BOARD OF OPEN SCHOOLING AND SKILL EDUCATION (BOSSE), Sikkim
(Established under Act No. 14 of 2020 of the Sikkim Legislative Assembly)
Amdo Golai NH-10, Near RBI Bank Gangtok, Sikkim (India) 737102

Senior Secondary Curriculum

Welcome Note from the Chairperson

Dear Learner,

Welcome to the Board of Open schooling and Skill Education, Sikkim (BOSSE), which was established under Act No. 14 of 2020 of the Sikkim Legislative Assembly. BOSSE is first of its kind in the country in the PPP (Public-Private Partnership) mode. BOSSE has been empowered to enhance access to school education, especially for out of school children and drop outs, contributing towards **"Quality Education for all".**

Congratulations for taking this wise step of taking admission to this Board that provides optimum flexibility to ease your studies. Here, you have the advantage of being able to study at your own place, at your own pace and at your own convenience. You can avail 9 chances in 5 years to pass in 5 subjects and qualify for the certificate. However, we would wish you to earn the certificate in the first attempt only. Still, if you are not able to do so, don't be disheartened. Try again, try again and you will succeed!

I'm delighted to place the curricula of various subjects at senior secondary level in your hands. The academic standards of BOSSE are at par with any other School Education Board -National or State level. **The curricula of all subjects are in accordance with the recommendations/goals of NEP (National Education Policy) 2020.** Our Academic Advisory Committee and the Syllabus Committees comprise experienced and accomplished professionals in the field of education. The self-learning materials presented in the form of books as well as uploaded on the website have been meticulously prepared by a team of seasoned educationists/educators from Universities, Colleges, Schools and other institutions.

I'm sanguine that our efforts will enable you to develop into a worthy human being and citizen who makes sensible choices, create a positive impact on society and contribute immensely towards the progress of the nation, even humanity as a whole.

Spread your wings and touch the sky! Live a meaningful purposeful life, with dignity and high morality! Serve your beloved nation selflessly! Work for the betterment of society and humanity at large!

Wishing you all the best for your future life and career!

Dr. Kuldeep Agarwal

Contents

ENGLISH

RATIONALE

English is considered to be a global language. In India, it is regarded as a second language and also official language. In today's time, the learners are required to be equipped with sufficient English Language abilities so that they may interact meaningfully with the global world ahead of them.

English as a language came to India with Britishers and came to dominate the diverse culture of Indian languages that existed during those times. Its curriculum must find its place with other Indian languages in different states and various other subjects. English education should aim at strengthening English teaching and learning, along with National Languages/Regional Languages/Mother Tongues. The firm national vision behind teaching of English is the creation of multilinguals who can enrich all our languages. They alone can understand and speak several language/s.

English provides learners with an important international communication tool. It enables them to exchange information, acquire advanced scientific and technical knowledge. They can explore other cultures, leading to intercultural understanding. It will promote a sense of global citizenship, contribute to the development of personal qualities and competence.

The curriculum prepared will enable students to frame and develop their communicative proficiency in the four language skills (listening, speaking, reading, writing). They will be able to understand elements of language. They will be practicing English Usage/Use (way of writing and speaking). Learning English will help the learners and achieve good placements in the future.

CURRICULUM OBJECTIVES

The overall aims of the English curriculum are to develop in learners:

- A positive attitude towards the learning of English language and literature.
- Proficiency in listening, speaking, reading and writing skills in English language.
- Comprehension power in verbal and written English language.
- The competence for correct usage of grammar.
- Sensitivity to national and world culture.
- The ability to communicate with others clearly in English language.
- The ability to use learning tools like the dictionary, thesaurus, library, internet etc., to regularly enhance their knowledge and understanding.
- Curiosity and interest in extensive as well as selective intensive readings.
- Self-learning skills to enable them to become independent learners.

- Ability of participation in conversations, discussions, etc., on topics of mutual interest.
- Competence in writing business letters, official communication, email, etc.
- Ability to read and understand poems with proper rhythm and intonation.
- Ability to read and admire prose and poetry (essays, drama, skits, novels, etc.).
- Sensitivity and sensibility to our environment, including natural environment, social environment and inner environment.

ASSUMPTIONS

While constructing the curriculum, we believe that learners:

- have learnt English for three years.
- are able to understand simple questions, instructions and directions provided orally.
- are able to answer the questions in English.
- are able to read and comprehend words and phrases.
- are able to read and comprehend short simple sentences.
- are familiar with the use of some punctuation.
- have a working vocabulary of at least 200-250 words.

COURSE STRUCTURE

The current curriculum/study material consists of V Modules and 30 lessons. The study hours and marks allotted are as follows.

Modules	No of Lessons	Study Hours	Marks allotted
Module 1	2	15	06
Module 2	7	45	14
Module 3	5	38	12
Module 4	8	78	26
Module 5	8	64	22
Assignment			20
Total	**30**	**240**	**100**

MODULE I: IDEA OF ENGLISH

Time: 15Hours **Marks: 6**

Lesson 1: Values, Knowledge and Wisdom: The Ultimate Aim of Education

(Time allocation: 08 hours)

- Universal and Eternal values
- Vices and Virtues
- Linguistic Connotation (hidden meaning) and Sources of Knowledge & Wisdom in Ancient *Bharat*
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson 2: Origin and Evolution of English **(Time allocation: 07 hours)**

- Origin of English Language
- Status of English Language
- History of English Language and Literature
    - History of English in India
    - Indian writings in English

MODULE II: GRAMMAR

(*to be taught directly as well as included as exercise in Prose and Poetry Lessons)

Time: 45Hours **Marks: 14**

Lesson 3: Parts of Speech: Noun, Pronoun and Adjective

(Time allocation: 06 hours)

- Noun and its Types
- Pronounsand its Types
- Adjectives: Forms and Types

Lesson 4: Parts of Speech: Verb **(Time allocation: 06 hours)**

- Verb: Five Forms of Verb: Infinitive (Present, Past, Past Participle and Present Participle); Gerund;
- Types of Verb: Finite and Infinite; Regular and Irregular; Transitive and Intransitive
- Tenses

Lesson 5: Parts of Speech: Adverb, Preposition and Conjunction

(Time allocation: 06 hours)

- Adverb
- Preposition and Conjunction

Lesson 6: Direct and Indirect Speech **(Time allocation: 07 hours)**

- Direct Speech
- Indirect Speech
- Pattern of reporting statements
- Rules of changing direct speech into indirect speech

