand.my/the-jewels-of-ancient-indian-management-principles/
5. https://www.exoticindiaart.com/book/details/ancient-wisdom-for-modern-management-nae442/
6. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1060.4608&rep=rep1&type=pdf
7. https://www.goodreads.com/book/show/7151578-new-age-management-philosophy-from-ancient-indian-wisdom
8. https://www.ibpbooks.com/ethics-in-management-insights-from-indian-wisdom/p/34617
9. https://www.delhibusinessreview.org/v_2n1/dbrv2n1e.pdf
10. https://globaljournals.org/GJMBR_Volume17/2-Management-Practices-in-the-Ancient.pdf
11. https://www.sciencedirect.com/science/article/pii/S0970389614000135

3. FINANCE FOR NON-FINANCE EXECUTIVES

Course Objective: To familiarize non finance executives with the essentials of finance and investments.

Course Learning Outcomes

- Understand Investment Environment and concept of Return & Risk.
- Analyze bond valuation & role of credit rating agencies.
- Examine equity analysis approaches.
- Understand two securities portfolio using Harry Markowitz model and understand CAPM.
- Familiarize with Investors' protection framework.

Course Contents

Unit 1: Introduction to Finance (3 Weeks)

Introduction to Financial Management: Concept and Importance of Finance Function, Objectives of Financial Management, Financial Decisions and their Risk-Return Trade-off. Time Value of Money – Concept and Rationale, Compounding & Discounting to obtain Future and Present values. Types of Risks and Returns. Sources of Finance.

Unit 2: Investment Decisions (4 Weeks)

Concept and Importance of Capital Budgeting, Objectives and Problems in Capital Budgeting, Types of Investment Projects and kinds of Investment Decisions, Capital Budgeting Process. Investment Evaluation Techniques: Pay Back Period, Discounted Payback Period, Net Present Value, Profitability Index, Internal Rate of Return. Selection of suitable evaluation technique.

Unit 3: Financing Decisions (4 Weeks)

Cost of Capital: Concept, Cost of Debt Capital, Cost of Preference Share Capital, Cost of Equity Share Capital, Weighted Average Cost of Capital (WACC). Leverage Analysis: Meaning of Leverage; Operating Leverage, Financial Leverage, and Combined Leverage. Capital Structure (Theory only): Concept, Factors affecting Capital Structure, Capital Structure Theories: Net Income Approach, Net Operating Income Approach, and Traditional Approach.

Unit 4: Dividend Decisions and Working Capital Management (4 Weeks)

Dividend Decisions: Concept, Relevance of Dividend Decisions: Walter's Model and Gordon's Model. Types of Dividends, Dividend Policies and factors determining the Dividend policy. Working Capital Management (Theory only): Concept and need for Working Capital, Types of Working Capital and factors affecting Working Capital requirements.

References

- Fundamentals of Financial Management: with Excel application supplement, Surender Singh and Rajeev Kaur, Mayur Paperbacks.
- Bhargav, B, K, *Finance For Non-Finance Managers.* Jaiko Publishing House.
- Chandra, P. Finance Sense: *Finance For Non-Finance executives.* Tata McGraw Hill.
- Tripathi, Vanita, *Basic Financial Management"* Taxmann Publication.

Additional References

- Chandra, P. *Financial Management – Theory and Practice.* Tata McGraw Hill.
- Tripathi, Vanita, *Fundamentals of Investments.* Taxmann Publication.
- Gabriel Hawawini, Claude Viallet, *Finance For Non-Finance Managers*, Cengage Delmar Learning India Pvt Ltd.
- Gene Siciliano ,*Finance for Nonfinancial Managers*, (Briefcase Books Series), Tata McGraw Hill.

Teaching – Learning Process

As the course is designed to familiarize non finance executives with the essentials of finance, the teaching learning process will be based on lectures, project work/field work and cases studies.

Assessment

Total Marks: 100
Internal Assessment: 25 Marks
End Semester University Exam: 75 Marks
The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Key Words

Time Value of Money, Risk, Return, Financial Statements, Financial Ratio Analysis, Capital Budgeting, Cost of Capital, Capital Structure, Dividend Decision, Working Capital Decision.

