

# **Scheme of Bachelor of Arts (Computer Science)**

## **Batch 2026 onwards**



Department of Academics  
**IK Gujral Punjab Technical University**

## **Program Outcomes (POs)**

### **PO1: Disciplinary Knowledge**

Acquire comprehensive knowledge of Computer Science, Humanities, Social Sciences, and interdisciplinary subjects to solve academic and real-life problems.

### **PO2: Critical Thinking and Problem Solving**

Analyse problems logically, evaluate alternatives, and develop effective and innovative solutions using appropriate tools and technologies.

### **PO3: Digital Competency**

Demonstrate proficiency in computer applications, programming, web technologies, office automation, artificial intelligence, cybersecurity, and digital communication.

### **PO4: Communication Skills**

Communicate effectively in English, Punjabi, and digital platforms through oral, written, and presentation skills for academic and professional purposes.

### **PO5: Ethical Values and Social Responsibility**

Apply ethical principles, human values, environmental awareness, constitutional values, and professional responsibility in personal and professional life.

### **PO6: Research and Innovation**

Develop the ability to identify problems, collect and analyse information, conduct basic research, and encourage innovation and entrepreneurship.

### **PO7: Teamwork and Leadership**

Work effectively as an individual and as a member or leader of multidisciplinary teams while demonstrating leadership and interpersonal skills.

### **PO8: Lifelong Learning**

Recognize the need for continuous learning, skill enhancement, adaptability, and professional development to meet changing technological and societal needs.

### **PO9: Employability**

Develop technical, analytical, and managerial competencies that enhance employability and in the IT and service sectors.

### **PO10: Sustainable Development and Global Citizenship**

Contribute responsibly towards sustainable development, digital citizenship, inclusiveness, and global societal well-being through informed decision-making.

### SEMESTER I

| S No | Course Code | Course Type               | Course Title                                                       | Load Allocation |          |          | Marks Distribution |            | Total Marks | Credits   |
|------|-------------|---------------------------|--------------------------------------------------------------------|-----------------|----------|----------|--------------------|------------|-------------|-----------|
|      |             |                           |                                                                    | L               | T        | P        | Internal           | External   |             |           |
| 1    | BACS-101    | Core Theory               | General English - I                                                | 3               | 0        | 0        | 40                 | 60         | 100         | 3         |
| 2    | BACS-102    | Core Theory               | General Punjabi – I                                                | 3               | 0        | 0        | 40                 | 60         | 100         | 3         |
| 3    | BACS-103    | Core Theory               | Introduction to computers and office automation                    | 3               | 0        | 0        | 40                 | 60         | 100         | 3         |
| 4    | BACS-104    | Core Practical/Laboratory | Introduction to Information Technology and Office Automation (Lab) | 0               | 0        | 2        | 60                 | 40         | 100         | 1         |
| 5    | BACS-***    | Elective I (MINOR)        |                                                                    | 4               | 0        | 0        | 40                 | 60         | 100         | 4         |
| 6    | BACS-***    | Elective I (MINOR)        |                                                                    | 4               | 0        | 0        | 40                 | 60         | 100         | 4         |
| 7    | HVPE 101-18 | (AECC)                    | Human Values, Deaddiction and Traffic Rules                        | 3               | 0        | 0        | 40                 | 60         | 100         | 3         |
| 8    | HVPE 102-18 | (AECC)                    | Human Values, Deaddiction and Traffic Rules (Lab/ Seminar)         | 0               | 0        | 1        | 25                 | 0          | 25          | 1         |
|      |             | <b>Total</b>              |                                                                    | <b>20</b>       | <b>0</b> | <b>3</b> | <b>325</b>         | <b>400</b> | <b>725</b>  | <b>22</b> |

Elective Subject: I

(Any Two)

| Course Code | Course Title           |
|-------------|------------------------|
| BACS-111    | History – I            |
| BACS-112    | Political Science – I  |
| BACS-113    | Mathematics – I        |
| BACS-114    | Elective English – I   |
| BACS-115    | Economics – I          |
| BACS-116    | Elective Punjabi - I   |
| BACS-117    | Sociology - I          |
| BACS-118    | Elective Computer – I  |
| BACS-119    | Physical Education – I |

## SEMESTER II

| S No | Course Code | Course Type               | Course Title                     | Load Allocation |          |          | Marks Distribution |            | Total Marks | Credits   |
|------|-------------|---------------------------|----------------------------------|-----------------|----------|----------|--------------------|------------|-------------|-----------|
|      |             |                           |                                  | L               | T        | P        | Internal           | External   |             |           |
| 1    | BACS-201    | Core Theory               | General English - II             | 3               | 0        | 0        | 40                 | 60         | 100         | 3         |
| 2    | BACS-202    | Core Theory               | General Punjabi – II             | 3               | 0        | 0        | 40                 | 60         | 100         | 3         |
| 3    | BACS-203    | Core Theory               | MS-Excel and Data Management     | 3               | 0        | 0        | 40                 | 60         | 100         | 3         |
| 4    | BACS-204    | Core Practical/Laboratory | MS-Excel and Data Management Lab | 0               | 0        | 2        | 60                 | 40         | 100         | 1         |
| 5    | BACS-***    | Elective II (MINOR)       |                                  | 4               | 0        | 0        | 40                 | 60         | 100         | 4         |
| 6    | BACS-***    | Elective II (MINOR)       |                                  | 4               | 0        | 0        | 40                 | 60         | 100         | 4         |
| 7    | UGVAC2502   | VAL                       | Indian Constitution              | 2               | 0        | 0        | S/U                | NA         | NA          | 1         |
| 8    | UGSEC2509   | SEC                       | Design Thinking and Innovation   | 1               | 0        | 0        | S/U                | NA         | NA          | 1         |
|      |             | <b>Total</b>              |                                  | <b>20</b>       | <b>0</b> | <b>2</b> | <b>260</b>         | <b>340</b> | <b>600</b>  | <b>20</b> |

### Elective Subject: II

(Any Two)

| Course Code | Course Title            |
|-------------|-------------------------|
| BACS-211    | History – II            |
| BACS-212    | Political Science – II  |
| BACS-213    | Mathematics - II        |
| BACS-214    | Elective English – II   |
| BACS-215    | Economics – II          |
| BACS-216    | Elective Punjabi – II   |
| BACS-217    | Sociology – II          |
| BACS-218    | Elective Computer – II  |
| BACS-219    | Physical Education – II |

# **SEMESTER I**

## General English - I

|                  |                            |                 |                  |
|------------------|----------------------------|-----------------|------------------|
| <b>BACS- 101</b> | <b>General English - I</b> | <b>3L:0T:0P</b> | <b>3 Credits</b> |
|------------------|----------------------------|-----------------|------------------|

### Course Outcomes (COs):

**CO1:** Develop proficiency in the English Language through writing and reading

**CO2:** Learn essential rules of English Grammar and improve Vocabulary

**CO3:** Enhance skill in writing paragraphs in English and drafting emails

**CO4:** Improve the ability to read and comprehend English Poetry and Prose

### Course Content:

#### UNIT-I (Poetry) (10 Hrs.)

- i.) Women's Rights by Annie Lennox Walker
- ii.) Song 36 from Gitanjali by Rabindra Nath Tagore
- iii.) The Soul's Prayer by Sarojini Naidu

#### UNIT-II (Prose) (10 Hrs.)

- i.) Principles of Good Writing - L.A. Hill
- ii.) Uncle Podger Hangs a Picture -Jerome k Jerome
- iii.) The Doll's house - Katherine Mansfield

#### UNIT-III (Grammar & Vocabulary) (15 Hrs.)

- i.) Tenses, Parts of Speech (Noun, Pronoun, Verb, Adverb, Adjective) and Common Errors related to both topics
- ii.) Word Building with prefixes and suffixes
- iii.) Synonyms

#### UNIT-IV (Composition) (10 Hrs.)

- i.) Translation of a paragraph from Vernacular to English (comprising at least 5 sentences)

or

Paragraph writing on any given topic with choice

- ii.) Email writing
- iii.) Comprehension of an unseen prose passage

### Recommended Textbooks :

- 1) *The Poetic Palette* (Orient Black swan, Second edition, 2016)
- 2) *Prose Parables* (Orient Black Swan, 2013)
- 3) *English at work* (selection from Poetry & Prose Vijay Kumar, B.T. Seetha, A.V Suresh Kumar, Y.L. Srinivas, New Delhi; Macmillan, India Ltd.2012 (Punjab University) Revised edition

- 4) S. Chand's Wren & Martin's *High School English Grammar & Composition*, Revised Edition
- 5) *The Students' Companion* by Wilfred D. Best

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### General Punjabi – I

|           |                     |          |           |
|-----------|---------------------|----------|-----------|
| BACS- 102 | General Punjabi – I | 3L:0T:0P | 3 Credits |
|-----------|---------------------|----------|-----------|

### Course Outcomes (COs):

|     |                                             |
|-----|---------------------------------------------|
| CO1 | ਪੰਜਾਬੀ ਵਿੱਚ ਪ੍ਰਭਾਵਸ਼ਾਲੀ ਸੰਚਾਰ ਕਰ ਸਕਣਗੇ।     |
| CO2 | ਸਿਰਜਣਾਤਮਕ ਲੇਖਣ ਦੇ ਮੁੱਢਲੇ ਹੁਨਰ ਵਿਕਸਿਤ ਹੋਣਗੇ। |

### Course Content:

| Detailed Contents                                                                                                                                                                                                                                                    | Contact hours |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <p style="text-align: center;"><b>UNIT- I</b></p> <p><b>ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਸੰਚਾਰ</b></p> <ul style="list-style-type: none"> <li>ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਸਰੂਪ ਅਤੇ ਮਹੱਤਵ</li> <li>ਸੰਚਾਰ ਦੀ ਧਾਰਨਾ</li> <li>ਮੌਖਿਕ ਅਤੇ ਲਿਖਤੀ ਸੰਚਾਰ</li> <li>ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਵਰਤਮਾਨ ਸੰਦਰਭ</li> </ul> | 11            |
| <p style="text-align: center;"><b>UNIT- II</b></p> <p><b>ਚੋਣਵੀਂ ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ</b></p> <ul style="list-style-type: none"> <li>4-5 ਪ੍ਰਤੀਨਿਧ ਕਵਿਤਾਵਾਂ ਦਾ ਅਧਿਐਨ</li> <li>ਕੇਂਦਰੀ ਭਾਵ ਅਤੇ ਸਮਾਜਿਕ ਸੰਦਰਭ</li> </ul>                                                    | 11            |
| <p style="text-align: center;"><b>UNIT- III</b></p> <p><b>ਲਿਖਤ ਕੋਸ਼ਲ</b></p> <ul style="list-style-type: none"> <li>ਪੈਰਾ ਰਚਨਾ</li> <li>ਸਿਰਜਣਾਤਮਕ ਲੇਖਣ</li> <li>ਆਲੇ-ਦੁਆਲੇ ਜੀਵਨ ਨਾਲ ਸੰਬੰਧਿਤ ਲੇਖ</li> </ul>                                                             | 11            |
| <p style="text-align: center;"><b>UNIT-IV</b></p> <p><b>ਭਾਸ਼ਾ ਅਤੇ ਵਿਆਕਰਣ</b></p>                                                                                                                                                                                     | 11            |

|                                                                                                                                             |  |
|---------------------------------------------------------------------------------------------------------------------------------------------|--|
| <ul style="list-style-type: none"> <li>• ਭਾਸ਼ਾ ਦੀ ਪਰਿਭਾਸ਼ਾ</li> <li>• ਸ਼ਬਦ-ਜੋੜ</li> <li>• ਮੁਹਾਵਰੇ ਅਤੇ ਅਖਾਣ</li> <li>• ਸੁੱਧ-ਅਸੁੱਧ</li> </ul> |  |
|---------------------------------------------------------------------------------------------------------------------------------------------|--|

#### Recommended Books:

1. ਪੰਜਾਬੀ ਭਾਸ਼ਾ: ਸਰੂਪ ਤੇ ਵਿਹਾਰ – ਡਾ. ਮਨਜੀਤ ਕੌਰ
2. ਪੰਜਾਬੀ ਵਿਆਕਰਨ ਸਿਧਾਂਤ ਅਤੇ ਵਿਹਾਰ – ਡਾ. ਬੂਟਾ ਸਿੰਘ ਬਰਾੜ
3. ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ (ਸੰਪਾਦਿਤ) – ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ
4. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਸੰਚਾਰ ਕੋਸ਼ਲ – ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ ਪਟਿਆਲਾ

### Introduction to computers and office automation

|                  |                                                        |                 |                  |
|------------------|--------------------------------------------------------|-----------------|------------------|
| <b>BACS- 103</b> | <b>Introduction to computers and office automation</b> | <b>3L:0T:0P</b> | <b>3 Credits</b> |
|------------------|--------------------------------------------------------|-----------------|------------------|

#### Course Outcomes (COs):

- CO1. Introduce students to the fundamentals of computers and information technology.
- CO2. Develop proficiency in operating computer systems and managing files.
- CO3. Familiarize students with office productivity software for document creation and presentations.
- CO4. Enable students to use Internet services, email, and cloud-based collaboration tools effectively.
- CO5. Create awareness about digital security, cyber ethics.