Lesson 7: Active and Passive Voice **(Time allocation:07 hours)**

- Active Voice
- Passive Voice
- Use of Active and Passive Voice

Lesson 8: Phrase, Clause and Sentence **(Time allocation: 9 hours)**

- Phrase
  - Prepositional Phrase
  - Adjective Phrase
- Clause
  - Main Clause and Subordinate Clause
  - Types of Subordinate Clause

- Noun Clause
- Adjective Clause
- Adverb Clause
- Sentence
  - Simple Sentence and Compound Sentence
  - Complex Sentence and Compound-Complex Sentence

Lesson 9: Punctuation **(Time allocation: 04 hours)**

- Full stop
- Question Mark
- Use of Comma
- The Semicolon and the Colon
- Underlining (Italics)
- Quotation Marks
- Apostrophe
- Hyphen, Parentheses, Brackets and Dash

MODULE III: WRITING SKILLS

Time: 38 Hours **Marks: 12**

Lesson 10: Academic Writing **(Time allocation: 06 hours)**

- Note-making
- Summarizing
- Sub-titling

Lesson 11: Paragraph and EssayWriting **(Time allocation: 08hours)**

- Writing of a Paragraph
- Writing of an Essay

Lesson 12: Letter and Application Writing

(Time allocation: 10 hours)

- Writing of a Letter
- Writing of an Application

Lesson 13: Creative Writing: Prose **(Time allocation: 07 hours)**

- History of Story
- Literary Foundation of Story
- Elements of Story
- Staging of Writing Process
- Writing for Children

Lesson 14: Creative Writing: Poetry **(Time allocation: 07 hours)**

- Concept and Evolution of Poetry
- Elements of Poetry
- Types of Poetry
- Figures of Speech – Use of Personification, Simile and Metaphor, Sounds and Rhyming in Poetry
- Writing Poetry

MODULE IV: PROSE TEXT

Time: 78 Hours **Marks: 26**

MODULE V: POETRY

Time: 64Hours **Marks: 22**

पाठ्यचर्या

हिन्दी

उच्चतर माध्यमिक

आवश्यकता

भारत की भाषिक विविधता एक जटिल चुनौती तो पेश करती ही है, लेकिन वह कई प्रकार के अवसर भी देती है। भारत केवल इस मामले में ही अनूठा नहीं है कि यहाँ अनेक प्रकार की भाषाएँ बोली जाती हैं, बल्कि उन भाषाओं में अनेक भाषा–परिवारों का प्रतिनिधित्व भी है।

अगर हम भाषा शिक्षण के लिए स्कूल में कोई कार्यक्रम शुरू करते हैं तो यह महत्वपूर्ण है कि बच्चे की सहज भाषायी क्षमता को पहचानें और याद रखें कि भाषाएँ सामाजिक–सांस्कृतिक रूप से बनती हैं और हमारे दैनंदिन व्यवहार से बदलती रहती हैं। शिक्षा में भाषाओं के लिए आदर्श यही है कि उनका इसी संसाधन के आधार पर विकास हो और साक्षरता के विकास के साथ (लिपियों में ब्रेल भी) अकादमिक भाषा के रूप में इसे विकसित करने के लिए समृद्ध भी किया जाए। जिन बच्चों में भाषा संबंधी अक्षमता हो उनके लिए मानक संकेत भाषा अपनाई जाए जिससे उनके सतत और पूर्ण विकास को समर्थन मिलता रहे। विद्यार्थियों की भाषिक क्षमता की पहचान से उनका स्वयं के और अपनी सांस्कृतिक जड़ों के प्रति विश्वास भी बढ़ेगा।

भाषा शिक्षण केवल भाषा की कक्षा तक सीमित नहीं होता। विज्ञान, सामाजिक विज्ञान या गणित की कक्षाएँ भी एक तरह से भाषा की ही कक्षा होती हैं। किसी विषय को सीखने का मतलब है उसकी अवधारणाओं को सीखना, उसकी शब्दावली को सीखना, उनके बारे में आलोचनात्मक ढंग से चर्चा करना और उनके बारे में लिख सकना।

कहानी, कविता, गीतों और नाटकों के माध्यम से बच्चे अपनी सांस्कृतिक धरोहर से जुड़ते हैं और इससे उनको अपने अनुभव विकसित करने और दूसरों के प्रति संवेदनशील होने के अवसर मिलते हैं। हम यह भी ध्यान दिला दें कि बच्चे इस प्रकार की गतिविधियों के माध्यम से व्याकरण भी अधिक आसानी से सीख सकते हैं न कि उबाऊ व्याकरण शिक्षण से।

हिंदी के पठन को संवैधानिक रूप से मान्यता दी गई है। वर्तमान में हिंदी में रोजगार की अपार संभावनाएं बढ़ गई है जैसे हिंदी में विज्ञापन हॉलीवुड फिल्मों की डबिंग, हिंदी समाचार चौनल हिंदी फिल्म का लेखन हिंदी गीत लेखन हिंदी कॉल सेंटर गूगल में हिंदी भाषा। भारत सरकार के सभी विभागों , बैंकों व एन–जी–ओ– में हिंदी अधिकारी। अध्यापन के क्षेत्र में भी हिंदी अध्यापक की मांग बढ़ती जा रही है। सूचना व संप्रेषण के युग में सोशल मीडिया बुनियादी जरूरत बन गया है। इंटरनेट की पहुँच ग्रामीण क्षेत्रों तक आसानी से हो गई हैं जिस कारण भारत में आज हिंदी का बोलबाला बढ़ रहा है।

हिंदी भाषा का माध्यमिक स्तर का यह पाठ्यक्रम इन सभी बातें को ध्यान में रखते हुए तैयार किया गया है।

पूर्व अपेक्षाएँ

इस पाठ्यक्रम में प्रवेश से पूर्व शिक्षार्थी से अपेक्षा की जाती है कि वहः

- सामान्य स्तर की गद्य और काव्य रचनाएँ औसत गति से पढ़ सकेय
- बोलने और लिखने में त्रुटिहीन वाक्य–संरचना का प्रयोग कर सकेय
- सामान्य शब्दों की वर्तनी ठीक तरह से लिख सकेय
- सामान्य भाषा में अपनी बात बोलकर या लिखकर अभिव्यक्त कर सकेय
- हिंदी के लगभग 5000 शब्दों की पहचान कर सके और 3500 शब्दों का अपनी भाषा में प्रयोग कर सके।