5. WEALTH MANAGEMENT

Course Objectives: To familiarize students with the essential concepts and fundamentals of financial investments. The course will enable them to understand and make informed choice about the various available financial investment alternatives.

Learning Outcomes: On successful completion of his course, the students will be able to:

- Provide an overview of various aspects related to wealth management.
- Understand the fundamentals of financial investments and the investment decision process.
- Able to compute various measures of risk and return, and understand their role for evaluating investments.
- Understand and carry out security analysis using different approaches.
- Learn basic approaches to managing portfolios.

Course Contents

Unit 1: Basics of Wealth Management and Investments (3 Weeks)

Introduction to Wealth Management, Need for Wealth Management, Components of Wealth Management, Process of Wealth Management. Concept of Investment, Financial Investment Vs. Real Investment, Investment Vs. Speculation, Objectives or Features of Investment, Risk Return Trade Off, Investment Environment – Overview of Securities Market and Different Types of Financial Investment. Investment Decision Process, Direct Investing Vs Indirect Investing, Approaches to Investing – Active Vs Passive.

Unit 2: Risk – Return Analysis (4 Weeks)

Concepts of Return and Risk, Types of Return (their calculation & utility): Absolute Return, Average Return, Expected Return, Holding Period Return, Effective Annualized Return, Portfolio Return, Risk-Adjusted Return. Causes (or Sources) and Types of Risk – Systematic and Unsystematic Risk, Components of Systematic and Unsystematic Risk. Calculation of Total, Systematic and Unsystematic Risk. Impact of Taxes and Inflation on Investment – Computation of Post Tax and Real Returns.

Unit 3: Security Analysis (4 Weeks)

Approaches to Security Analysis – Fundamental Analysis, Technical Analysis, and Efficient Market Hypothesis (EMH). Fundamental Analysis – EIC Framework, Economic Analysis, Industry Analysis, and Company Analysis. Technical Analysis – Basic Tenets of Technical Analysis, Tool of Technical Analysis – Charts, and Technical Indicators, Limitations of Technical Analysis. Difference between Fundamental Analysis and Technical Analysis.

Unit 4: Portfolio Management & Estate Planning (4 Weeks)

Traditional portfolio management for individuals: Objectives, constraints, time horizon, current wealth, tax considerations, liquidity requirements, and anticipated inflation. Asset allocation: Asset allocation pyramid, investor life cycle approach. Portfolio management services: Passive – Index funds, systematic investment plans. Active – market timing, style investing. Portfolio Analysis – Portfolio Risk and Portfolio Return. Estate Planning – Fundamentals of Estate Planning, Impact of Property Ownership and Beneficiary Designations, Estate Planning Documents, and Executing Basic Estate Planning.

Text Books:

1. Tripathi, Vanita: Security Analysis and Portfolio Management. Taxmann Publications.
2. Chandra, Prasanna: Investment Analysis and Portfolio Management. McGraw Hill Education.

Additional Readings:

1. Randall S. Billingsley, Lawrence J. Gitman, and Michael D. Joehnk (2017): Personal Financial Planning. Cengage Learning.
2. Susan M. Tillery, and Thomas N. Tillery: Essentials of Personal Financial Planning. Association of International Certified Professional Accountants.
3. Singh, Rohini (2017): Security Analysis and Portfolio Management (2nd Edition). Excel Books.

Teaching – Learning Process:

Class room lecture, Numerical Problem solving, Case study discussion, Class presentation on the assigned topic by students individually or in group, Workshop, Tutorials, Role play.

Assessment

Total Marks: 100
Internal Assessment: 25 Marks
End Semester University Exam: 75 Marks
The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Key Words:

Wealth Management, Financial Investments, Risk and Return, Fundamental Analysis, Technical Analysis, Portfolio Management, Estate Planning.

7. FUNDAMENTALS OF MARKETING MANAGEMENT

Course Objective: This course aims to familiarize students with the marketing function in organizations. It will equip the students with understanding of the Marketing Mix elements and sensitize them to certain emerging issues in Marketing.

Learning Outcomes: Students will be able to
1. Understand the concept of marketing and related concepts.
2. An in-depth understanding to various elements marketing mix for effective functioning of an organization.
3. Learn some of the tools and techniques of marketing with focus on Indian experiences, approaches and cases.