#### Course Content:

| <b>Detailed Contents</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Contact hours</b> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <b>UNIT I: Fundamentals of Computers</b><br><br>Evolution and Generations of Computers, Characteristics and Applications of Computers, Types of Computers, Functional Components of a Computer System, Hardware and Software, Input and Output Devices, CPU, Memory (RAM, ROM, Cache), Storage Devices, Number System Basics (Binary, Decimal), Computer Languages Overview.                                                                                                                                                                                                                         | 8                    |
| <b>UNIT II: Operating Systems and File Management</b><br><br>Introduction to Operating Systems , Functions of Operating System, Types of Operating Systems , File and Folder Management, File Extensions ,Creating, Copying, Moving and Deleting Files , Disk Management , Control Panel and Settings , Installing and Uninstalling Applications, Introduction to Open Source Operating Systems                                                                                                                                                                                                      | 9                    |
| <b>UNIT III: Word Processing and Document Management</b><br><br>Introduction to word processing software using Microsoft Word or LibreOffice Writer, creating, opening, saving and editing documents, text formatting, paragraph formatting, styles and themes, page layout and margins, headers and footers, bullets and numbering, inserting and formatting tables, images, shapes and SmartArt, page borders and page numbering, spell check and grammar tools, find and replace, printing documents, and preparation of professional documents such as letters, reports and resumes, mail-merge. | 10                   |
| <b>UNIT IV: Presentation Tools</b><br><br>Introduction to presentation software using Microsoft PowerPoint or LibreOffice Impress, creating presentations, applying themes and templates, slide layouts, inserting tables, charts, images, icons and SmartArt, applying                                                                                                                                                                                                                                                                                                                              | 10                   |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| transitions and animations, creating hyperlinks, presentation views, slide show techniques and presentation delivery.                                                                                                                                                                                                                                                                                                                                            |   |
| <p style="text-align: center;"><b>UNIT V: Internet and Digital Communication</b></p> <p>Introduction to the Internet and World Wide Web, web browsers and search techniques, downloading and uploading files, email concepts, email creation and management, email etiquette and attachments, cloud storage services, video conferencing platforms, cyber safety practices and cyber ethics, password management, malware awareness, data backup techniques.</p> | 8 |

#### **Recommended Books**

1. P.K. Sinha & Priti Sinha, *Computer Fundamentals*.
2. V. Rajaraman, *Fundamentals of Computers*.
3. Anita Goel, *Computer Fundamentals*.
4. Ramesh Bangia, *PC Software and Office Automation*.
5. ITL Education Solutions, *Office Automation using MS Office*.

## **Introduction to Information Technology and Office Automation (Lab)**

|                  |                                                                           |                 |                  |
|------------------|---------------------------------------------------------------------------|-----------------|------------------|
| <b>BACS- 104</b> | <b>Introduction to Information Technology and Office Automation (Lab)</b> | <b>0L:0T:2P</b> | <b>1 Credits</b> |
|------------------|---------------------------------------------------------------------------|-----------------|------------------|

### **Course Outcomes (COs):**

- CO1** Understand the basic parts of a computer, the Windows operating system, and file management.
- CO2** Use Windows to manage files and folders, change basic system settings, and install or remove software.
- CO3** Create, edit, and format professional documents using a word processing application.
- CO4** Create attractive presentations using presentation software with text, pictures, charts, animations, and multimedia.
- CO5** Use the Internet, email, cloud storage, and online meeting tools safely and effectively while following good digital practices.

### **Course Content:**

- 1** Study the basic components of a computer system. Identify hardware devices such as CPU, monitor, keyboard, mouse, RAM, storage devices, and peripheral devices, and record their specifications.
- 2** Explore the Windows operating system. View system information, identify installed software, and compare different types of operating systems .
- 3** Perform file and folder management operations by creating, renaming, copying, moving, deleting, restoring, and organizing files and folders using File Explorer.
- 4** Configure basic Windows settings using Control Panel and Settings. Change display settings, date and time, desktop background, and explore Task Manager, Disk Cleanup, and Storage Management tools.
- 5** Install and uninstall software applications.
- 6** Create, save, edit, and format a document using Microsoft Word or LibreOffice Writer. Apply font formatting, paragraph formatting, page setup, and document alignment.
- 7** Design a formatted document using styles, themes, headers, footers, page numbers, borders, bullets, numbering, and multilevel lists.
- 8** Insert and format tables, pictures, shapes, SmartArt, WordArt, and symbols in a document.
- 9** Prepare professional documents including a resume, business letter, and report. Use spell check, find and replace, page numbering, and export the document as a PDF.
- 10** Perform Mail Merge by creating a recipient database and generating personalized letters, envelopes, or mailing labels.
- 11** Create a PowerPoint presentation with themes, templates, slide layouts, tables, charts, images, SmartArt, and icons.
- 12** Develop a multimedia presentation by applying transitions, animations, hyperlinks, audio/video objects, and deliver the presentation using Slide Show features.

- 13** Perform Internet-based activities including web browsing, information searching using search engines, downloading and uploading files, and bookmarking useful websites.
- 14** Create and manage an email account. Compose, send, reply, and forward emails with attachments. Upload, organize, and share files using Google Drive or another cloud storage service.
- 15** Participating in an online meeting using Google Meet or Microsoft Teams, and preparing a report on digital safety and etiquette.

## Human Values, De addiction and Traffic Rules

|                    |                                                     |                 |                  |
|--------------------|-----------------------------------------------------|-----------------|------------------|
| <b>HVPE 101-18</b> | <b>Human Values, De addiction and Traffic Rules</b> | <b>3L:0T:0P</b> | <b>3 Credits</b> |
|--------------------|-----------------------------------------------------|-----------------|------------------|

### Course Outcomes:

1. To help the students appreciate the essential complementarity between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
2. To facilitate the development of a Holistic perspective among students towards life, profession and happiness, based on a correct understanding of the Human reality and the rest of Existence. Such a holistic perspective forms the basis of Value based living in a natural way.
3. To highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually satisfying human behavior and mutually enriching interaction with Nature

Note: This course is intended to provide a much needed orientational input in Value Education to the young enquiring minds.

### Unit-I Course Introduction - Need, Basic Guidelines, Content and Process for Value Education

1. Understanding the need, basic guidelines, content and process for Value Education
2. Self-Exploration—what is it? - its content and process; 'Natural Acceptance' and Experiential Validation- as the mechanism for self-exploration
3. Continuous Happiness and Prosperity- A look at basic Human Aspirations
4. Right understanding, Relationship and Physical Facilities- the basic requirements for fulfilment of aspirations of every human being with their correct priority
5. Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario
6. Method to fulfil the above human aspirations: understanding and living in harmony at various levels

### Unit-II Understanding Harmony in the Human Being - Harmony in Myself!

1. Understanding human being as a co-existence of the sentient 'I' and the material 'Body'
2. Understanding the needs of Self ('I') and 'Body' - *Sukh* and *Suvidha*
3. Understanding the Body as an instrument of 'I' (I being the doer, seer and enjoyer)
4. Understanding the characteristics and activities of 'I' and harmony in 'I'
5. Understanding the harmony of I with the Body: *Sanyam* and *Swasthya*; correct appraisal of Physical needs, meaning of Prosperity in detail

6. Programs to ensure *Sanyam* and *Swasthya*

- Practice Exercises and Case Studies will be taken up in Practice Sessions.

**Unit-III Understanding Harmony in the Family and Society- Harmony in Human-Human Relationship**

1. Understanding harmony in the Family- the basic unit of human interaction
2. Understanding values in human-human relationship; meaning of *Nyaya* and program for its fulfilment to ensure *Ubhay-tripti*; Trust (*Vishwas*) and Respect (*Samman*) as the foundational values of relationship
3. Understanding the meaning of *Vishwas*; Difference between intention and competence
4. Understanding the meaning of *Samman*, Difference between respect and differentiation; the other salient values in relationship
5. Understanding the harmony in the society (society being an extension of family): *Samadhan*, *Samridhi*, *Abhay*, *Sah-astitva* as comprehensive Human Goals
6. Visualizing a universal harmonious order in society- Undivided Society (*Akhand Samaj*), Universal Order (*Sarvabhaum Vyawastha*)- from family to world family!

- Practice Exercises and Case Studies will be taken up in Practice Sessions.

**Unit-IV Understanding Harmony in the Nature and Existence - Whole existence as Co-existence**

1. Understanding the harmony in the Nature
2. Interconnectedness and mutual fulfilment among the four orders of nature- recyclability and self-regulation in nature
3. Understanding Existence as Co-existence (*Sah-astitva*) of mutually interacting units in all-pervasive space
4. Holistic perception of harmony at all levels of existence

- Practice Exercises and Case Studies will be taken up in Practice Sessions.

**Unit-V Implications of the above Holistic Understanding of Harmony on Professional Ethics**

1. Natural acceptance of human values
2. Definitiveness of Ethical Human Conduct
3. Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order
4. Competence in professional ethics:
  - a) Ability to utilize the professional competence for augmenting universal human order,
  - b) Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems,
  - c) Ability to identify and develop appropriate technologies and management patterns for above production systems.

5. Case studies of typical holistic technologies, management models and production systems
6. Strategy for transition from the present state to Universal Human Order:
  - a) At the level of individual: as socially and ecologically responsible engineers, technologists and managers
  - b) At the level of society: as mutually enriching institutions and organizations.

### **Text Book**

1. R R Gaur, R Sangal, G P Bagaria, 2009, *A Foundation Course in Value Education*.

### **Reference Books**

1. Ivan Illich, 1974, *Energy & Equity*, The Trinity Press, Worcester, and Harper Collins, USA.
2. E.F. Schumacher, 1973, *Small is Beautiful: a study of economics as if people mattered*, Blond & Briggs, Britain.
3. A Nagraj, 1998, *Jeevan Vidya ek Parichay*, Divya Path Sansthan, Amarkantak.
4. Sussan George, 1976, *How the Other Half Dies*, Penguin Press. Reprinted 1986, 1991.
5. PL Dhar, RR Gaur, 1990, *Science and Humanism*, Common wealth Publishers.
6. A.N. Tripathy, 2003, *Human Values*, New Age International Publishers.
7. Subhas Palekar, 2000, *How to practice Natural Farming*, Pracheen (Vaidik) Krishi Tantra Shodh, Amravati.
8. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, *Limits to Growth – Club of Rome’s report*, Universe Books.
9. E G Seebauer & Robert L. Berry, 2000, *Fundamentals of Ethics for Scientists & Engineers*, Oxford University Press
10. M Govindrajran, S Natrajan & V.S. Senthil Kumar, *Engineering Ethics (including Human Values)*, Eastern Economy Edition, Prentice Hall of India Ltd.
11. B P Banerjee, 2005, *Foundations of Ethics and Management*, Excel Books.
12. B L Bajpai, 2004, *Indian Ethos and Modern Management*, New Royal Book Co., Lucknow. Reprinted 2008.

### **Relevant CDs, Movies, Documentaries & Other Literature:**

1. Value Education website, <http://uhv.ac.in>
2. Story of Stuff, <http://www.storyofstuff.com>
3. Al Gore, An Inconvenient Truth, Paramount Classics, USA
4. Charlie Chaplin, Modern Times, United Artists, USA
5. IIT Delhi, Modern Technology – the Untold Story

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**Human Values, De-addiction and Traffic Rules (Lab/ Seminar)**

|                   |                                                                    |                 |                  |
|-------------------|--------------------------------------------------------------------|-----------------|------------------|
| <b>HVPE102-18</b> | <b>Human Values, De-addiction and Traffic Rules (Lab/ Seminar)</b> | <b>0L:0T:1P</b> | <b>1 Credits</b> |
|-------------------|--------------------------------------------------------------------|-----------------|------------------|

One each seminar will be organized on Drug De-addiction and Traffic Rules. Eminent scholar and experts of the subject will be called for the Seminar at least once during the semester. It will be binding for all the students to attend the seminar.

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# ELECTIVES

## History – I

|          |             |          |           |
|----------|-------------|----------|-----------|
| BACS-111 | History – I | 4L:0T:0P | 4 Credits |
|----------|-------------|----------|-----------|

### Course Outcomes (COs)

After successfully completing this course, students will be able to:

**CO1:** Explain the major sources of Ancient Indian History, including archaeological, literary, and foreign accounts, and assess their historical significance.

**CO2:** Analyse the origin, urban planning, and decline of the Indus Valley Civilization, and evaluate the social, economic, and religious life of the Rig Vedic and Later Vedic periods.

**CO3:** Describe the emergence, principles, and impact of Jainism and Buddhism, and examine the administration, Ashokan Dhamma, and inscriptions of the Mauryan Empire.

**CO4:** Evaluate the political, religious, and cultural contributions of the Kushans, Satvahanas, and Sangam Age, with special reference to Kanishka, Mahayana Buddhism, and Gandhara Art.

**CO5:** Assess the administrative system, political achievements, and cultural developments of the Gupta and Vardhana dynasties, including the concept of the "Golden Age" and patronage of religion and literature.

**CO6:** Examine the administrative, social, religious, and artistic developments under the Cholas and Rajputs, and analyze the teachings of Shankaracharya along with the growth of Shaivism and Vaishnavism.