पाठ्चर्या उद्देश्य

इस पाठ्यक्रम को पूरा कर लेने के बाद शिक्षार्थीः

- भाषिक तत्त्वों तथा हिंदी के भाषिक कौशलों की क्षमता का विकास कर उनका प्रयोग कर सकेंगेय
- हिंदी के माध्यम से अन्य विषयों के अध्ययन से विभिन्न विषयों का वर्णन कर सकेंगेय
- व्यावहारिक तथा व्यावसायिक संदर्भों में हिंदी'' का सटीक प्रयोग कर सकेंगेय
- साहित्य को पढ़कर उसका उल्लेख व समीक्षा कर सकेंगेय
- विभिन्न मानवीय मूल्यों तथा सद्पवृत्तियों का विश्लेषण कर सकेंगेय
- भारतीय सभ्यता और संस्कृति के गुण–दोषों को स्पष्ट कर सकेंगेय
- विभिन्न विषयों, संदर्भों और प्रसंगों पर स्वतंत्र रूप से चिंतन–मनन कर मौलिक रूप से अपनी बात प्रस्तुत कर सकेंगेय
- हिंदी में स्वतंत्र रूप से अपने भावों तथा विचारों को मौखिक तथा लिखित रूप में अभिव्यक्त कर सकेंगेय
- धैर्य और एकाग्रता के साथ सुनकर अपने विचार व्यक्त कर सकेंगेय
- श्रुत विचारों, भावों के आधार पर निष्कर्ष निकाल कर प्रस्तुत कर सकेंगेय
- नी बात को शुद्ध तथा बोधगम्य उच्चारण के साथ उचित यति–गति, बलाघात, अनुतान सहित बोल सकेंगे।

पाठ्यक्रम संरचना

इस विषय में ट मॉड्यूल और 31 पाठ शामिल किए गए हैं। अध्ययन के घंटे और आवंटित अंक इस प्रकार हैं।

मॉड्यूल	पाठों की संख्या	अध्ययन के घंटे	आवंटित अंक
मॉड्यूल 1	3	26	08
मॉड्यूल 2	4	40	15
मॉड्यूल 3	3	34	09
मॉड्यूल 4	12	88	32
मॉड्यूल 5	9	52	16
क्रियात्मक / परियोजना कार्य			20
कुल	31	240	100

मॉड्यूल प्रू हिन्दी का विचार

समयः 26 **घंटे** **अंकः08**

पाठ 1: मूल्य, बुद्धि और ज्ञान,: शिक्षा का परम उद्देश्य (**आवंटित समयः 08 घंट**)

- सार्वभौमिक एवं शाश्वत मूल्य
- गुण और अवगुण
- प्राचीन भारत में ज्ञान और बुद्धि का भाषाई अर्थ और स्रोत
- ज्ञान का अर्थ एवं ज्ञान का अनुशासन
- अंतःविषय और बहुविषयक दृष्टिकोण

पाठ 2: हिंदी सहित्य का इतिहास (भाग–1) (**आवंटित समयः 09 घंटे**)

पाठ 3: हिंदी सहित्य का इतिहास (भाग–2) (**आवंटित समयः 09 घंटे**)

मॉड्यूल ध : व्याकरण

समयः 40 घंटे **अंकः**15

पाठ 4**:** शब्दभेद

संज्ञा, सर्वनाम, विशेषण
(**आवंटित समयः 08 घंटे**)

पाठ 5**: क्रिया** (**आवंटित समयः 08 घंटे**)

पाठ 6**: क्रिया – विशेषण, संबद्धबोधक, समुच्चयबोधक, विस्मयादिबोधक** (**आवंटित समयः 08 घंटे**)

पाठ 7**:** विराम चिन्ह (**आवंटित समयः 09 घंटे**)

मॉड्यूल ppru **लेखन कौशल**

समयः 34 घंटे **अंकः 09**

पाठ 8**:** निबंध लेखन (**आवंटित समयः 09 घंटे**)

पाठ 9**:** पत्र लेखन (**आवंटित समयः 09 घंटे**)

पाठ 10**:** विज्ञापन लेखन डायरी, संवाद, प्रसंग (thmंजनतम), लेखन (**आवंटित समयः 08 घंटे**)

मॉड्यूल pt ru **गद्य**

समयः 88 घंटे **अंकः** 32

पाठों की संख्याः 12

मॉड्यूल tru **काव्य/पद्**

समयः 52 **घंटे** **अंकः** 16

पाठों की संख्याः 9

ACCOUNTANCY

RATIONALE

Accountancy is an integral part of Business Studies. Accounting education is an experience, a practice in learning to learn, and a part of education for business. There are far more reasons to study accounting than learners may realize and its influence in business go far beyond ledgers, Excel sheets and invoices.

Accountancy being a branch of mathematical science that is concerned with the financial information about a business entity to users such as shareholders and managers can help learners in their career after school so that they can become entrepreneurs. It gives students the tools to make real life financial decisions in a constantly changing and uncertain world

It can enable learners to learn and discover the various causes of successes and failures of different business enterprises.

During the outbreak of COVID 19 and after effects of it, Accounting is playing a crucial role in the management of its economic impact and accounting is in demand like never before, playing a critical frontline role in managing the economic impact of COVID-19, and helping people adapt business models in uncertain and changing circumstances.

With the evolution of different finance/accounting functions and technology, professionals are now realizing the diversity a foundation in accounting offers, leading to either a traditional numbers-focused role or a more dynamic and business-focused career.

Accounting techniques are important as parts of a data-processing apparatus, providing deeply significant data regarding enterprise prior experience. The objective of accounting is to provide insight into the results of management decisions. The aim of accounting education is to help learners learn to learn to become professional accountants. The material should be often mixed, theory with practice (the why and the how), and often indicate the contact of the course with non-accounting courses.

The subject emphasizes on developing basic understanding about the nature of accounting information to develop among students' logical reasoning, careful analysis and considered judgment. The technological revolution has further provided new dimensions like computerized accounting system, E- finance, accounting as an information system and forensic accounting etc, have gained importance in the recent times. This curriculum of Accountancy will familiarize the learners with the basic concepts and functioning of computerized accounting systems emerging today.

CURRICUM OBJECTIVES

The objectives of the Accountancy curriculum are to:

- Enable the learners to understand what the subject is all about, its knowledge and wisdom, origin and evolution.
- Cultivate the interest of the learners in that subject and encourage them to pursue it as a career.
- Familiarize students with new and emerging areas in the preparation and presentation of financial statements.
- Acquaint students with basic accounting concepts and accounting standards.
- Develop the skills of designing need based accounting database.
- Appreciate the role of ICT in business operations.
- Develop an understanding about recording of business transactions and preparation of financial statements.
- Enable students with accounting for Not-for-Profit organizations, accounting for Partnership Firms and company accounts.
- To undertake a project after completing the chapter on preparation of financial statements.
- Allow the learners to select any business of their choice or develop the transaction of imaginary business.
- To run through the chapters and make the project an interesting process. The amounts should emerge as more realistic and closer to reality.