Course Contents:

Unit 1: Introduction and Marketing Environment (4 Weeks)
Introduction: Nature, Scope and Importance of Marketing, Evolution of Marketing; Core marketing concepts; Company orientation - Production concept, Product concept, Selling concept, Marketing concept, Holistic marketing concept. Marketing Environment: Demographic, Economic, Political, Legal, Socio cultural, Technological environment (Indian context); Portfolio approach – Boston Consulting Group (BCG) matrix.

Unit 2: Segmentation, Targeting and Positioning and Product Decisions (4 Weeks)
Segmentation, Targeting and Positioning: Concept; Levels of Market Segmentation, Basis for Segmenting Consumer Markets; Product decisions: Concept of Product Life Cycle (PLC), PLC marketing strategies, Product Classification, Product Line Decision, Product Mix Decision, Branding Decisions, Packaging & Labelling.

Unit 3: Pricing, Promotion and Marketing Channel Decisions (4 Weeks)
Pricing Decisions: Determinants of Price, Pricing Methods (Non-mathematical treatment), Adapting Price. Promotion Decisions: Factors determining promotion mix, Promotional Tools – Fundamentals of advertisement, Sales Promotion, Public Relations & Publicity and Personal Selling. Marketing Channel Decision: Channel functions, Channel Levels, Types of Intermediaries: Wholesalers and Retailers.

Unit 4: Marketing of Services (3 Weeks)
Marketing of Services: unique characteristics of services, marketing strategies for service firms – 7Ps.

Text Books:
1. Kotler, P., Armstrong, G., Agnihotri, P. Y., & Ul Haq, E.: Principles of Marketing: A South Asian Perspective, Pearson.
2. Kotler, P. & Keller, K. L.: Marketing Management, Pearson. (15th Edition)

Additional Readings:

1. Ramaswamy, V.S. & Namakumari, S.: Marketing Management: Global Perspective – Indian Context, Macmillan Publishers India Limited.

Teaching – Learning Process:

Lectures, Presentations, Case studies, Test/Quiz, Term paper on a given topic.

Assessment

Total Marks: 100
Internal Assessment: 25 Marks
End Semester University Exam: 75 Marks
The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Key Words

Consumer, Segmentation, Targeting, Positioning, Product, Price, Promotion, Place.

9. FUNDAMANTALS OF ORGANISATIONAL BEHAVIOUR

Course Objective(s): The course seeks to explain the concepts in Organisational behaviour and apply its concepts to improve the understanding of human behaviour for enhancing the functioning of an organizational unit.

Learning Outcomes: At the completion of the course students will be able to:

1. Identify and define organisational behaviour concepts.
2. Explain how individual differences—such as personalities, perceptions, and learning affect employee performance.
3. Analyse motivation and leadership styles and determine their effectiveness in employee situations.
4. Develop an understanding of group behaviour and group dynamics.

Course Contents:

Unit 1: Fundamental Concepts in OB (4 Weeks)

Importance and Key concepts in OB. Perception, Factors affecting Perception, Perceptual Process, and Errors in Perception. Personality: Concept and Factors affecting personality. Learning: Concept and Theories of Learning, Concept of Reinforcement.

Unit 2: Motivation and Interpersonal Relations (4 Weeks)

Motivation: Concepts and their application, Content theories (Maslow and Herzberg's Theories); Process theories (Expectancy theory). Managing Interpersonal Relationships; Transactional Analysis; Ego states, Types of Transactions, Importance of Transactional Analysis. Johari window.

Unit 3: Group Processes and Leadership at Work (4 Weeks)

Leadership: Trait Approach, Behavioural theories (Ohio and Michigan State Studies, and Blake & Mouton's Managerial grid), and Concept of Situational/Contingency approach to Leadership. Groups: Definition Stages of Group Development, Group Processes-Group Cohesiveness.

Unit 4: Organizational Dynamics of Politics, Conflict and Change (3 Weeks)

Organisational Power: Concept, Sources of Power, Tactics to gain power in Organizations. Conflict: Concept, Sources, Types, Stages of conflict, Management of conflict. Organisational Change: Concept, Resistance to change, managing resistance to change, Implementing Change.