### Course Content:

#### SECTION–A(15 hours)

##### 1. Sources of Ancient Indian History

- Archaeological Sources
- Literary Sources

- Foreign Accounts
- 2. The Indus Valley Civilization**
  - Town Planning
  - Causes of Decline
- 3. The Rig Vedic and Later Vedic Period**
  - Social Life
  - Economic Life
  - Religious Life

**SECTION–B (15 hours)**

- 1. Jainism and Buddhism**
  - Emergence
  - Teachings
- 2. The Mauryan Empire**
  - Administration
  - Ashokan Inscriptions
  - Dhamma
- 3. The Kushan Empire**
  - Kanishka
  - Mahayana Buddhism
  - Gandhara Art

**SECTION–C (15 hours)**

- 1. The Satavahanas and the Sangam Age**
- 2. The Gupta Age**
  - Administration
  - The Golden Age
- 3. The Vardhana Dynasty**
  - Foundation
  - Patronage of Religion
  - Literature

**SECTION–D (15 hours)**

### **1. The Cholas**

- Administration
- Architecture

### **2. The Rajputs**

- Polity
- Society
- Art and Architecture

### **3. Shaivism and Vaishnavism**

- Shankaracharya and His Teachings

### **Suggested Readings:**

1. A.L. Basham, The Wonder That was India, Fontana,1977.
2. B. Chattopadhyaya, the Making of Early Medieval India, Delhi: OUP,1998.
3. D.D. Kosambi, The Culture and Civilization of Ancient India in Historical Outline, Delhi: Vikas,1994.
4. D.N. Jha, Early India,,New Delhi: Manohar,2004.
5. N.K. Sinha, A History of India, Calcutta: Orient Longman,1983.
6. R.S. Sharma, Aspects of Political Ideas and Institutions in Ancient India, New Delhi: OUP, 1991.
7. Romila Thapar, Early India: Up to 1300 A.D.Voll, New Delhi: Penguin Books,1981.

### Political Science – I

|                 |                              |                 |                  |
|-----------------|------------------------------|-----------------|------------------|
| <b>BACS-112</b> | <b>Political Science – I</b> | <b>4L:0T:0P</b> | <b>4 Credits</b> |
|-----------------|------------------------------|-----------------|------------------|

#### Course Outcomes (COs):

|     |                                                                                                          |
|-----|----------------------------------------------------------------------------------------------------------|
| CO1 | Introduction: Familiarize students with the discipline of Political Science, theories of origin of State |
| CO2 | Basic Concepts: To acquaint students to the basic concepts of Political Science                          |
| CO3 | Political Theories and Ideologies: Explore major political theories and ideologies                       |

#### Course Content:

| Detailed Contents                                                                                                                                                                                                                                                                                                                     | Contact hours |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>UNIT- I</b><br><b>Introduction to Political Science</b> <ul style="list-style-type: none"><li>• Meaning, Nature and Scope of Political Science</li><li>• Traditional and Modern Approaches to Political Science</li><li>• Relationship of Political Science with Sociology, Economics and History</li></ul>                        | 15            |
| <b>UNIT- II</b><br><b>State and Its Origin</b> <ul style="list-style-type: none"><li>• Meaning and Elements of State</li><li>• Difference between State and Society</li><li>• Theories of Origin of State:<ul style="list-style-type: none"><li>○ Social Contract Theory</li><li>○ Historical/Evolutionary Theory</li></ul></li></ul> | 15            |
| <b>UNIT- III</b><br><b>Functions and Role of State</b> <ul style="list-style-type: none"><li>• Liberal, Marxist and Gandhian Views of State</li><li>• Functions of State: Essential and Welfare Functions</li><li>• Welfare State: Meaning, Features and Importance</li></ul>                                                         | 15            |
| <b>UNIT-IV</b><br><b>Sovereignty and Political System</b> <ul style="list-style-type: none"><li>• Meaning and Characteristics of Sovereignty</li><li>• Austin's Theory of Sovereignty</li><li>• Pluralistic Theory of Sovereignty</li></ul>                                                                                           | 15            |

#### Recommended Books:

1. J. C. Johari, Principles of Political Science, Sterling Publishers, New Delhi.
2. S.P. Verma, Political Theory, Geetanjali Publishing House, New Delhi.
3. A.C. Kapur, Principles of Political Science, S. Chand & Company, New Delhi.

## Mathematics – I

|                 |                        |                 |                  |
|-----------------|------------------------|-----------------|------------------|
| <b>BACS-113</b> | <b>Mathematics – I</b> | <b>4L:0T:0P</b> | <b>4 Credits</b> |
|-----------------|------------------------|-----------------|------------------|

### Course Outcomes (COs):

CO1: Evaluate limits, examine continuity/differentiability of functions and apply mean value theorems to analytical problems.

CO2: Solve problems involving partial differentiation and maxima–minima, and apply these to optimisation problems arising in computing.

CO3: Apply integral calculus to compute areas, volumes and related quantities using single, double and triple integrals.

CO4: Test convergence of sequences and series and represent functions using power series.

CO5: Apply basic vector-calculus operations relevant to computer graphics, simulation and image processing.

### Course Content:

| Detailed Contents                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Contact hours |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>Unit I (Limits, Continuity and Differentiation)</b> <ul style="list-style-type: none"><li>• Functions, limits and continuity; types of discontinuities.</li><li>• Differentiability, standard rules of differentiation, chain rule.</li><li>• Successive differentiation, Leibnitz theorem.</li><li>• Mean value theorems: Rolle's theorem, Lagrange's mean value theorem, Cauchy's mean value theorem.</li><li>• Taylor's and Maclaurin's series; indeterminate forms and L'Hospital's rule.</li></ul> | 15            |
| <b>Unit II (Partial Differentiation and Multivariable Calculus)</b> <ul style="list-style-type: none"><li>• Functions of several variables, partial derivatives, total differential.</li><li>• Euler's theorem on homogeneous functions.</li><li>• Maxima and minima of functions of two variables; Lagrange's method of undetermined multipliers.</li><li>• Jacobians and their elementary properties</li></ul>                                                                                           | 15            |

|                                                                                                                                                                                                                                                                                                                                                                                                                                        |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| <b>Unit III (Integral Calculus)</b> <ul style="list-style-type: none"> <li>• Reduction formulae; definite integrals and their properties.</li> <li>• Applications: area under plane curves, length of curves, volume and surface area of solids of revolution.</li> <li>• Double and triple integrals; change of order of integration.</li> <li>• Beta and Gamma functions and their properties.</li> </ul>                            | 15 |
| <b>Unit IV (Sequences, Series and Vector Calculus)</b> <ul style="list-style-type: none"> <li>• Convergence of sequences and infinite series; comparison, ratio and root tests.</li> <li>• Power series and radius of convergence.</li> <li>• Vector differentiation: gradient, divergence and curl.</li> <li>• Line, surface and volume integrals; elementary treatment of Green's, Stokes' and Gauss divergence theorems.</li> </ul> | 15 |

### Textbooks

1. Thomas, G. B., & Finney, R. L. (2014). Calculus (13th ed.). Pearson Education.
2. Grewal, B. S. (2020). Higher Engineering Mathematics (44th ed.). Khanna Publishers.

### Reference Books

1. Apostol, T. M. (1967). Calculus, Volume 1 (2nd ed.). John Wiley & Sons.
2. Stewart, J. (2015). Calculus: Early Transcendentals (8th ed.). Cengage Learning.
3. Piskunov, N. (1969). Differential and Integral Calculus. Mir Publishers.

### Elective English – I

|                 |                             |                 |                  |
|-----------------|-----------------------------|-----------------|------------------|
| <b>BACS-114</b> | <b>Elective English – I</b> | <b>4L:0T:0P</b> | <b>4 Credits</b> |
|-----------------|-----------------------------|-----------------|------------------|

#### Course Outcomes (COs):

|     |                                                                                                                                                                                 |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1 | Familiarize students with various Literary terms frequently used in Literary texts to form a foundational understanding of varied writing styles and genres                     |
| CO2 | Skill Development by improving Language Proficiency with focus on Critical Reading, Literary Analysis, Communication Skills including speaking, listening, reading, and writing |
| CO3 | Build an understanding of the evolution of Poetry in England and Chaucer's contribution as the Father of English Poetry                                                         |
| CO4 | Form foundational understanding of a Classical Tragedy and its major components through Aristotle's <i>Poetics</i> through comprehensive reading of <i>Oedipus Rex</i>          |

#### Course Content:

| Detailed Contents                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Contact hours |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>UNIT- I</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |
| <b>Literary Terms &amp; Devices</b><br>Narrative Technique, Point of view, Metaphor, Symbol, Pathos, Free Verse, Anecdote, Tone, Imagery, Satire, Humour, Short Story, Irony, Simile, Personification, Three classical unities                                                                                                                                                                                                                                                                           | 15            |
| <b>UNIT- II</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |
| <b>Miscellaneous Collection</b><br><b>Prescribed selections from Fluency in English</b> <ul style="list-style-type: none"> <li>• Reading Strategies- Inzy Lets things Flow over Him by Kadamba Murali</li> <li>• Telling Stories- Haroun and the Sea of Stories by Salman Rushdie</li> <li>• Understanding Poetry I- Sisters by Saleem Peeradina</li> <li>• Understanding Satire - A Ten Day Fast by Harishankar Parsai</li> <li>• Understanding Values- Go, kiss the world by Subroto Bagchi</li> </ul> | 15            |
| <b>UNIT- III</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |
| <b>Understanding 14<sup>th</sup> Century English Poetry</b> <ul style="list-style-type: none"> <li>• Chaucer's <i>Prologue to The Canterbury Tales</i></li> </ul>                                                                                                                                                                                                                                                                                                                                        | 15            |
| <b>UNIT-IV</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |
| <b>Understanding Classical Drama</b> <ul style="list-style-type: none"> <li>• Sophocles's <i>Oedipus Rex</i> with reference to Aristotle's <i>Poetics</i></li> </ul>                                                                                                                                                                                                                                                                                                                                     | 15            |

#### Ref Books:

1. *Fluency in English*: Ed. Promodini Verma, Mukti Sanyal, Tulika Prasad, New Delhi- Macmillan India, 2009
2. *A Glossary of Literary Terms* by M.H. Abrams
3. Chaucer's *Prologue to the Canterbury Tales*

4. Aristotle's *Poetics*
5. Sophocles' s *Oedipus Rex*
6. *Background to the Study of English Literature* by B. Prasad, Macmillan India Limited
7. *An Outline History of English Literature* by William Henry

## Economics – I

|                 |                      |                 |                  |
|-----------------|----------------------|-----------------|------------------|
| <b>BACS-115</b> | <b>Economics – I</b> | <b>4L:0T:0P</b> | <b>4 Credits</b> |
|-----------------|----------------------|-----------------|------------------|

### Course Outcomes (COs):

|             |                                                                                                                                               |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CO1:</b> | Explain the fundamental concepts, principles and scope of microeconomics and their relevance to modern economic systems.                      |
| <b>CO2:</b> | Analyze consumer behaviour, demand, supply and market equilibrium using economic theories and real-life applications.                         |
| <b>CO3:</b> | Apply production and cost concepts to understand business decision-making and resource optimization.                                          |
| <b>CO4:</b> | Evaluate pricing decisions under different market structures and explain factor pricing in the context of contemporary and digital economies. |

### Course Content:

| <b>Detailed Contents</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Contact hours</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <p style="text-align: center;"><b>UNIT- I</b></p> <p><b>Introduction to Microeconomics and Consumer Behaviour:</b> Meaning, Nature and Scope of Economics; Basic Economic Problems; Opportunity Cost and Production Possibility Curve (PPC)</p> <p><b>Demand and Supply Analysis:</b> Law of Demand and Supply, Determinants of Demand and Supply</p> <p><b>Elasticity of Demand</b> (Price, Income and Cross Elasticity), Applications in Digital Markets (Online Shopping, App-based Services)</p> <p><b>Consumer Behaviour</b> – Utility and Indifference Curve Approach (Overview).</p> | 15                   |
| <p style="text-align: center;"><b>UNIT- II</b></p> <p><b>Production and Cost Analysis:</b> Factors of Production; Production Function; Law of Variable Proportions; Returns to Scale; Cost Concepts (Fixed, Variable, Average and Marginal Costs); Revenue Concepts (TR, AR, MR).</p>                                                                                                                                                                                                                                                                                                       | 15                   |
| <p style="text-align: center;"><b>UNIT- III</b></p> <p><b>Market Structures and Price Determination:</b> Perfect Competition and Monopoly – Features; Price and Output Determination under Perfect Competition and Monopoly; Oligopoly (Introduction); Basic Comparison of Market Structures.</p>                                                                                                                                                                                                                                                                                           | 15                   |
| <p style="text-align: center;"><b>UNIT-IV</b></p> <p><b>Factor Pricing and Distribution Theory:</b> Wage Determination – Marginal Productivity Theory; Interest – Concept and Determination; Profit – Risk and Uncertainty Theory, Innovation Theory; Introduction to Income Distribution and Economic Welfare; Inclusive Growth and Sustainable Development; Introduction to Digital Economy, Gig Economy and Platform-based Employment</p>                                                                                                                                                | 15                   |

|                                                                            |  |
|----------------------------------------------------------------------------|--|
| Introduction to Digital Economy, Gig Economy and Platform-based Employment |  |
|----------------------------------------------------------------------------|--|

### Text Books

1. T.R. Jain, Mukesh Trehan & A.S. Sandhu, *Microeconomics*, VK Global Publications.
2. P.N. Chopra, *Microeconomics: Theory and Welfare Economics*, Kalyani Publishers.
3. P.N. Chopra, Joginder Singh & P.S. Grewal, *Price Theory and Distribution*, Kalyani Publishers.

### Reference Books

1. N. Gregory Mankiw, *Principles of Economics*, Cengage Learning.
2. Dominick Salvatore, *Microeconomics: Theory and Applications*, Oxford University Press.
3. H.L. Ahuja, *Advanced Economic Theory*, S. Chand.
4. Hal R. Varian, *Intermediate Microeconomics*, W.W. Norton.
5. Paul Samuelson & William Nordhaus, *Economics*, McGraw-Hill.