COURSE STRUCTURE

Module	No of Lessons	Study Hours	Marks Allotted
Module I	3	25	10
Module II	3	20	05
Module III	6	40	10
Module IV	5	35	10
Module V	4	30	10
Module VI	4	40	15
Module VII	3	25	10
Module VIII	3	25	10
Project Work			20
Total	31	240	**100**

MODULE I: IDEA OF ACCOUNTANCY

Time: 25 hours **Marks: 10**

Lesson 1: Values, Wisdom and Knowledge: The Ultimate Aim of Education

(Time allocation: 8hours)

- Universal and Eternal Values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge & Wisdom in Ancient Bharat

- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson 2: Knowledge and wisdom in Accountancy (Time allocation: 8 hours)

- What Accountancy is all about?
- Practices followed in Indian Accounting System and its relevance
- Traditional Indian Negotiable Instruments.
- Relationship of Accountancy with Other Subjects
- Scope of Accountancy

Lesson 3: Origin and Evolution of Business Studies (Time allocation: 9 hours)

- Use of Accountancy as Business Language in India.
- Major landmarks in the Development of Accountancy and its Applied Branches.
- India's Contribution towards the Development of Global Accounting System.

MODULE II: BASICS OF ACCOUNTING

Time: 20 hrs **Marks: 5**

Lesson 4: Accounting – An Introduction (Time allocation: 7 hours)

- Book Keeping and Accounting : Meaning, Objectives, Importance and Limitations
- Branches of Accounting – Financial, Cost Management, Human Resources, Social, Forensic and Environment
- Accounting as an Information System and its Users
- Basic Accounting Terms

Lesson 5: Accounting Concepts (Time allocation: 7 hours)

- Meaning and Significance of Accounting Principles and Concepts : Generally Accepted Accounting Principles
- Business Entity Concept

- Money Measurement Concept
- Going Concern Concept
- Accounting Period concept
- Accounting Cost Concept
- Dual Aspect Concept
- Realization Concept
- Accrual Concept

Lesson 6: Accounting Conventions and Standards (Time allocation: 6 hours)

- Meaning, Need and Significance of Accounting Conventions :
- Accounting Standards (only names)

MODULE III: ACCOUNTING PROCEDURE

Time: 40 hours Marks: 10

Lesson 7: Accounting for Business Transactions (Time Allocation: 7 Hours)

- Source Documents and Accounting Vouchers
- Accounting Equation and Effect of Business Transactions on Accounting Equation.
- Rules of Accounting
- Basis of Accounting
- Double Entry Mechanism

Lesson 8: Journal (Time Allocation: 7 Hours)

- Meaning and Format
- Compound Entries
- Adjusting Entries
- Closing Entries
- Classification of Journal – General Journal and Special Purpose Subsidiary Books

Lesson 9: Ledger **(Time Allocation: 6 Hours)**

- Meaning and Importance
- Posting of Journal Entries into Ledger Accounts
- Balancing of Ledger Accounts

Lesson 10: Cash Book **(Time Allocation: 6 Hours)**

- Meaning, Importance and Preparation of Cash Book
- Simple Cash Book, Bank Column Book , Petty Cash Book

Lesson 11: Bank Reconciliation Statement **(Time Allocation: 7 Hours)**

- Bank Reconciliation Statement – Meaning and Need
- Reasons of Difference between Cash Book Balance and Pass Book /Bank Statement
- Preparation of Bank Reconciliation Statement

Lesson 12: Special Purpose Books **(Time Allocation: 7 Hours)**

- Purchases and Purchases Returns Book
- Sales Book and Sales Returns Books
- Bills Receivable Book and Bills Payable Book
- Journal Proper

MODULE IV: ACCOUNTING PROCESS

Time: 35 **Marks: 10**

Lesson 13: Depreciation **(Time Allocation: 6 Hours)**

- Meaning of Depreciation
- Causes of Depreciation
- Objectives of Charging Depreciation
- Factors Affecting Depreciation
- Methods of Charging Depreciation

Lesson 14: Provisions and Reserves (Time Allocation: 5 Hours)

- Provision: Meaning and Need
- Meaning of Reserve
- Types of Reserves

Lesson 15: Bills of Exchange (Time Allocation: 8 Hours)

- Meaning
- Terms of Bill
- Recording of Bill Transactions
- Dishonor of Bill
- Renewal of Bill
- Insolvency of The Acceptor
- Retiring A Bill Under Rebate

Lesson 16: Trial Balance, Errors and Their Rectification (Time Allocation: 8Hours)

- Meaning and Objectives of Preparing Trial Balance
- Preparation of Trial Balance
- Meaning of Accounting Errors and Their Location
- Classification of Accounting Errors
- Rectification of Accounting Errors
- Rectification of Errors Through Suspense Account

Lesson 17: Computerized Accounting (Time Allocation: 8 Hours)

- Role of Computers in Accounting
- Advantages and Limitations of Computerized Accounting
- Salient Features of CAS

- Accounting Software and its Usage – Tally ,Quick Book, Busy, Zoho Books, Marg ERP-9, Vyapar, My Book, Busy Accounting, Khata Book, My Bill Book
- Accounting Information System (AIS)

MODULE V: FINANCIAL STATEMENTS

Time: 30 Hours **Marks:10**

Lesson 18: Financial Statements – I (Time Allocation: 8 Hours)

- Financial Statements : Meaning and Objectives
- Trading Account and its Preparation
- Profit and Loss Account and its Preparation
- Balance Sheet : Classifications of Assets and Liabilities
- Preparation of Balance Sheet

Lesson 19: Financial Statements – II (Time Allocation: 6 Hours)

- Need for Accounting Adjustments
- Adjustments and Their Incorporation
- Adjustments in Preparation of Financial Statements

Lesson 20: Accounting for Not- For- Profit Organizations (Time Allocation: 8 Hours)

- Not for Profit Organizations- Meaning and Characteristics
- Specific Items Related to Not For Profit Organization's Accounting
- Receipts and Payment Account - Meaning , Need and Preparation Related to Not for Profit Organization's Accounting
- Income and Expenditure Account : Meaning, Need and Preparation
- Adjustment of Items in Income and Expenditure Account