Readings

1. Stephen P. Robbins, T. A. Organisational Behavior. Pearson.

2. Aswathappa, K., & Reddy, G. S. (2009). Organisational behaviour . Mumbai: Himalaya Publishing House.
3. Luthans Fred, Organisational Behaviour, Tata Mc Graw Hill.
4. Singh Kavita, Organisational Behaviour, Pearson.
5. Greenberg Jerald and Baron Robert A.: Behavior in Organisations: Understanding and Managing Human side of work, Prentice Hall of India

Note: Latest edition of the readings may be used.

Teaching – Learning Process

Lectures, Presentations, Case Studies, Class Discussions.

Assessment

Total Marks: 100
Internal Assessment: 25 Marks
End Semester University Exam: 75 Marks
The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Key Words

Organisation, Motivation, Leadership, Conflict, Behaviour, Learning, Perception, Personality.

11. DYNAMICS OF START-UPS

Course Objective: To give the students an overview of entrepreneur and its types that would help students to understand basics of starting up new ventures, start-ups. The challenges they could face while starting up with new business. To enable students to explore, launch entrepreneurial ventures in their own areas of interest.

Learning Outcomes: After successful compilation of the course students will be able to:

- Understand the process and nature of entrepreneurship.
- Identify the different ways in which entrepreneur manifests in start-ups.
- Evaluate the feasibility of pursuing the opportunity recognized.
- Know how to create one's own business venture and the various factors that influence successful set-up and sustainable operations.

Course Contents:

Unit 1: Entrepreneurship Journey (3 Weeks)

Meaning of entrepreneur, types of entrepreneurs, making of an entrepreneur, role of innovation and creativity for start-ups, start-up opportunities, creativity: role of creative thinking in development and growth of new venture in India. Challenges in starting start-ups.

Unit 2: Business Setup (4 Weeks)

Characteristics of opportunity, where to look for opportunities, from identification to evaluation, forms of ownership and suitability, different modes of generating ideas**,** identification of opportunities: idea generation, selection and implementation, search for new ideas: techniques for generating ideas: scamper, brainstorming, mind mapping, storyboarding, role playing. Entry strategies: new product, franchising, buying an existing firm.

Unit 3: Feasibility and Resource Mobilisation (5 Weeks)

Feasibility analysis: marketing, technical and financial feasibility analysis, industry and competition analysis, assessing new venture, economic environment and socio-economic feasibility of the venture. Resource mobilization for entrepreneurship: what is resource, resources mobilization, types of resources, process of resource mobilization, sources of financing.

Unit 4: Scaling-up of Business and Entrepreneurship Ecosystem (3 Weeks)

Scaling ventures – preparing for change, harvesting mechanism and exit strategies, managing growth, reasons for new venture failures, the entrepreneurial ecosystem, business incubators, entrepreneurship in India. Government initiatives, government grant and subsidies.

References:

1. Scarborough, N. M., Cornwall, J. R., & Zimmerer, T. (2016). Essentials of entrepreneurship and small business management. Boston: Pearson.
2. Hisrich, R.D., Manimala, M.J., Peters, M.P., Shepherd, D.A.: Entrepreneurship, Tata McGraw Hill.

3. M.B. Shukla . Entrepreneurship and Small Business Management : Kitab Mahal Publishers.

Additional Readings

1. R.D. Hishrich., Peters, M., Entrepreneurship: Irwin, (latest edition)
2. Barringer, B.R. and R. Duane Ireland, Entrepreneurship, (latest edition) Pearson Prentice Hall
3. Kuratko, D.F., and Rao, T. V., Entrepreneurship: A South-Asian Perspective, (latest edition) Cengage
4. Shankar, R., Entrepreneurship Theory and Practice, (latest edition) Tata McGraw Hill.
5. Kathleen R Allen, Launching New Ventures, An Entrepreneurial Approach, Cengage Learning.
6. Steven Fisher, Ja-nae Duane, The Startup Equation -A Visual Guidebook for Building Your Startup, Indian Edition, Mc Graw Hill Education India Pvt. Ltd.

Teaching Learning Process:

Class room lecture, case study discussion, presentation on the assigned topic by students individually or in group, workshop, tutorials, role play and videos.

Assessment

Total Marks: 100
Internal Assessment: 25 Marks
End Semester University Exam: 75 Marks
The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Key Words

Entrepreneurship Process, Start-up Idea, Entrepreneurial Venture, Business Incubators.