### Elective Punjabi – I

|          |                      |          |           |
|----------|----------------------|----------|-----------|
| BACS-116 | Elective Punjabi – I | 4L:0T:0P | 4 Credits |
|----------|----------------------|----------|-----------|

### Course Outcomes (COs):

|     |                                                   |
|-----|---------------------------------------------------|
| CO1 | ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਗੁਰਮੁਖੀ ਲਿਪੀ ਦੀ ਸਮਝ ਵਿਕਸਿਤ ਕਰਨਾ। |
| CO2 | ਲੋਕ ਸਾਹਿਤ ਅਤੇ ਸੱਭਿਆਚਾਰ ਦੀ ਜਾਣਕਾਰੀ ਪ੍ਰਾਪਤ ਕਰਨਾ।    |
| CO3 | ਲਿਖਤੀ ਅਤੇ ਮੌਖਿਕ ਸੰਚਾਰ ਯੋਗਤਾ ਵਿਕਸਿਤ ਕਰਨਾ।          |
| CO4 | ਡਿਜੀਟਲ ਮਾਧਿਅਮਾਂ ਵਿੱਚ ਪੰਜਾਬੀ ਦੀ ਵਰਤੋਂ ਕਰਨਾ।        |

### Course Content:

| Detailed Contents                                                                                                                  | Contact hours |
|------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>UNIT- I</b> <ul style="list-style-type: none"> <li>ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਨਿਕਾਸ ਤੇ ਵਿਕਾਸ</li> <li>ਗੁਰਮੁਖੀ ਲਿਪੀ ਨਾਲ ਜਾਣ-ਪਛਾਣ</li> </ul> | 15            |

|                                                                                                                                                                                              |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| <ul style="list-style-type: none"> <li>ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਸੰਚਾਰ</li> </ul>                                                                                                                     |    |
| <p style="text-align: center;"><b>UNIT- II</b></p> <ul style="list-style-type: none"> <li>ਪੰਜਾਬੀ ਲੋਕ ਸਾਹਿਤ</li> <li>ਲੋਕ ਗੀਤ: ਸੁਹਾਗ, ਘੋੜੀਆਂ, ਟੱਪੇ</li> <li>ਪੰਜਾਬੀ ਸੱਭਿਆਚਾਰਕ ਵਿਰਾਸਤ</li> </ul> | 15 |
| <p style="text-align: center;"><b>UNIT- III</b></p> <ul style="list-style-type: none"> <li>ਲੇਖ ਰਚਨਾ</li> <li>ਪੈਰਾ ਰਚਨਾ</li> <li>ਸਿਰਜਣਾਤਮਕ ਲੇਖਣ</li> </ul>                                    | 15 |
| <p style="text-align: center;"><b>UNIT-IV</b></p> <ul style="list-style-type: none"> <li>ਸੰਚਾਰ ਕੈਸਲ</li> <li>ਡਿਜੀਟਲ ਪੰਜਾਬੀ ਲਿਖਤ</li> <li>ਈ-ਸਮੱਗਰੀ ਦੀ ਤਿਆਰੀ</li> </ul>                        | 15 |

Recommended Books:

1. ਡਾ. ਕਰਮਜੀਤ ਸਿੰਘ – ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਅਤੇ ਸਾਹਿਤ
2. ਡਾ. ਬੂਟਾ ਸਿੰਘ ਬਰਾੜ – ਪੰਜਾਬੀ ਵਿਆਕਰਨ: ਸਿਧਾਂਤ ਅਤੇ ਵਿਹਾਰ
3. ਡਾ. ਹਰਭਜਨ ਸਿੰਘ – ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸ
4. ਮਨਜੀਤ ਕੌਰ – ਪੰਜਾਬੀ ਭਾਸ਼ਾ: ਵਰਤੋਂ ਤੇ ਬਣਤਰ
5. ਵੇਦ ਅਗਨੀਹੋਤਰੀ - ਪਰਿਚਾਇਕ ਭਾਸ਼ਾ ਵਿਗਿਆਨ

## Sociology – I

|                 |                      |                 |                  |
|-----------------|----------------------|-----------------|------------------|
| <b>BACS-117</b> | <b>Sociology – I</b> | <b>4L:0T:0P</b> | <b>4 Credits</b> |
|-----------------|----------------------|-----------------|------------------|

### Course Outcomes (COs)

|     |                                                                          |
|-----|--------------------------------------------------------------------------|
| CO1 | To understand the basic concepts of Sociology                            |
| CO2 | To explore the meaning of culture and civilization                       |
| CO3 | To understand the concept of social institutions and its different types |
| CO4 | To know the meaning of digital society                                   |

### Course Content:

| Detailed Contents                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Contact hours |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <p style="text-align: center;"><b>UNIT- I</b></p> <p><b>Introduction to Sociology / ਸਮਾਜ ਸ਼ਾਸਤਰ ਦਾ ਪਰਿਚਯ</b></p> <ul style="list-style-type: none"> <li>Meaning, Nature and Scope of Sociology (ਸਮਾਜ ਸ਼ਾਸਤਰ ਦਾ ਅਰਥ, ਸੁਭਾਉ ਅਤੇ ਖੇਤਰ)</li> <li>Society and Community: Meaning, Characteristics and difference between society and community (ਸਮਾਜ ਅਤੇ ਸਮੁਦਾਇ: ਅਰਥ, ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਅਤੇ ਸਮਾਜ ਅਤੇ ਸਮੁਦਾਇ ਵਿੱਚ ਅੰਤਰ)</li> <li>Sociology in Everyday Life: Ethnomethodology and Phenomenology (ਰੋਜ਼ਾਨਾ ਜੀਵਨ ਵਿੱਚ ਸਮਾਜ ਸ਼ਾਸਤਰ: ਨਸਲੀ ਵਿਧੀ ਅਤੇ ਵਰਤਾਰਾ ਵਿਗਿਆਨ)</li> </ul>                                                                                                                                                                                             | 15            |
| <p style="text-align: center;"><b>UNIT- II</b></p> <p><b>Culture and Socialization / ਸਭਿਆਚਾਰ ਅਤੇ ਸਮਾਜੀਕਰਨ</b></p> <ul style="list-style-type: none"> <li>Culture: Meaning, characteristics and types and Civilization: Meaning, Features, Cultural Lag, Difference between culture and civilization (ਸਭਿਆਚਾਰ ਅਰਥ, ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਅਤੇ ਕਿਸਮਾਂ ਅਤੇ ਸਭਿਅਤਾ: ਅਰਥ, ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ, ਸੱਭਿਆਚਾਰਕ ਪਛੜਨਾ, ਸੱਭਿਆਚਾਰ ਅਤੇ ਸਭਿਅਤਾ ਵਿੱਚ ਅੰਤਰ)</li> <li>Cultural Diversity in India: Meaning and Importance (ਭਾਰਤ ਵਿੱਚ ਸਭਿਆਚਾਰਕ ਵਿਭਿੰਨਤਾ: ਅਰਥ ਅਤੇ ਮਹੱਤਤਾ)</li> <li>Socialization Process: Meaning, Agents of Socialization, Theory of Looking Glass Self by C.H. Cooley (ਸਮਾਜੀਕਰਨ ਦੀ ਪ੍ਰਕਿਰਿਆ: ਅਰਥ, ਸਮਾਜੀਕਰਨ ਦੇ ਏਜੰਟ, ਸੀ.ਐਚ. ਕੂਲੇ ਦੁਆਰਾ ਲੁਕਿੰਗ ਗਲਾਸ ਸੈਲਫ ਦਾ ਸਿਧਾਂਤ)</li> </ul> | 15            |
| <p style="text-align: center;"><b>UNIT- III</b></p> <p><b>Social Institutions / ਸਮਾਜਿਕ ਸੰਸਥਾਵਾਂ</b></p> <ul style="list-style-type: none"> <li>Kinship: Meaning, Types and Importance (ਨਾਤੇਦਾਰੀ ਅਰਥ, ਕਿਸਮਾਂ ਅਤੇ ਮਹੱਤਤਾ)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 15            |

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| <ul style="list-style-type: none"> <li>Religion: Meaning, Importance and Different Forms of Religion (ਧਰਮ: ਅਰਥ, ਮਹੱਤਵ ਅਤੇ ਧਰਮ ਦੇ ਵੱਖ-ਵੱਖ ਰੂਪ)</li> <li>Education: Meaning and Importance (ਸਿੱਖਿਆ: ਅਰਥ ਅਤੇ ਮਹੱਤਵ)</li> </ul>                                                                                                                                                                                                                                                                                        |    |
| <p style="text-align: center;"><b>UNIT-IV</b></p> <p><b>Digital Society / ਡਿਜੀਟਲ ਸਮਾਜ</b></p> <ul style="list-style-type: none"> <li>Social Media and Society: Mining and Role of Social Media in Everyday Life: (ਸੋਸ਼ਲ ਮੀਡੀਆ ਅਤੇ ਸਮਾਜ: ਅਰਥ ਅਤੇ ਰੋਜ਼ਾਨਾ ਜ਼ਿੰਦਗੀ ਵਿੱਚ ਸੋਸ਼ਲ ਮੀਡੀਆ ਭੂਮਿਕਾ)</li> <li>Digital Citizenship: Meaning, Digital Rights and Responsibilities (ਡਿਜੀਟਲ ਨਾਗਰਿਕਤਾ: ਅਰਥ, ਡਿਜੀਟਲ ਅਧਿਕਾਰ ਅਤੇ ਜ਼ਿੰਮੇਵਾਰੀਆਂ)</li> <li>Cyber Ethics: Meaning and Importance (ਸਾਇਬਰ ਨੈਤਿਕਤਾ: ਅਰਥ ਅਤੇ ਮਹੱਤਵ)</li> </ul> | 15 |

**Recommended Books:**

1. C.N. Shankar Rao – Sociology
2. Anthony Giddens – Sociology
3. Vidya Bhushan & Sachdeva – Introduction to Sociology

## Elective Computer – I

|                 |                              |                 |                  |
|-----------------|------------------------------|-----------------|------------------|
| <b>BACS-118</b> | <b>Elective Computer – I</b> | <b>4L:0T:0P</b> | <b>4 Credits</b> |
|-----------------|------------------------------|-----------------|------------------|

### Course Outcomes (COs):

CO1 Explain Internet architecture, web technologies, and website development concepts.

CO2 Design structured web pages using HTML5 elements and forms.

CO3 Apply CSS techniques to create attractive and responsive web interfaces.

CO4 Apply basic web design principles, UI/UX concepts, and SEO techniques to create user-friendly websites using modern web development tools.

### Course Content:

| Detailed Contents                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Contact hours |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>UNIT I: Internet Fundamentals and HTML5</b><br><br>Introduction to Internet, WWW, websites, browsers, search engines, URL, domain names, IP addresses, DNS, HTTP/HTTPS, client-server architecture, web hosting, front-end and back-end concepts, website development process, HTML5 structure, headings, paragraphs, formatting, lists, links, images, tables, forms, multimedia, iframe and semantic HTML5 elements.                                                                                                                                                                                                                                                                  | 15            |
| <b>UNIT III: Cascading Style Sheets (CSS3)</b><br><br>Introduction to Cascading Style Sheets (CSS), advantages of CSS, types of CSS (Inline, Internal and External), CSS syntax and selectors, colours, backgrounds, borders, fonts, text formatting, icons and web fonts, styling hyperlinks and lists, CSS Box Model, margin, padding, border, width and height, display properties, positioning techniques, float and clear properties, introduction to Flexbox and CSS Grid layouts, responsive web design concepts, media queries, creating visually appealing and user-friendly web pages using CSS.                                                                                 | 15            |
| <b>UNIT IV: Web Publishing, Accessibility and Development Tools</b><br><br>Principles of good web design, website planning and navigation, basic user interface (UI) and user experience (UX) concepts, typography and colour selection, introduction to Search Engine Optimization (SEO), website performance optimization basics, introduction to Visual Studio Code, browser developer tools, version control using Git, introduction to GitHub, creating repositories, uploading web projects, website publishing using GitHub Pages, website testing and validation, introduction to AI-assisted web development tools, and development of a simple static website as a mini project. | 15            |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <p><b>UNIT IV: Compulsory Implementation Part</b></p> <ul style="list-style-type: none"> <li>• Identify the basic components of a website and explore popular web browsers, search engines, URLs, domain names, and different Internet services.</li> <li>• Create a simple HTML5 web page using the basic HTML structure, headings, paragraphs, line breaks, and text formatting tags.</li> <li>• Create an HTML document using ordered lists, unordered lists, hyperlinks, and images.</li> <li>• Design a web page using HTML tables to display structured information.</li> <li>• Create an HTML form using different input controls such as text boxes, radio buttons, checkboxes, drop-down lists, and buttons.</li> <li>• Develop a web page that includes multimedia elements such as audio, video, iframes, and semantic HTML5 tags.</li> <li>• Apply Inline, Internal, and External CSS to style an HTML web page.</li> <li>• Design attractive web pages using CSS colours, backgrounds, borders, fonts, text formatting, hyperlinks, and lists.</li> <li>• Create different page layouts using the CSS Box Model, margins, padding, width, height, display properties, and positioning techniques.</li> <li>• Design responsive web pages using Flexbox, CSS Grid, and media queries for different screen sizes.</li> <li>• Create a simple website by applying basic web design principles, navigation menus, suitable typography, and colour combinations.</li> <li>• Create a GitHub account, create a repository, upload web pages.</li> <li>• Develop and publish a simple static website as a mini project by applying HTML5, CSS3, basic SEO practices, and AI-assisted web development tools.</li> </ul> | <p>15</p> |
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**Recommended Books:**

1. Kogent Learning Solutions Inc., "HTML 5 in simple steps", Dreamtech Press.
2. Murray, Tom/Lynchburg, "Creating a Web Page and Web Site", 2002.
3. Steven M. Schafer, "HTML, XHTML, and CSS Bible, 5ed", Wiley India.