Lesson 21: Accounts from Incomplete Records (Time Allocation: 8 Hours)

- Preparation of Balance Sheet
- Meaning
- Uses of Single Entry System
- Ascertaining Profit from Incomplete Records
- Conversion Method Including
- Calculation of Missing Figures

MODULE VI: PARTNERSHIP ACCOUNTS

Time: 40 hours **Marks: 15**

Lesson 22: Partnership Basics (Time allocation: 10 hours)

- Partnership –Meaning and Characteristics
- Partnership Deed
- Provisions of Partnership Act in the Absence of Partnership Deed
- Methods of Maintaining Capital Accounts
- Calculation of Interest on Capital and Interest on Drawing
- Profit And Loss Appropriation Account : Meaning and Preparation

Lesson 23: Reconstitution of Partnership - Admission of a Partner

(Time Allocation: 12 Hours)

- Admission of a Partner
- Goodwill: Meaning , Factors Affecting Goodwill and Valuation
- Treatment of Goodwill
- Accounting Treatment of Goodwill When There is Change in the Profit Sharing Ratio of Existing Partners.
- Revaluation of Assets And Reassessment of Liabilities
- Profit and Loss Appropriation Account

Lesson 24: Reconstitution of Partnership - Retirement and Death of a Partner

(Time Allocation: 12 Hours)

- Retirement – Meaning, Calculation of New Profit Sharing Ratio and Gaining Ratio
- Treatment of Goodwill
- Revaluation of Assets And Reassessment of Liabilities
- Treatment of Accumulated Reserves and Undistributed Profit
- Settlement of Retiring Partner's Claim
- Adjustment of Remaining 'Partners'Capital Accounts
- Death Of a Partner
- Calculation of Amount Payable to the Legal Representative of Deceased Partner

Lesson 25: Dissolution of a Partnership Firm(Time Allocation: 6 Hours)

- Dissolution of Partnership Firm – Meaning
- Difference between Dissolution of Partnership and Partnership Firm
- Closure of Books of Accounts by Preparing Realization Accounts

MODULE VII: COMPANY ACCOUNTS

Time: 25 hours **Marks:10**

Lesson 26: Share Capital **(Time allocation: 9 hours)**

- Company–Meaning and Characteristics
- Shares-Meaning and its Kinds
- Share Capital–Meaning and its Types
- Private Placement of Shares – Meaning
- Issue of Shares to Promoters – Meaning
- Procedure of Issue of Shares at Par and Premium
- Full, Under and Over Subscription

- Accounting Treatment of Issue of Shares for Consideration other than Cash
- Calls in Advance and Calls in Arrears - Meaning and Accounting Treatment

Lesson 27: Forfeiture and Reissue of Shares (Time Allocation: 7 Hours)

- Forfeiture of Share – Meaning & Accounting Treatment
- Reissue of Forfeited Shares – Meaning and Accounting Treatment

Lesson 28: Issue of Debentures (Time Allocation: 9 Hours)

- Debenture Meaning and Types
- Issue of Debentures at Par, Premium and Discount
- Issue of Debentures to Vendors for Consideration other than Cash
- Issue of Debentures as Collateral Security
- Writing of Discount on Issue of Debentures and Loss on Issue of Debentures

MODULE VIII: ANALYSIS OF FINANCIAL STATEMENTS

Time: 25 hours Marks: 10

Lesson 29: Financial Statements Analysis – an Introduction (Time allocation: 9 hours)

- Financial Statements of a Company
- Financial Statements Analysis (Meaning, Purpose and Parties Interested)
- Techniques and Tools of Financial Analysis
- Common Size Statements and Comparative Statement

Lesson 30: Accounting Ratios (Time allocation: 7 hours)

- Meaning , Significance , Limitation , Classification and Calculation of Activity , Solvency , Liquidity and Profitability Ratios
- Limitations of Accounting Ratios

Lesson 31: Cash Flow Statement **(Time Allocation: 9 Hours)**

- Meaning ,Objectives and Advantages
- Method of Preparing Cash Flow Statement – Indirect Method Only
- Treatment of Special Items: Depreciation and Sale of Fixed Assets

BIOLOGY

RATIONALE

Biology in the initial years was a science that dealt majorly with the description of life forms and habitats. The curiosity of mankind led to deeper dive into anatomy and physiology aspect of life forms and their evolution by nature in various types of habitats. The never-ending enthusiasm of findings answers to the questions, facts and phenomenon's etc. in latter times led to trans disciplinary studies on various aspects of biology. This developed various branches of biology like structural biology, biochemistry, biotechnology, and biostatistics and so on.

The studies in biology ranges from the largest well-known system like the earth to smallest like that of atoms. The Earth being a biosphere in ecological sciences and atoms& molecules of biomolecules in biochemistry. It's fascinating to note about these lifeless molecules working in synchronous way to make living organisms of different sizes and types. The quest to know everything has also led to study of life and habitat outside the earth in astrobiology for dissemination of mankind.

This course focuses on the development of understandings and applies the various concepts, tool and techniques in biology for the benefit of mankind and the nature.

CURRICULUM OBJECTIVES

This course will:

- Enable the learners to understand what the subject is all about, its knowledge and wisdom, origin and evolution.
- Cultivate the interest of the learners in that subject and encourage them to pursue it as a career.
- Appreciate the work of Indian and other scientists in this field
- Be aware of ethical issues related to science and technology
- Develop understandings on diversity of biomaterials
- Gain understandings of terms, concepts, principles, process, and cycle in biology as whole

- Appreciate biodiversity and linkages in ecosystem for balance of nature
- Find solution to environmental pollutions of various kind by interdisciplinary, transdisciplinary and VUCA design thinking ways
- Link and develop the role of biology to various fields for benefit of mankind by linking with the sustainable development goals (SDGs)of United nations (UN)
- Develop scientific attitude and thinking to solve problems around.