## Physical Education – I

|                 |                               |                 |                  |
|-----------------|-------------------------------|-----------------|------------------|
| <b>BACS-119</b> | <b>Physical Education – I</b> | <b>4L:0T:0P</b> | <b>4 Credits</b> |
|-----------------|-------------------------------|-----------------|------------------|

### Course Outcomes (COs):

- CO1:** This section gives a brief overview of Meaning & Definition of Education and Physical Education, Aim and Objectives of Physical Education and also be able to apply this knowledge to analyse the Need and Importance of Physical Education and Sports.
- CO2:** This Section gives a brief overview and addressing areas such as Biological Principles of Growth and Development, Age and Sex differences, it also highlights various Effects of Heredity and Environment on Growth and Development, different types of Age and Body types.
- CO3:** This section gives a brief overview and provides a context for the History of Physical Education in India from Pre-Independence and Post-Independence from earliest times to the present. It provides updates on the various Sports Schemes in India
- CO4:** This section gives a brief overview of Athletics: Classification of Events and Basic Rules; Volleyball & Cricket: History of the Game Events, Basic Fundamentals, Equipment and Specifications, Marking/Layout of Field, Rules and Regulations (Number of Players, Number of Officials required and General Rules of Play) and Major Tournaments/Competitions.

| <b>Detailed Contents</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Contact hours</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <b>UNIT– I</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |
| <ul style="list-style-type: none"> <li>–Definition of the terms: Education, Physical Education, Physical Training and Coaching</li> <li>–Aim and Objectives of Physical Education</li> <li>–Need and Importance of Physical Education and Sports</li> </ul>                                                                                                                                                                                                                     | 15                   |
| <b>UNIT– II</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |
| <ul style="list-style-type: none"> <li>–Biological Principles                             <ul style="list-style-type: none"> <li>–Growth and Development</li> <li>–Age and Sex differences</li> <li>–Effects of Heredity and Environment on Growth and Development</li> <li>–Chronological Age, Physiological Age, Anatomical age and Mental age</li> </ul> </li> <li>–Body Types</li> </ul>                                                                                    | 15                   |
| <b>UNIT– III</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |
| <ul style="list-style-type: none"> <li>–Development of Physical Education and Sports in India                             <ul style="list-style-type: none"> <li>–Pre Independence</li> <li>–Post Independence</li> </ul> </li> <li>–Sports Schemes in India                             <ul style="list-style-type: none"> <li>–N.S.N.I.S.</li> <li>–Sports Authority of India</li> <li>–Punjab Sports Department</li> <li>–Punjab State Sports Council</li> </ul> </li> </ul> | 15                   |

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| <p style="text-align: center;"><b>UNIT-IV:</b><br/><b>(COMPULSORY IMPLEMENTATION PART)</b></p> <p><b>Games and Sports:</b> Athletics: Classification of Events and Basic Rules; Volleyball &amp; Cricket: History of the Game, Basic Fundamentals, Equipment and Specifications, Marking/Layout of Field, Rules and Regulations (Number of Players, Number of Officials required and General Rules of Play) and Major Tournaments/Competitions.</p> | 15 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|

**Recommended Books:**

1. Barrow, H.M. (1973). Man and His Movements: Principles of Physical Education, Lea and Febiger.
2. Reverse, R.S. (1978). Foundations of Physical Education Houghton Mifflin Co. Boston, Latest Edition.
3. Bucher, C.S. (1968). Foundations of Physical Education 5<sup>th</sup> Edition, at Louis C.V. Mosby. C.
4. Eraz Ahmad Khan. History of Physical Education-Scientific Book Co., Patna-4, Latest Ed.
5. Tadan D.K. (2001). Scientific basis of Physical Education and Sports, Friends Publication, New Delhi.
6. Singh Ajmer and Gill Jagtar. (2004). Essentials of Physical Education and Olympic Movement, Kalyani Publishers, Ludhiana.
7. Kang G.S. and Deol N.S. (2008). An Introduction to Health and Physical Education, 21<sup>st</sup> Century, Patiala.

# **SEMESTER II**

## General English - II

|          |                      |          |           |
|----------|----------------------|----------|-----------|
| BACS-201 | General English - II | 3L:0T:0P | 3 Credits |
|----------|----------------------|----------|-----------|

### Course Outcomes (COs):

**CO1:** Develop proficiency in the English Language

**CO2:** Learn essential rules of English Grammar and improve Vocabulary

**CO3:** Enhance writing skill through letter and paragraph writing

**CO4:** Improve the ability to read and comprehend English Poetry and Prose

### Course Content:

#### UNIT- I (Poetry) (10 Hrs.)

- i.) Where the Mind is Without Fear - Rabindranath Tagore
- ii.) I Know Why the Caged Bird Sings - Maya Angelou
- iii.) Goodbye Party for Miss Pushpa T.S. - Nissim Ezekiel

#### UNIT -II (Prose) (10 Hrs.)

- i.) Spoken English and Broken English – G.B. Shaw
- ii.) The Eyes are not here - Ruskin Bond
- iii.) The Conjuror's Revenge - Stephen Leacock

#### UNIT-III (Grammar & Vocabulary) (15 Hrs.)

- i.) Parts of Speech (Preposition, Conjunction and Interjection), Common Errors related to prescribed parts of speech
- ii.) Sentence Types on the basis of Function, Transformation of Simple sentences into different types
- iii.) Antonyms

#### UNIT- IV (Composition) (10 Hrs.)

- i.) Personal Letter writing
- ii.) Comprehension of unseen Prose Passage/ Paragraph writing
- iii.) Precis writing

### Recommended Text books:

1. *The Poetic Palette* (Orient Black swan, Second edition, 2016)
2. *Prose Parables* (Orient Black swan, 2013)
3. *English at work* (selection from poetry & prose Vijay Kumar, B.T. Seetha, A.V Suresh Kumar, Y.L. Srinivas, New Delhi; Macmillan, India Ltd.2012 (Punjab University) revised edition.
4. S. Chand's Wren & Martin's *High School English Grammar & Composition* – Latest Edition
5. *The Students' Companion* by Wilfred D. Best

## General Punjabi – II

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|----------|----------------------|----------|-----------|
| BACS-202 | General Punjabi – II | 3L:0T:0P | 3 Credits |
|----------|----------------------|----------|-----------|

### Course Outcomes (COs):

|     |                                                       |
|-----|-------------------------------------------------------|
| CO1 | ਵਿਦਿਆਰਥੀ ਵਿਹਾਰਕ ਅਤੇ ਕਿੱਤਾਮੁਖੀ ਲੇਖਣ ਵਿੱਚ ਨਿਪੁੰਨ ਹੋਣਗੇ। |
| CO2 | ਪੰਜਾਬੀ ਸੱਭਿਆਚਾਰ ਅਤੇ ਵਿਰਾਸਤ ਦੀ ਸਮਝ ਵਿਕਸਿਤ ਹੋਵੇਗੀ।      |

### Course Content:

| Detailed Contents                                                                                                                                                              | Contact hours |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>UNIT- I</b><br><b>ਪੰਜਾਬੀ ਕਹਾਣੀ ਅਤੇ ਸਮਾਜ</b> <ul style="list-style-type: none"> <li>ਚੋਣਵੀ ਪੰਜਾਬੀ ਨਿੱਕੀ ਕਹਾਣੀ</li> <li>ਕਲਾ, ਸਮਾਜਿਕ ਅਤੇ ਨੈਤਿਕ ਮੁੱਲ</li> </ul>                  | 11            |
| <b>UNIT- II</b><br><b>ਪੰਜਾਬੀ ਸੱਭਿਆਚਾਰ ਤੇ ਲੋਕਧਾਰਾ</b> <ul style="list-style-type: none"> <li>ਪੰਜਾਬੀ ਸੱਭਿਆਚਾਰ ਦੀਆਂ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ</li> <li>ਲੋਕ-ਤਿਉਹਾਰ, ਲੋਕ-ਗੀਤ, ਲੋਕ-ਨਾਚ</li> </ul> | 11            |
| <b>UNIT- III</b><br><b>ਪੰਜਾਬੀ ਵਿਹਾਰਕ ਲੇਖਣ</b> <ul style="list-style-type: none"> <li>ਬਿਨੈ-ਪੱਤਰ</li> <li>ਪੱਤਰ ਲੇਖਣ</li> <li>ਈ-ਮੇਲ ਲੇਖਣ</li> </ul>                               | 11            |
| <b>UNIT - IV</b><br><b>ਪੰਜਾਬੀ ਭਾਸ਼ਾਈ ਕੋਸ਼ਲ</b> <ul style="list-style-type: none"> <li>ਵਾਕ-ਰਚਨਾ</li> <li>ਅਨੁਵਾਦ (ਪੰਜਾਬੀ ↔ ਅੰਗਰੇਜ਼ੀ)</li> <li>ਸੰਖੇਪ ਰਚਨਾ</li> </ul>              | 11            |

### Recommended Books

- 1) ਪੰਜਾਬੀ ਸੱਭਿਆਚਾਰ ਦੀ ਜਾਣ-ਪਛਾਣ – ਡਾ. ਗੁਰਭਗਤ ਸਿੰਘ
- 2) ਚੋਣਵੀਆਂ ਪੰਜਾਬੀ ਕਹਾਣੀਆਂ – ਪੰਜਾਬੀ ਯੂਨੀਵਰਸਿਟੀ, ਪਟਿਆਲਾ
- 3) ਵਿਹਾਰਕ ਪੰਜਾਬੀ – ਡਾ. ਜਸਵੰਤ ਸਿੰਘ
- 4) ਅਨੁਵਾਦ ਕਲਾ ਅਤੇ ਸਿਧਾਂਤ – ਡਾ. ਹਰਭਜਨ ਸਿੰਘ

### MS-Excel and Data Management

|                 |                                     |                 |                  |
|-----------------|-------------------------------------|-----------------|------------------|
| <b>BACS-203</b> | <b>MS-Excel and Data Management</b> | <b>3L:0T:0P</b> | <b>3 Credits</b> |
|-----------------|-------------------------------------|-----------------|------------------|

#### Course Outcomes (COs):

|            |                                                                                                                                   |
|------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>CO1</b> | Create, format and manage spreadsheets using Microsoft Excel.                                                                     |
| <b>CO2</b> | Apply formulas, functions and data analysis tools for solving computational problems.                                             |
| <b>CO3</b> | Develop charts, pivot tables, dashboards and automated worksheets for effective data visualization.                               |
| <b>CO4</b> | Apply data management principles for organizing, maintaining and securing digital information.                                    |
| <b>CO5</b> | Use Microsoft Excel and cloud-based spreadsheet applications to prepare business reports and support data-driven decision-making. |

#### Course Content:

| <b>Detailed Contents</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Contact hours</b> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <p style="text-align: center;"><b>UNIT- I</b></p> <p style="text-align: center;"><b>Introduction to MS-Excel and Spreadsheet Fundamentals</b></p> <p>Introduction to spreadsheet software and its applications, overview of Microsoft Excel interface, workbook and worksheet concepts, creating, opening, saving and managing workbooks, understanding rows, columns and cells, data entry techniques, editing and formatting worksheets, number formats, alignment, fonts, borders, cell styles, worksheet navigation, inserting and deleting rows, columns and worksheets, page setup, printing worksheets, freeze panes, split windows, workbook protection, and introduction to Excel templates.</p>  | 10                   |
| <p style="text-align: center;"><b>UNIT II:</b></p> <p style="text-align: center;"><b>Formulas, Functions and Data Analysis</b></p> <p>Introduction to formulas and operators, cell referencing including relative, absolute and mixed references, mathematical, statistical and logical functions, use of functions such as SUM, AVERAGE, COUNT, COUNTA, MAX, MIN, ROUND, IF, AND, OR, NOT, SUMIF, COUNTIF, AVERAGEIF, text functions including LEFT, RIGHT, MID, LEN, CONCAT, UPPER, LOWER and TRIM, date and time functions, error handling, named ranges, formula auditing, sorting and filtering data, conditional formatting, data validation and introduction to basic data analysis techniques.</p> | 8                    |
| <p style="text-align: center;"><b>UNIT III: Advanced Excel Features and Data Visualization</b></p> <p>Working with tables, structured references, advanced sorting and filtering, subtotal and grouping features, pivot tables, pivot charts, creating</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 8                    |

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| professional charts including column, bar, line, pie, area, scatter charts, chart customization, importing data from external sources, exporting worksheets in different formats, worksheet linking, workbook consolidation, introduction to macros, recording simple macros and automating repetitive tasks.                                                                                                                                                                                                                                                                                                                                                                                   |    |
| <p style="text-align: center;"><b>UNIT IV: Data Management Concepts</b></p> <p>Introduction to data management, types of data, data collection methods, data organization and classification, file formats used for data storage, principles of data quality, data cleaning techniques, removing duplicates, handling missing values, data consistency, database concepts, records, fields and tables, primary keys, importing and exporting data between Excel and databases, data security, backup and recovery, privacy issues and ethical handling of digital data.</p>                                                                                                                     | 10 |
| <p style="text-align: center;"><b>UNIT V: Cloud-Based Data Management and Business Applications</b></p> <p>Introduction to cloud-based spreadsheet applications, Google Sheets interface and features, collaborative editing, sharing and permission management, version history, using templates, basic functions in Google Sheets, importing and exporting Excel files, introduction to business reporting, preparing invoices, payroll sheets, attendance records, inventory management, budgeting, sales reports and student result analysis using Excel, introduction to artificial intelligence features in spreadsheet software, and best practices for professional data management</p> | 9  |

### SUGGESTED BOOKS

1. Joan Lambert – *Microsoft Excel Step by Step*.
2. Greg Harvey, *Excel 2021 All-in-One For Dummies*, Wiley.
3. Paul McFedries – *Excel Data Analysis*.
4. Lokesh Lalwani, *Excel 2019 All-in-One*, BPB Publications.
5. Ramesh Bangia – *Computer Fundamentals and Office Automation*.
6. Alexis Leon – *Database Management Systems*.

## MS-Excel and Data Management

|                 |                                     |                 |                  |
|-----------------|-------------------------------------|-----------------|------------------|
| <b>BACS-204</b> | <b>MS-Excel and Data Management</b> | <b>0L:0T:2P</b> | <b>1 Credits</b> |
|-----------------|-------------------------------------|-----------------|------------------|

### Course Outcomes (COs):

**CO1** Create and format worksheets using spreadsheet software.

**CO2** Use formulas, functions, and cell references to perform calculations and solve simple problems.

**CO3** Organize, manage, and analyze data using sorting, filtering, conditional formatting, data validation, and Pivot Tables.

**CO4** Create charts and graphs to present data in a clear and meaningful way.

**CO5** Develop simple spreadsheet-based applications such as mark sheets, salary sheets, attendance records, inventory, employee databases, and sales reports.

### Course Content:

1. Creating and formatting worksheets.
2. Working with formulas and cell references.
3. Preparing student mark sheets.
4. Salary calculation using Excel functions.
5. Attendance management system.
6. Creating charts and graphs.
7. Applying conditional formatting.
8. Data validation techniques.
9. Sorting and filtering large datasets.
10. Creating Pivot Tables.
11. Importing CSV data into Excel.
12. Data cleaning and preparation.
13. Inventory management system in Excel.
14. Employee database management.
15. Sales performance analysis.

|                  |                            |                 |                  |
|------------------|----------------------------|-----------------|------------------|
| <b>UGVAC2502</b> | <b>Indian Constitution</b> | <b>2L:0T:0P</b> | <b>1 Credits</b> |
|------------------|----------------------------|-----------------|------------------|

**Course Content:**

**Unit 1: The Constitution - Introduction**

- The History of the Making of the Indian Constitution
- Preamble and the Basic Structure, and its interpretation
- Fundamental Rights and Duties and their interpretation
- State Policy Principles

**Unit 2: Union Government**

- Structure of the Indian Union
- President – Role and Power
- Prime Minister and Council of Ministers
- Lok Sabha and Rajya Sabha

**Unit 3: State Government**

- Governor – Role and Power
- Chief Minister and Council of Ministers
- State Secretariat

**Unit 4: Local Administration**

- District Administration
- Municipal Corporation
- Zila Panchayat

**Unit 5: Election Commission**

- a. Role and Functioning
- b. Chief Election Commissioner
- c. State Election Commission

**Suggested Learning Resources:**

1. Ethics and Politics of the Indian Constitution by Rajeev Bhargava, Oxford University Press, New Delhi, 2008
2. The Constitution of India by B.L. Fadia Sahitya Bhawan; New edition (2017)
3. Introduction to the Constitution of India by DD Basu Lexis Nexis; Twenty-Third, 2018 edition

**Suggested Software/Learning Websites:**

- a. <https://www.constitution.org/cons/india/const.html>
- b. <http://www.legislative.gov.in/constitution-of-india>
- c. <https://www.sci.gov.in/constitution>

- d. <https://www.toppr.com/guides/civics/the-indian-constitution/the-constitution-of-india/>

### **Cases**

- Rustom Cavasjee Cooper v. Union of India, (1970) 1 SCC 248
- State of Rajasthan v. Mohan Lal Vyas, AIR 1971 SC 2068 (confirmation of a private monopoly, not a violation of fundamental right)
- Mithilesh Garg v. Union of India, (1992) 1 SCC 168 : AIR 1992 SC 221 (Right to carry on business, not breached when it is liberalised)
- Chintamanrao v. The State of Madhya Pradesh, AIR 1951 SC 118 (scope of reasonable restrictions in relation to trade and occupation)
- Cooverjee B. Bharucha v. Excise Commissioner, Ajmer, AIR 1954 SC 220 (the reasonableness of the restriction imposed may depend upon the nature of the business and prevailing conditions including public health and morality)
- T. B. Ibrahim v. Regional Transport Authority. Tanjore, AIR 1953 SC 79
- Harman Singh v. RTA, Calcutta, AIR 1954 SC 190
- Dwarka Prasad Laxmi Narain v. State of U.P., AIR 1954 SC 224 ● State of Bombay v. R.M.D. Chamarbaugwala, AIR 1957 SC 699
- Parbhani Transport Coop. Society Ltd. V. Regional Transport Authority, Aurangabad, AIR 1960 SC 801
- State of Bombay v. R. M. D. Chamarbaugwala, (1957) S.C.R. 874,
- G.K.Krishnan vs State of Tamil Nadu, 1975 SCC (1) 375
- Automobile Transport (Rajasthan) Ltd. Vs State of Rajasthan, AIR 1962 SC 1406

### **Course Outcome(s):**

Upon completion of this course, students will be able to:

1. Constitutional Framework: Analyse the Indian Constitution's history, Preamble, Fundamental Rights, and basic structure.
2. Union Government Structure: Describe the roles of the President, Prime Minister, and the legislative bodies (Lok Sabha and Rajya Sabha).
3. State Government Mechanisms: Examine the powers of the Governor, Chief Minister, and the State Secretariat.
4. Local Administration: Assess the functioning of local government bodies like District Administration, Municipal Corporations, and Zila Panchayats.
5. Electoral Processes: Analyse the role of the Election Commission in conducting free and fair elections.
6. Application of Knowledge: Apply constitutional principles to contemporary political issues and evaluate governance effectiveness.

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|------------------|---------------------------------------|-----------------|-------------------|
| <b>UGSEC2509</b> | <b>Design Thinking and Innovation</b> | <b>1L:0T:0P</b> | <b>01 Credits</b> |
|------------------|---------------------------------------|-----------------|-------------------|

### **Course Outcomes (COs):**

By the end of the course, students will be able to –

- Propose real-time innovative product designs and Choose appropriate frameworks, strategies, techniques during prototype development.
- Know wicked problems and how to frame them in a consensus manner that is agreeable to all stakeholders using appropriate frameworks, strategies, techniques during prototype development.
- Analyse emotional experience and Inspect emotional expressions to better understand users while designing innovative products

### **Course Objectives:**

Operating under turbulent and uncertain business environment, ‘innovation’ has become the key driver of organizational success for all companies. Managers are expected to be leading this change by navigating companies into rapid evolution of new products/services and business models.

The primary focus of DTI is to help learners develop creative thinking skills and apply design based approaches/tools for identifying and implementing innovation opportunities into implementable projects. Following a learning-by-doing approach, the objectives of the course are –

1. Introduce students to design-based thinking approach to solve problems
2. Observe and assimilate unstructured information to well framed solvable problems
3. Introduce student to templates of ideation
4. Understand the importance of prototyping in the innovation journey 5. Implementing innovation projects

### **Course Content:**

#### **Unit 1: Basics of Design Thinking**

1. Understand the concept of innovation and its significance in business
2. Understanding creative thinking process and problem solving approaches
3. Know Design Thinking approach and its objective
4. Design Thinking and customer centricity – real world examples of customer challenges, use of Design Thinking to Enhance Customer Experience, Parameters of Product experience, Alignment of Customer Expectations with Product.

5. Discussion of a few global success stories like Airbnb, Apple, IDEO, Netflix etc.
6. Explain the four stages of Design Thinking Process – Empathize, Define, Ideate, Prototype, Implement

### **Unit 2: Learning to Empathize and Define the Problem**

1. Know the importance of empathy in innovation process – how can students develop empathy using design tools
2. Observing and assimilating information
3. Individual differences & Uniqueness Group Discussion and Activities to encourage the understanding, acceptance and appreciation of individual differences.
4. What are wicked problems
5. Identifying wicked problems around us and the potential impact of their solutions

### **Unit 3: Ideate, Prototype and Implement**

1. Know the various templates of ideation like brainstorming, systems thinking
2. Concept of brainstorming – how to reach consensus on wicked problems
3. Mapping customer experience for ideation
4. Know the methods of prototyping, purpose of rapid prototyping.
5. Implementation

### **Unit 4: Feedback, Re-Design & Re-Create**

1. Feedback loop, focus on User Experience, address ergonomic challenges, user focused design
2. Final concept testing,
3. Final Presentation – Solving Problems through innovative design concepts & creative solution

### **Text Books (Latest Edition):**

1. E Balaguruswamy (2023), Developing Thinking Skills (The way to Success), Khanna Book Publishing Company
2. Tim Brown, (2008), “Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation”, *Harvard Business Review*
3. 8 steps to Innovation by R T Krishnan & V Dabholkar, Collins Publishing

### **Reference Book**

1. Design Thinking by Nigel Cross, Bloomsbury

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## History – II

|                 |                     |                 |                  |
|-----------------|---------------------|-----------------|------------------|
| <b>BACS-211</b> | <b>History – II</b> | <b>4L:0T:0P</b> | <b>4 Credits</b> |
|-----------------|---------------------|-----------------|------------------|

### Course Outcomes (COs)

After successful completion of this course, students will be able to:

**CO1:** Explain the Ghaznavid and Ghurid invasions and evaluate their economic, social, and cultural impact on medieval India.

**CO2:** Examine the establishment and consolidation of the Delhi Sultanate, with special reference to Aibak, Iltutmish, Balban, Alauddin Khalji, Muhammad bin Tughlaq, and Firoz Shah Tughlaq.

**CO3:** Analyze the origin, doctrines, and impact of the Sufi and Bhakti movements, and assess the administrative and cultural achievements of the Vijayanagara Empire.

**CO4:** Describe the foundation and expansion of the Mughal Empire from Babur to Aurangzeb, with particular emphasis on Akbar's religious and Rajput policies and Aurangzeb's Deccan policy.

**CO5:** Evaluate the administrative structure, Mansabdari and Jagirdari systems, and the contributions of the Mughals to art, architecture, and literature.

**CO6:** Assess the rise of Maratha power under Shivaji, examine the features of Maratha administration, and analyze the major causes responsible for the decline of the Mughal Empire.

### Course Content:

#### SECTION–A

##### 1. The Ghaznavid and Ghurid Invasions

Invasions of Mahmud of Ghazni and Muhammad Ghuri

Economic, Social, and Cultural Consequences

##### 2. Foundation of the Delhi Sultanate

Qutb-ud-din Aibak

Iltutmish

Balban: Theory of Kingship and Blood and Iron Policy

##### 3. Consolidation of the Delhi Sultanate

Alauddin Khalji: Economic Reforms

Muhammad bin Tughlaq: Administrative Experiments

Firoz Shah Tughlaq: Reforms

## **SECTION–B**

1. **Sufism and the Bhakti Movement:** Origin, Doctrines, Impact
2. **The Vijayanagara Empire** Administration and Art and Architecture
3. **Foundation of the Mughal Empire**
  - Babur
  - Human

## **SECTION–C**

1. **The Mughal Empire under Akbar**
  - Consolidation of the Empire
  - Religious Policy
  - Rajput Policy
2. **Expansion of the Mughal Empire**
  - Jahangir
  - Shah Jahan
  - Aurangzeb: Deccan Policy
3. **Mughal Art, Architecture, and Literature**

## **SECTION–D**

1. **The Mughal Administrative System**
  - Central Administration
  - Mansabdari System
  - Jagirdari System
2. **The Rise of Maratha Power**
  - Shivaji
  - Maratha Administration
3. **Decline of the Mughal Empire**
  - Causes of Decline

**Suggested Readings:**

1. K.M. Ashraf, Life and Conditions of the People of Hindustan, New Delhi: Munshiram Manoharlal,1970.
2. M. Athar Ali, The Mughal Nobility Under Aurangzeb, Bombay: Asia Publishing House, 1970.
3. Irfan Habib, The Agrarian System of Mughal India (1556-1750), New Delhi: Oxford University Press,1999.
4. Mohammad Habib, and Khaliq Ahhmad Nizami, A Comrehensive History of India, Vol.V, 2 Parts- The Delhi Sultant (AD 1206-1526), New Delhi: People's Publishing House,1996.
5. A.B. Pandey, Early Medieval India, Allahabad: Central Book Depot,1979.
6. Later Medieval India, Allahabad: Central Book Depot,1981.