COURSE STRUCTURE

The current curriculum comprises of VIII Modules and 37 lessons. The study hours and marks allotted are as follows:

Module	**No. of Lessons**	**Study Hours**	**Marks allotted**
Module I	3	18	08
Module II	4	36	10
Module III	2	17	04
Module IV (Part A & B)	16	80	32
Module V	3	18	06
Module VI	3	18	06
Module VII	4	36	10
Module VIII	2	17	04
Practical/Project Work			20
Total	**37**	**240**	**100**

*Note: 20% weightage is assigned to practicals and

80% weightage is assigned to theory (including assignment).*

MODULE I: IDEA OF BIOLOGY

Time: 18hrs. **Marks: 08**

Lesson 1: Values, Wisdom and Knowledge: The Ultimate Aim of Education

(Time allocation: 06 hours)

- Universal and Eternal values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge & Wisdom in Ancient Bharat
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson 2: Knowledge and Wisdom in Biology (Time allocation: 06 hours)

- What Biology Is All About?
- It's Various Branches and Their Importance.
- Relationship of Biology With Other Subjects
- Contribution of Ayurveda in Life Style – Apakvyaaahar, Kitchen Remedies, Usage of Vegetation as Medicine.
- Acupressure, Massage Etc.
- Scope

Lesson 3: Origin and Evolution of Biology (Time allocation: 06 hours)

- The Most Primitive Biological Evidences in Support Of People of Early Civilizations.
- Glorious History of Biology and Its Application in Ancient India
- Ancient/ Medieval / Modern Indian Biologists and Their Contribution to The World
- Major Landmarks in the Development of Biology and Its Applied Branches.
- Achievements / Awards in The Field of Biology
- Customs, Religion, Culture Interface With Biology Correlation Between Religious Festival and Crops, Eating Habits Etc
- Some Myths and Facts

MODULE II: THE LIVING WORLD: EVOLOUTION AND CLASSIFICATION

Time: 36 hrs. **Marks: 10**

Lesson 4: The Living World (Time allocation: 09 hours)

- Characteristics of Life
- Origin of Life
- Spontaneous Generation
- Oparin-Haldane Theory
- Stanley Miller's Experiment
- Contribution of Sir Jagadish Chandra Bose
- Organic Evolution
- Evidence of Evolution
- Evolutionary Interpretation of Dash Avtar (Indian Mythology) With Scientific Support.
- Theories By Other Indian Scientists
- Sources Of Variation
- Natural Selection
- Isolation and Speciation.
- Hardy Weinberg Equilibrium
- Need For Classification of Organisms, Principles of Classification and Taxonomic Categories
- Linnaeus and Binomial Nomenclature
- Position of Virus
- Characteristics
- Structure and Habit of Virus
- Infective Properties Of Viruses (General Account Of TMV, Polio, HIV, Influenza Virus, Bacteriophage)
- Viroids
- Scheme of Five Kingdom Classification
- Merits and Demerits of Five-Kingdom Classification

Lesson 5: Biological Classification (Time allocation: 09 hours)

- Protoctista

- Kingdom Monera
- Kingdom Protista
- Kingdom Fungi

Lesson 6: Plant Kingdom **(Time allocation: 09 hours)**

- Classification
- Algae
- Bryophytes
- Pteridophytes
- Gymnosperms
- Angiosperms
- Plant Life Cycles and Alternation of Generations

Lesson 7: Animal Kingdom **(Time allocation: 09 hours)**

- Classification and Characteristics of Kingdom Animalia Up To Phyla
- Porifera
- Cnidaria
- Platyhelminthes
- Aschelminths
- Annelida
- Arthropoda
- Mollusca
- Echinodermata
- Hemichordate
- Chordata up to class Mammalia

MODULE III: CELLS AND TISSUES

Time: 17hrs. **Marks: 04**

Lesson 8: Cell: The Basic Unit of Life **(Time allocation: 08 hours)**

- What is a Cell?
- Cell Theory

- An Overview of Cell
- Prokaryotic Cells
- Eukaryotic Cells
- Cell Cycle
- Cell Division
- M Phase
- Significance of Mitosis
- Meiosis
- Significance of Meiosis

Lesson 9: Tissues: **(Time allocation: 09 hours)**

- Tissues
- Plant Tissues - Classification, Structure and Functions of Meristematic and Differentiated Tissues.
- Animal Tissues – Structure and Functions of Epithelial, Connective, Muscular and Nervous Tissues

MODULE IV: MORPHOLOGY AND PHYSIOLOGY OF PLANTS AND ANIMALS (PART I &II)

Time: 80 hrs. **Marks: 32**

Lesson 10: Plant: Root System **(Time allocation: 05 hours)**

- Characteristics and Regions of Root
- Primary Structure of Dicot And Monocot Root
- Secondary growth in Dicot Roots
- Types and Modifications of Roots
- Common Functions of Roots

Lesson 11: Plant: Shoot System (Time allocation: 05 hours)

- The Root
- The Stem
- Classification of Stem.
- The Leaf
- The Inflorescence
- The Flower
- The Fruit
- The Seed
- Semi-Technical Description of a Typical Flowering Plant
- Description of Some Important Families

Lesson 12: Plants: Absorption, Transport and Water Loss (Time allocation: 05 hours)

- Brief Description of Minerals and Nutrients Used By the Plants.
- Water Relation - Permeability, Diffusion, Osmosis, Plasmolysis, Active and Passive Absorption and Movement, Imbibitions, Water Potential.
- Transpiration - The Process and Its Significance.
- Factors Affecting Rate of Transpiration Opening and Closing Mechanism of Stomata (Potassium Ion Theory)
- Factors Affecting Stomatal Movements.
- Guttation and Factors Affecting Rate of Guttation
- Translocation of Solutes.
- Reverse Osmosis Process (RO System)

Lesson 13: Plant: Nutrition (Time allocation: 05 hours)

- Methods to Study the Mineral Requirements of Plants in Detail.
- Essential Mineral Elements
- Mechanism of Absorption of Elements
- Translocation of Solutes Soil as Reservoir of Essential Elements Deficiency Symptoms of Elements
- Mode of Nutrition in Plants - Autotrophic, Heterotrophic, Saprophytic, Parasitic And Insectivorous Plants

Lesson 14: Plant: Nitrogen Metabolism **(Time allocation: 05 hours)**

- Molecular Nitrogen
- Nitrogen Fixation (Biological and Abiological)
- Nitrogen Fixation By Free Living Organisms and Symbiotic Nitrogen Fixation
- Nitrate and Ammonia Assimilation By Plants
- Amino Acid Synthesis By Plants
- Nitrogen Cycle

Lesson 15: Plant: Photosynthesis **(Time allocation: 05 hours)**

- Early Experiments
- Site of Photosynthesis
- Pigments involved in Photosynthesis
- Light Reaction
- The Electron Transport
- Atp and Nadph
- The C4 Pathway Photorespiration
- Factors Affecting Photosynthesis