## Political Science – II

|                 |                               |                 |                  |
|-----------------|-------------------------------|-----------------|------------------|
| <b>BACS-212</b> | <b>Political Science – II</b> | <b>4L:0T:0P</b> | <b>4 Credits</b> |
|-----------------|-------------------------------|-----------------|------------------|

### Course Outcomes (COs):

#### Course Outcomes (COs)

|     |                                                                                                                   |
|-----|-------------------------------------------------------------------------------------------------------------------|
| CO1 | Introduction: Familiarize students with the discipline of Political Science, and its basic and important concepts |
| CO2 | Understand important Concepts: Power, Authority and Legitimacy.                                                   |
| CO3 | Rights and Duties: Awareness about rights, duties, liberty, equality and justice.                                 |
| CO4 | Comprehend Democracy and its theories                                                                             |

### Course Content:

| Detailed Contents                                                                                                                                                                                                                                                                                | Contact hours |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>UNIT- I</b> <ul style="list-style-type: none"><li>• <b>Political System:</b> Meaning, Characteristics and Functions</li><li>• <b>Political Culture:</b> Meaning, Characteristics and Types</li><li>• <b>Political Socialisation:</b> Meaning, Characteristics and Agencies</li></ul>          | 15            |
| <b>UNIT- II</b> <ul style="list-style-type: none"><li>• <b>Power:</b> Meaning, Nature and Features</li><li>• <b>Authority:</b> Meaning, Nature and Types</li><li>• <b>Legitimacy:</b> Meaning, Nature and Types</li></ul>                                                                        | 15            |
| <b>UNIT- III</b> <ul style="list-style-type: none"><li>• <b>Rights and Duties:</b> Meaning, Types and Relationship between the Two</li><li>• <b>Liberty:</b> Meaning, Types and its Safeguards</li><li>• <b>Equality:</b> Meaning, Types and Relationship between Liberty and Equality</li></ul> | 15            |
| <b>UNIT-IV</b> <ul style="list-style-type: none"><li>• <b>Justice:</b> Meaning and its various Dimensions</li><li>• <b>Democracy:</b> Meaning, Characteristics and Types</li><li>• <b>Theories of Democracy:</b> Liberal, Marxian and Elitist Theory</li></ul>                                   | 15            |

#### Recommended Books:

- David Easton, The Political System, Scientific Book Agency, Calcutta.
- J. C. Johari, Principles of Political Science, Sterling Publishers, New Delhi.
- S.P. Verma, Political Theory, Geetanjali Publishing House, New Delhi.
- A.C. Kapur, Principles of Political Science, S. Chand & Company, New Delhi.

## Mathematics – II

|                 |                         |                 |                  |
|-----------------|-------------------------|-----------------|------------------|
| <b>BACS-213</b> | <b>Mathematics – II</b> | <b>4L:0T:0P</b> | <b>4 Credits</b> |
|-----------------|-------------------------|-----------------|------------------|

### Course Outcomes (COs):

CO1: Solve systems of linear equations using matrix methods and analyse their consistency.

CO2: Determine the basis, dimension and rank associated with vector spaces and linear transformations.

CO3: Compute eigenvalues and eigenvectors and diagonalise matrices, including reduction of quadratic forms.

CO4: Apply the Gram–Schmidt process and understand the role of SVD in dimensionality reduction.

CO5: Relate linear-algebra techniques to computer-science applications such as graphics, machine learning and cryptography.

### Course Content:

| <b>Detailed Contents</b>                                                                                                                                                                                                                                                                                                                                                                                    | <b>Contact hours</b> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <b>Unit I (Matrices and Systems of Linear Equations)</b> <ul style="list-style-type: none"> <li>Matrix algebra, rank of a matrix, elementary row/column transformations.</li> <li>Solution of systems of linear equations: Gaussian elimination and Gauss–Jordan method.</li> <li>Consistency of linear systems; homogeneous and non-homogeneous systems.</li> <li>LU decomposition of matrices.</li> </ul> | 15                   |
| <b>Unit II (Vector Spaces and Linear Transformations)</b> <ul style="list-style-type: none"> <li>Vector spaces and subspaces; linear dependence and independence.</li> <li>Basis and dimension; rank–nullity theorem.</li> <li>Linear transformations and their matrix representation.</li> <li>Change of basis.</li> </ul>                                                                                 | 15                   |
| <b>Unit III (Eigenvalues, Eigenvectors and Diagonalization)</b> <ul style="list-style-type: none"> <li>Eigenvalues and eigenvectors; the characteristic equation.</li> <li>Cayley–Hamilton theorem.</li> <li>Diagonalization of matrices.</li> <li>Quadratic forms and their canonical (normal) forms.</li> </ul>                                                                                           | 15                   |
| <b>Unit IV (Inner Product Spaces and Applications)</b> <ul style="list-style-type: none"> <li>Inner product spaces; Gram–Schmidt orthogonalisation process.</li> <li>Orthogonal and orthonormal bases.</li> </ul>                                                                                                                                                                                           | 15                   |

- |                                                                                                                                                                                                 |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <ul style="list-style-type: none"><li>• Singular Value Decomposition (SVD): statement and elementary treatment.</li><li>• Applications of matrices in coding theory and cryptography.</li></ul> |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

## Elective English – II

|          |                       |          |           |
|----------|-----------------------|----------|-----------|
| BACS-214 | Elective English – II | 4L:0T:0P | 4 Credits |
|----------|-----------------------|----------|-----------|

### Course Outcomes (COs):

|     |                                                                                                                                                             |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1 | Familiarize students with various Literary terms frequently used in Literary texts to form a foundational understanding of varied writing styles and genres |
| CO2 | Enhance an understanding of Literary movement to contextualize Texts and their time period with its sociological aspects                                    |
| CO3 | To comprehend the Evolution of Drama in Elizabethan age through Shakespeare                                                                                 |
| CO4 | Enhance Communication Skills with special focus on Bacon's writing style and develop the ability to write in clear, coherent and objective manner           |

### Course Content:

| Detailed Contents                                                                                                                                                                                                                                         | Contact hours |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>UNIT- I</b><br><b>Literary Terms</b> <ul style="list-style-type: none"><li>Essay and its types (Expository, Argumentative, Descriptive, Narrative), Allegory and its types, Aphorism, Anti-thesis, Tragi-comedy, Humanism, Comedy of Humours</li></ul> | 15            |
| <b>UNIT- II</b><br><b>Literary Period 1500-1660</b> <ul style="list-style-type: none"><li>Renaissance as a Literary movement and its influence on Evolution of Drama with reference to major playwrights- Marlowe, Shakespeare, Ben Jonson</li></ul>      | 15            |
| <b>UNIT- III</b><br><b>Understanding Elizabethan Drama</b> <ul style="list-style-type: none"><li>Shakespeare's <i>The Merchant of Venice</i></li></ul>                                                                                                    | 15            |
| <b>UNIT-IV</b><br><b>Renaissance Prose</b> <ul style="list-style-type: none"><li>Francis Bacon's <b>Selected Essays</b>: Of Studies, Of Travel, Of Truth, Of Friendship, Of Marriage and Single Life</li></ul>                                            | 15            |

### Recommended Books:

1. *A Glossary of Literary Terms* by M.H. Abrams
2. Shakespeare's *The Merchant of Venice*
3. *An Outline History of English Literature* by William Henry Hudson
4. *Background to the Study of English Literature* by B. Prasad, Macmillan India Limited
5. Francis Bacon's *Essays or Counsels Civil and Moral*

## Economics – II

|                 |                       |                 |                  |
|-----------------|-----------------------|-----------------|------------------|
| <b>BACS-215</b> | <b>Economics – II</b> | <b>4L:0T:0P</b> | <b>4 Credits</b> |
|-----------------|-----------------------|-----------------|------------------|

### Course Outcomes (COs):

#### Course Outcomes (COs)

|             |                                                                                                                                   |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>CO1</b>  | Explain the fundamental concepts, theories, and indicators of macroeconomics and national income accounting.                      |
| <b>CO2</b>  | Analyze consumption, savings, employment, and economic growth using basic macroeconomic models.                                   |
| <b>CO3:</b> | Understand the functioning of money, banking systems, digital payments, financial inclusion, and emerging financial technologies. |
| <b>CO4:</b> | Evaluate inflation, fiscal and monetary policies, government budgeting, and contemporary economic challenges in the digital era.  |

### Course Content:

| <b>Detailed Contents</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Contact hours</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <p style="text-align: center;"><b>UNIT- I</b></p> <p><b>Introduction to Macroeconomics and National Income:</b> : Meaning, Nature and Scope of Macroeconomics; Micro vs. Macroeconomics; Circular Flow of Income (Two-sector Model); National Income Concepts—GDP, GNP, NDP, NNP, National Income (at Market Price and Factor Cost); Methods of Measuring National Income; Consumption and Saving Functions; Determinants of Consumption and Saving; Introduction to Economic Indicators and their significance in policy formulation.</p> | 15                   |
| <p style="text-align: center;"><b>UNIT- II</b></p> <p><b>Income, Employment and Economic Growth:</b> Concepts of Income and Employment; Keynesian Theory of Employment (Basic Framework); Aggregate Demand and Aggregate Supply; Multiplier Concept (Elementary); Types and Causes of Unemployment; Employment Generation in the Digital Economy; Economic Growth vs. Economic Development; Sustainable Development Goals (SDGs); Green Economy and Digital Economy.</p>                                                                   | 15                   |
| <p style="text-align: center;"><b>UNIT- III</b></p> <p><b>Money, Banking and Digital Economy:</b> Evolution and Functions of Money; Demand and Supply of Money; Commercial Banking System and its Functions; Central Banking and Role of the Reserve Bank of India; Digital Banking, Internet Banking, Mobile Banking; UPI, Digital Wallets, AEPS, BHIM; Financial Inclusion; FinTech; Digital Public Infrastructure (DPI); Introduction to Cybersecurity in Digital Payments and Emerging Trends in Digital Finance.</p>                  | 15                   |
| <p style="text-align: center;"><b>UNIT-IV</b></p> <p><b>Inflation, Public Finance and Economic Policies:</b> Meaning, Types and Causes of Inflation; Effects of Inflation on Consumers, Businesses and IT Industry; Fiscal Policy and Monetary Policy; Government Budget and Budget</p>                                                                                                                                                                                                                                                    | 15                   |

|                                                                                                                                                                                                                                                                      |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Deficit; Public Expenditure and Taxation (Basic Concepts); Indian Economic Reforms (1991 onwards); Contemporary Economic Challenges—Digital Divide, Artificial Intelligence and Employment, Startup Ecosystem, Make in India, Digital India, and Atmanirbhar Bharat. |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

### **Text Books**

- 1) D.N. Dwivedi – *Macroeconomics: Theory and Policy*
- 2) T.R. Jain & Ashok Gupta – *Macroeconomics*
- 3) H.L. Ahuja – *Macroeconomics: Theory and Policy*
- 4) N. Gregory Mankiw – *Principles of Economics* (Macroeconomics Sections)

### **Reference Books**

1. Mishkin, Frederic S. – *The Economics of Money, Banking and Financial Markets*
2. Ruddar Datt & K.P.M. Sundaram – *Indian Economy*
3. Uma Kapila – *Indian Economy: Performance and Policies*
4. RBI Publications on Digital Payments and Financial Inclusion
5. Government of India, *Economic Survey* (Latest Edition)
6. NITI Aayog Reports on Digital Economy and Sustainable Development

## Elective Punjabi – II

|                 |                              |                 |                  |
|-----------------|------------------------------|-----------------|------------------|
| <b>BACS-216</b> | <b>Elective Punjabi – II</b> | <b>4L:0T:0P</b> | <b>4 Credits</b> |
|-----------------|------------------------------|-----------------|------------------|

### Course Outcomes (COs):

|     |                                           |
|-----|-------------------------------------------|
| CO1 | ਪੰਜਾਬੀ ਕਵਿਤਾ ਦੀਆਂ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਨੂੰ ਸਮਝਣਾ। |
| CO2 | ਕਹਾਣੀ ਸਾਹਿਤ ਦਾ ਵਿਸ਼ਲੇਸ਼ਣ ਕਰਨਾ।            |
| CO3 | ਅਨੁਵਾਦ ਕੌਸ਼ਲ ਵਿਕਸਿਤ ਕਰਨਾ।                 |
| CO4 | ਮੀਡੀਆ ਵਿੱਚ ਪੰਜਾਬੀ ਦੀ ਭੂਮਿਕਾ ਨੂੰ ਸਮਝਣਾ।    |

### Course Content:

| Detailed Contents                                                                                                                                                                                                                                         | Contact hours |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <p style="text-align: center;"><b>UNIT- I</b></p> <ul style="list-style-type: none"> <li>ਚੋਣਵੀਂ ਪੰਜਾਬੀ ਕਵਿਤਾ</li> <li>ਪ੍ਰਮੁੱਖ ਕਵੀ ਅਤੇ ਰਚਨਾਵਾਂ : ਚਸਮਾ (ਭਾਈ ਵੀਰ ਸਿੰਘ), ਹੱਲ ਵਾਹੁਣ ਵਾਲੇ (ਪੂਰਨ ਸਿੰਘ), ਅੰਨਦਾਤਾ (ਅੰਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ)</li> </ul>                     | 15            |
| <p style="text-align: center;"><b>UNIT- II</b></p> <ul style="list-style-type: none"> <li>ਚੋਣਵੀਂ ਪੰਜਾਬੀ ਕਹਾਣੀ</li> <li>ਪ੍ਰਮੁੱਖ ਕਹਾਣੀਕਾਰ ਤੇ ਕਹਾਣੀਆਂ: ਪੇਮੀ ਦੇ ਨਿਆਏ (ਸੰਤ ਸਿੰਘ ਸੇਖੋਂ),</li> <li>ਕੁਲਫੀ (ਸੁਜਾਨ ਸਿੰਘ), ਤੂੜੀ ਦੀ ਪੰਡ (ਕੁਲਵੰਤ ਸਿੰਘ ਵਿਰਕ)</li> </ul> | 15            |
| <p style="text-align: center;"><b>UNIT- III</b></p> <ul style="list-style-type: none"> <li>ਅਨੁਵਾਦ ਕਲਾ</li> <li>ਦੋ-ਭਾਸ਼ਾਈ ਸੰਚਾਰ</li> </ul>                                                                                                                 | 15            |
| <p style="text-align: center;"><b>UNIT-IV</b></p> <ul style="list-style-type: none"> <li>ਮੀਡੀਆ ਅਤੇ ਪੰਜਾਬੀ</li> <li>ਸੋਸ਼ਲ ਮੀਡੀਆ ਲੇਖਣ</li> </ul>                                                                                                            | 15            |