Lesson 16: Plant: Respiration **(Time allocation: 05 hours)**

- Do Plants Breathe?
- Glycolysis
- Fermentation
- Aerobic Respiration
- The Respiratory Balance Sheet
- Amphibolic Pathway
- Respiratory Quotient

Lesson 17: Plants: Reproduction **(Time allocation: 05 hours)**

- Asexual and Sexual Reproduction

- Apomixis Reproduction in Flowering Plants – Juvenility
- Flowering
- Factor Affecting Flowering (Photoperiodism)
- Flower As a Reproductive Organ
- Development of Gametes in Flowering Plants
- Polyembryony Pollination - Types and Agencies
- Adaptation To Promote Cross Pollination
- Fertilization and Seed Formation
- Seed - Structure Of Dicot and Monocot Seeds
- Seed Germination
- Parthenocarpy.
- Natural And Artificial Vegetative Propagation
- Advantages And Disadvantages Of Vegetative Propagation
- Micropropagation
- Advantages Of Micropropagation

Lesson 18: Growth and Development in Plants (Time allocation: 05 hours)

- Growth
- Determining the Age of Plants
- Techniques of Determining Age of Plants (Carbon Dating Etc)
- Differentiation
- Dedifferentiation
- Redifferentiation
- Development
- Plant Growth Regulators
- Photoperiodism
- Vernalization

Lesson 19: Animals -Nutrition and Digestion (Time allocation: 05 hours)

- Nutrition and Its Types
- Digestive System of Invertebrate

- Digestive System and Process in Humans (Ingestion, Digestion, Absorption, Assimilation, Egestion)
- Intracellular and Intercellular Digestion, Role Of Enzymes and Hormones in Digestion
- Disorders of Digestive System

Lesson 20: Respiration **(Time allocation: 05 hours)**

- Respiratory Organs
- Mechanism of Breathing Exchange of Gases
- Transport of Gases
- Regulation of Respiration
- Disorders of Respiratory System

Lesson 21: Transportation of Body Fluids and Homeostasis **(Time allocation: 05 hours)**

- Blood
- Lymph (Tissue Fluid)
- Circulatory Pathways
- Double Circulation
- Regulation of Cardiac Activity
- Disorders of Circulatory System
- Concept of Homeostasis
- Regulation of Body Fluids
- Feedback Mechanism - Positive and Negative
- Thermoregulation Including Skin.

Lesson 22: Human Excretory System **(Time allocation: 05 hours)**

- Urine Formation
- Function of the Tubules
- Mechanism of Concentration of the Filtrate
- Regulation of Kidney Function
- Micturition

- Role of Other Organs in Excretion
- Disorders of the Excretory System

Lesson 23: Locomotion and Movement **(Time allocation: 05 hours)**

- Skeletal System
- Joints
- Muscle
- Types of Movement
- Disorders of Muscular and Skeletal System

Lesson 24: Coordination and Control **(Time allocation: 05 hours)**

- Neural System
- Human Neural System
- Neuron as Structural and Functional Unit of Neural System
- Central Neural System
- Reflex Action and Reflex Arc
- Sensory Reception and Processing
- Endocrine Glands and Hormones
- Human Endocrine System
- Hormones of Heart, Kidney and Gastrointestinal Tract
- Mechanism of Hormone Action

Lesson 25: Reproduction in Humans **(Time allocation: 05 hours)**

- The Male Reproductive System
- The Female Reproductive System
- Gametogenesis
- Menstrual Cycle
- Fertilisation and Implantation
- Pregnancy and Embryonic Development

- Parturition and Lactation
- Reproductive Health – Problems and Strategies
- Population Explosion and Birth Control
- Medical Termination of Pregnancy
- Sexually Transmitted Diseases
- Infertility

MODULE V: GENETICS: SCIENCE OF HEREDITY

Time: 18 hrs. **Marks: 06**

Lesson 26: Principles and Applications of Genetics (Time allocation: 06 hours)

- Heredity and Variation
- Theories by Indian biologists
- Regarding Genes or Inheritance.
- Mendel's Laws of Inheritance
- Inheritance of One Gene
- Inheritance of Two Genes
- Sex Determination
- Mutation
- Genetic Disorders
- Impact Of Inheritance Of Genes In Marriage System
- **Lesson 27: Molecular Inheritance and Gene Expression (Time allocation: 06 hours)**
- The DNA
- The Search for Genetic Material
- RNA World
- Replication
- Transcription
- Genetic Code
- Translation
- Regulation of Gene Expression

- Human Genome Project
- DNA Fingerprinting

Lesson 28: Genetics and Evolution **(Time allocation: 06 hours)**

- Genetics Through Ages
- Recombinant DNA Technology
- Gene Cloning
- Gene Bank
- Polymerase Chain Reaction
- DNA Fingerprinting
- Genomics
- Genetic Engineering and Its Importance Transgenic Plants
- Animals and Microbes
- Genetic Counseling.
- Bt Crops
- Biopiracy
- Biopatent

MODULE VI: GENERAL HEALTH AND IMMUINIZATION

Time: 18 hrs. **Marks: 06**

Lesson 29: Health **(Time allocation: 06 hours)**

- Definition of Health
- Healthy Food
- Healthy Cooking Habits
- Healthy Traditional Indian Eating Practices.

- Physical Health
- Mental Health -Intellectual, Social, Emotional
- Spiritual and Moral
- Health
- Importance of Yoga and Meditation.

Lesson 30: Diseases **(Time allocation: 06 hours)**

- Types and Transmission of Diseases
- Define - Parasite, Pathogens, Infection, Infestation, Vector
- Causes, Symptoms, Prevention and Control of Some Common Communicable Diseases - Influenza, Measles, Polio, Hepatitis, Tuberculosis, Diphtheria, Leprosy, Malaria, Filariasis and Dengue
- Cardiovascular Diseases - Diabetes Osteoporosis, Cancer, Allergy
- Syphilis, Gonorrhea and AIDS (Awareness, Symptoms And Prevention)
- Drug Abuse

Lesson 31: Immunization& Vaccination **(Time allocation: 06 hours)**

- Types of Defense Mechanisms of Body
- Cells of Immune System (T-Cells, B-Cells, Macrophages)
- Antigens and Antibodies
- Humoral and Cell Mediated Immune Response
- Types of Immunity
- Immunization(With special reference of Covid, HIV, H1N1, Bird Flu)
- History and Importance Of Vaccination