### Recommended Books:

- ਡਾ. ਮਹਿਲ ਸਿੰਘ (ਸੰਪਾਦਕ) , ਸਾਹਿਤ ਦੇ ਰੰਗ, ਰਵੀ ਸਾਹਿਤ ਪ੍ਰਕਾਸ਼ਨ ਅੰਮ੍ਰਿਤਸਰ
- ਡਾ. ਰਵਿੰਦਰ ਰਵੀ – ਪੰਜਾਬੀ ਕਵਿਤਾ ਦਾ ਇਤਿਹਾਸ
- ਡਾ. ਜਸਵਿੰਦਰ ਸਿੰਘ – ਅਨੁਵਾਦ ਸਿਧਾਂਤ ਅਤੇ ਅਭਿਆਸ

## Sociology – II

|          |                |          |           |
|----------|----------------|----------|-----------|
| BACS-217 | Sociology – II | 4L:0T:0P | 4 Credits |
|----------|----------------|----------|-----------|

### Course Outcomes (COs):

|     |                                                                        |
|-----|------------------------------------------------------------------------|
| CO1 | To understand changing trends in family and marriage as an institution |
| CO2 | To know the concepts related to gender                                 |
| CO3 | To explore various social problems of the society                      |
| CO4 | To understand the meaning of human rights and inclusion                |

### Course Content:

| Detailed Contents                                                                                                                                                                                                                                                                                                                                                                                                      | Contact hours |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>UNIT- I</b><br><b>Family and Marriage / ਪਰਿਵਾਰ ਅਤੇ ਵਿਆਹ</b> <ul style="list-style-type: none"><li>Family: Meaning and Types of Family; Changing Trends in Family in Contemporary Society / ਪਰਿਵਾਰ: ਅਰਥ ਅਤੇ ਕਿਸਮਾਂ; ਸਮਕਾਲੀ ਸਮਾਜ ਵਿੱਚ ਪਰਿਵਾਰ ਵਿੱਚ ਬਦਲਦੇ ਰੁਝਾਨ</li><li>Marriage: Meaning, Types and Changing Trends in Marriage / ਵਿਆਹ: ਅਰਥ, ਕਿਸਮਾਂ ਅਤੇ ਬਦਲਦੇ ਰੁਝਾਨ</li></ul>                                          | 15            |
| <b>UNIT- II</b><br><b>Gender and Society / ਲਿੰਗ ਅਤੇ ਸਮਾਜ</b> <ul style="list-style-type: none"><li>Gender Equality / ਲਿੰਗ ਸਮਾਨਤਾ Meaning and Different aspects of gender equality (ਅਰਥ ਅਤੇ ਲਿੰਗ ਸਮਾਨਤਾ ਦੇ ਵੱਖ-ਵੱਖ ਪਹਿਲੂ)</li><li>Women Empowerment / ਮਹਿਲਾ ਸਸ਼ਕਤੀਕਰਨ Meaning and Importance (ਅਰਥ ਅਤੇ ਮਹੱਤਤਾ)</li><li>Gender Sensitization: Meaning, Gender Roles (ਲਿੰਗ ਸੰਵੇਦਨਸ਼ੀਲਤਾ: ਅਰਥ ਅਤੇ ਲਿੰਗ ਭੂਮੀਕਾਵਾਂ)</li></ul> | 15            |
| <b>UNIT- III</b><br><b>Social Problems / ਸਮਾਜਿਕ ਸਮੱਸਿਆਵਾਂ</b> <ul style="list-style-type: none"><li>Poverty / ਗਰੀਬੀ Meaning, types and causes (ਅਰਥ, ਕਿਸਮਾਂ ਅਤੇ ਕਾਰਨ)</li><li>Unemployment / ਬੇਰੁਜ਼ਗਾਰੀ Meaning, Types, Causes and Consequences (ਅਰਥ, ਕਿਸਮਾਂ, ਕਾਰਨ ਅਤੇ ਨਤੀਜੇ)</li></ul>                                                                                                                                 | 15            |

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| <ul style="list-style-type: none"> <li>• Drug Abuse: Meaning, Causes and Consequences, Treatment and Rehabilitation (ਨਸ਼ਿਆਂ ਦੀ ਸਮੱਸਿਆ: ਅਰਥ, ਕਾਰਨ, ਨਤੀਜੇ, ਇਲਾਜ ਅਤੇ ਪੁਨਰਵਾਸ)</li> </ul>                                                                                                                                                                                                                                                                                                                                        |    |
| <p style="text-align: center;"><b>UNIT-IV</b></p> <p><b>Human Rights and Inclusion / ਮਨੁੱਖੀ ਅਧਿਕਾਰ ਅਤੇ ਸਮਾਵੇਸ਼</b></p> <ul style="list-style-type: none"> <li>• Human Rights: Meaning, Nature and Characteristics (ਮਨੁੱਖੀ ਅਧਿਕਾਰ: ਅਰਥ, ਪ੍ਰਕਿਰਤੀ ਅਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ)</li> <li>• Social Justice: Meaning and Dimensions of Social Justice (ਸਮਾਜਿਕ ਨਿਆਂ: ਅਰਥ ਅਤੇ ਸਮਾਜਿਕ ਨਿਆਂ ਦੇ ਪਹਿਲੂ)</li> <li>• Inclusive Society: Meaning, Inclusive development and SDGs (ਸਮਾਵੇਸ਼ੀ ਸਮਾਜ: ਅਰਥ, ਸਮਾਵੇਸ਼ੀ ਵਿਕਾਸ ਅਤੇ ਟਿਕਾਊ ਵਿਕਾਸ ਟੀਚੇ)</li> </ul> | 15 |

Recommended Books:

1. Ram Ahuja – Indian Society
2. Yogendra Singh – Modernization of Indian Tradition
3. Nadeem Hasnain – Indian Society and Culture

## Elective Computer – II

|                 |                               |                 |                  |
|-----------------|-------------------------------|-----------------|------------------|
| <b>BACS-218</b> | <b>Elective Computer – II</b> | <b>4L:0T:0P</b> | <b>4 Credits</b> |
|-----------------|-------------------------------|-----------------|------------------|

### Course Outcomes (COs):

- CO1: Express the logical flow used in Programming.
- CO2: Design algorithms for solving various real life problems
- CO3: Implement programs using C.
- CO4: Choose the right data type and statements for programs.
- CO5: Explain various concepts of C programming language.

### Course Content:

| Detailed Contents                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Contact hours |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>UNIT I:</b><br><br><b>Logic Development:</b> Data Representation, Flowcharts, Problem Analysis, Decision Trees/Tables, Pseudo code and algorithms. Fundamentals: Character set, Identifiers and Key Words, Data types, Constants, Variables, Expressions, Statements, Symbolic Constants.<br><b>Operations and Expressions:</b> Arithmetic operators, Unary operators, Relational Operators, Logical Operators, Assignment and Conditional Operators, Library functions. | 15            |
| <b>UNIT II:</b><br><br><b>Control Statements:</b> While, Do-while and For statements, Nested loops, If-else, Switch, Break – Continue statements.<br><b>Functions:</b> Brief overview, defining, accessing functions, passing arguments to function, specifying argument data types, function prototypes.<br><b>Arrays:</b> Defining, processing arrays, passing arrays to a function, introduction to multi-dimensional arrays.                                            | 15            |
| <b>UNIT III:</b><br><b>Strings:</b> String declaration, string functions and string manipulation Program<br>Introduction to Structures, unions and Pointers<br><b>File Handling:</b> File Operations, Processing a Data File                                                                                                                                                                                                                                                | 15            |
| <b>UNIT IV: Compulsory Implementation Part</b> <ul style="list-style-type: none"> <li>• Draw flowcharts and write algorithms for simple real-life problems such as finding the largest number, calculating simple interest, and checking whether a number is even or odd.</li> <li>• Write C programs to understand the basic structure of a C program and perform simple arithmetic operations using variables and operators.</li> </ul>                                   | 15            |

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <ul style="list-style-type: none"> <li>• Write C programs using different data types, constants, variables, and expressions to perform basic calculations.</li> <li>• Write C programs using <b>if-else</b> and nested <b>if-else</b> statements to solve decision-making problems.</li> <li>• Write C programs using the <b>switch</b> statement to develop a simple menu-driven calculator.</li> <li>• Write C programs using <b>for</b>, <b>while</b>, and <b>do-while</b> loops to generate multiplication tables.</li> <li>• Write C programs using nested loops to display different number and star patterns.</li> <li>• Write C programs using user-defined functions to perform mathematical calculations.</li> <li>• Write C programs to perform operations on one-dimensional arrays.</li> <li>• Write C programs to perform string operations using standard library functions.</li> <li>• Write C programs to understand pointers by accessing variables through pointers.</li> <li>• Write C programs to perform file handling operations such as creating, opening, writing, reading, and closing text files.</li> </ul> |  |
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**Text Books:**

1. Programming in ANSI C, E. Balagurusami, Fourth Edition, Tata McGraw Hill.
2. Let us C, Yashvant P Kanetkar, Seventh Edition, BPB Publications, New Delhi.
3. The C Programming Language, Kernighan & Richie, Second Edition, PHI Publication.

**Reference Books:**

1. Object Oriented Programming, Lafore R, Third Edition, Galgotia Publications
2. Programming in C, Byron S. Gottfried, Second Edition, McGraw Hills.
3. Problem Solving and Programming in C, R.S. Salaria, Second Edition
4. Programming in C, Atul Kahate.

## Physical Education – II

|                 |                                |                 |                  |
|-----------------|--------------------------------|-----------------|------------------|
| <b>BACS-219</b> | <b>Physical Education – II</b> | <b>4L:0T:0P</b> | <b>4 Credits</b> |
|-----------------|--------------------------------|-----------------|------------------|

### Course Outcomes (COs):

**CO1:** This section gives a brief overview of Cell: Meaning, Structure and Functions of Cell, Skeletal System: Types of Bones, Names of the Various Bones of the Body, Various Types of Joints and also be able to apply this knowledge to know about the role of Muscular System: Various Types of Muscles and Structure of Skeletal Muscles.

**CO2:** This Section gives a brief overview of role of Nutrition: Elements of Balanced Diet, Functional Diet/Food for achieving the peak performance in sports competition, Pre, During & Post Competition diet for Sports Persons, Doping in Sports, Artificial Intelligence in Nutrition Assistance.

**CO3:** This section gives a brief overview of concept of Meaning and Scope of Health Education. Hygiene Problems of Educational Institutions and their Remedial Measures and Harmful effects of Air and Water Pollution and its Remedial Measures and Communicable Diseases: Mode of Transmission, Prevention and control of Tuberculosis, Hepatitis (A & B), Rabies and HIV/AIDS

**CO4:** This section gives a brief overview of Athletics: Classification of Events and Basic Rules; Handball & Kho-Kho: History of the Game, Basic Fundamentals, Equipment and Specifications, Marking/Layout of Field, Rules and Regulations (Number of Players, Number of Officials required and General Rules of Play) and Major Tournaments/Competitions.

### Course Content:

| Detailed Contents                                                                                                                                                                                                                  | Contact hours |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>UNIT– I</b><br>–Cell: Structure and Functions<br>–Skeletal System: Types of Bones, Names of the Various Bones of the Body, Various Types of Joints<br>–Muscular System: Various Types of Muscles, Structure of Skeletal Muscles | 15            |
| <b>UNIT– II</b><br>–Nutrition: Elements of Balanced Diet, Functional Diet/Food<br>–Artificial Intelligence in Nutrition Assistance<br>–Pre, During & Post Competition diet for Sports Persons<br>–Doping in Sports                 | 15            |
| <b>UNIT– III</b><br>–Meaning and Scope of Health Education. Hygiene Problems of Educational Institutions and their Remedial Measures<br>–Air and Water Pollution and its Remedial Measures                                         | 15            |

|                                                                                                                                                                                                                                                                                                                                                                                             |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| –Communicable Diseases: Mode of Transmission, Prevention and control of Tuberculosis, Hepatitis (A & B), Rabies and HIV/AIDS                                                                                                                                                                                                                                                                |    |
| <b>UNIT-IV: (COMPULSORY IMPLEMENTATION PART)</b><br><b>Games and Sports:</b> Athletics: Classification of Events and Basic Rules; Handball & Kho-Kho: History of the Game, Basic Fundamentals, Equipment and Specifications, Marking/Layout of Field, Rules and Regulations (Number of Players, Number of Officials required and General Rules of Play) and Major Tournaments/Competitions. | 15 |

#### **Recommended Books:**

1. Atwal & Kansal. (2016). “AP Text Book of Health, Physical Education & Sports”, AP Publishers.
2. R. D. Kansal. (2009). “Physical Education and Sports”, Modern Publishers, India.
3. John Raynor. (1983). Anatomy and Physiology, New York Harper & Row.
4. Rose & Wilson. (1981). Foundations of Anatomy and Physiology, 5<sup>th</sup> Edition.
5. Parror, J.W. (1983). Anatomy and Physiology for Physical Education Teachers, Lend; Edward Arnold Healthful Living McGraw Hill.
6. Singh Ajmer & Gill Jagtar. (2004). Essentials of Physical Education and Olympic Movement, Kalyani Publishers, Ludhiana.
7. Kang G.S. & Deol N.S. (2008). An Introduction to Health and Physical Education 21<sup>st</sup> Century, Patiala.
8. Memmler et al. (1992). “Structure & Function of the Human Body”, Lippincott Williams & Wilkins; Subsequent.