MODULE VII: ENVIRONMENT

Time: 36 hrs. **Marks: 10**

Lesson 32: Ecosystem **(Time allocation: 09 hours)**

- Define Environment, Ecology and Biosphere.
- Biotic and Abiotic Components

- Habitat, Population Community, Biome.
- Unique Micro Ecosystem (Caves, Groves, Spring Water, Hot Water Springs, Artesian Wells (Andhiyaar Gadhi, Tadkeshwar Mangroove)
- Inter-Relationship Between Plants and Animals in an Ecosystem
- Food Chain and Food Web
- Ecological Pyramids
- Ecological Succession
- Energy Flow
- Human Beings in a Food Chain
- Biome (Flora And Fauna)
- Biogeochemical Cycles
- Nutrient Cycling
- Ecosystem Service

Lesson33: Biodiversity and Conservation (Time allocation: 09 hours)

- Types of Natural Resources – Non-Renewable and Renewable
- Need For Conservation and Restoration of Nature.
- Indian Traditions of Conservation of Nature
- Conservation of Soil – Organic Farming
- Conservation of Water (With Special Mention of Koin, Bawali, Percolation Tanks, Check Dams, Micro Dams)
- Conservation of Biodiversity
- Conservation of Endangered And Threatened Species (Flora and Fauna)
- Wild Life Reserves In India
- Agencies (National and International) Dealing With Conservation Of Wildlife Environmental Legislation
- Problems Arising Due to Over Conservation.
- Afforestation
- Sustainable Development

Lesson 34: Energy & Its Conservation (Time allocation: 09 hours)

- Conventional and Non-Conventional Sources Of Energy

- Hydel
- Wind
- Tidal
- Nuclear
- Solar
- Geothermal
- Hydrogen Energy
- Biogas And Bio Fuels
- Depleting Energy Resources
- Conservation of Energy

Lesson 35: Environmental Issues **(Time allocation: 09 hours)**

- Air Pollution
- Water Pollution: Causes and Control Solid Wastes
- Domestic Liquid waste
- Industrial Liquid waste
- E – Waste
- Medical Waste
- Agro-Chemicals and Their Effects
- Radioactive Wastes
- Extreme Climates
- Climate Change – New Crop Pattern, New Pests, New Disease
- Impact of Climate
- Change On Water Recharge System, Lifestyle, Food Habits, Migration
- Greenhouse Effect
- Global Warming
- Ozone Depletion in The Stratosphere
- Degradation By Improper Resource Utilization and Maintenance
- Deforestation
- Case Study
- Animal Corridors
- Human nature Conflict

MODULE VIII: BIOTECHNOLOGY

Time: 17 hrs. **Marks: 04**

Lesson36: Biotechnology: An Emerging Field **(Time allocation: 09 hours)**

- Principles of Biotechnology
- Tools of Recombinant
- DNA Technology
- Processes of Recombinant DNA Technology

Lesson 37: Applications of Biotechnology in Various Fields **(Time allocation: 08 hours)**

- Biotechnological Applications in Agriculture
- Changing Agricultural Practices
- Hydroponics
- Biotechnological Applications in Medicine
- Transgenic Animals
- Ethical Issues

BUSINESS STUDIES

RATIONALE

Business Studies is an important subject for those who want to work in commercial enterprises or want to start their own enterprise. It encourages students to develop an appreciation of how their lives are shaped by economic and social factors. They are enabled to make informed decisions, to better manage their personal financial resources and to be adaptable, creative, and enterprising. Business studies also improve their knowledge and understanding of good business practice and of business as a productive activity

Young people are growing up in a globalised and dynamic world. New opportunities and challenges will emerge in their lifetimes that are virtually unimaginable today. Developing technologies, environmental and societal challenges, demographics, global competition and changing consumer demand will drive these changes. Studying business helps to equip students with the understanding, skills and attitudes to participate fully in an interconnected world.

Entrepreneurship enhances the quality of our collective and individual lives, often changing the way we work, communicate and live. Business studies provide an awareness, insight and positive attitude to entrepreneurship, demonstrating how it can improve our goods, services and institutions.

Business studies encourage students to develop skills for learning, skills for work and skills for life. It supports the development of analytical and critical thinking skills, encouraging students to be problem solvers. It reinforces the development of students' numeracy, literacy and digital technology skills by providing a real-life context for their application.

Business studies explore the interdependence of economic prosperity, societal well-being and the environment and encourage students to think and act as responsible and ethical citizens. They will be provided with a set of foundational skills, understandings and personal attributes, which will help them to engage with the dynamic business environment and fulfil their potential in their personal and professional lives, now and into the future.

Business Studies broadens its base by bringing in issues of inclusiveness, growth and sustainable development which can be leveraged for productive opportunities, lessons and generation of income on equitable terms. The technological revolution has further provided new dimensions such as E-banking, E-Marketing, E-Commerce, E-Finance, E-Investment (paperless trading) and has been gaining importance in recent times.

Business activities are something that affects the daily lives of all people in a society. It also influences creation of employment, incomes, opportunities for personal enterprise and standards of

living of all individuals. Studying business allows a student to understand how business activities influence the society and the economy directly and indirectly.

CURRICULUM OBJECTIVES

The objectives of Business Studies curriculum are to:

- Enable the learners to understand what the subject is all about, its knowledge and wisdom, origin and evolution.
- Cultivate the interest of the learners in that subject and encourage them to pursue it as a career
- Develop in students the knowledge and thought of India for developing a national pride
- Prepare students to manage, evaluate and respond to the Economic, Political, legal and social environment that affects business operations and analyze the interactions thereof
- Facilitate students to appreciate that business activities are an integral component of society and develops an understanding of many social and ethical issues.
- Introduce learners with Business Studies as a dynamic process that brings together technology, natural resources and human initiatives in a constantly changing global environment in the wake of Liberalization, Privatization and Globalization.
- Familiarize with computerized systems that are fast replacing other systems such as E-commerce and other related concepts therefore have been introduced as part of the Secondary and Senior Secondary curriculum.
- Help learners to appreciate that commerce is an integral component of society and also to develop an understanding of many social and ethical issues.
- Introduce the learners with the fast changing economic scenario and business environment and the commercial world which is in a state of continuous flux.
- Keep them abreast with the changes in its methodology concerning particular aspects of the subject.
- Help develop among students logical reasoning and careful analysis.

COURSE STRUCTURE

Module	No of Lessons	Study Hours	Marks allotted
Module.I	3	30	12
Module II	5	40	10
Module III	3	30	10
Module IV	5	45	16
Module V	4	35	10
Module VI	4	48	16
Module VII	2	12	06
Project work/ Practical			20
Total	26	240	100

MODULE 1: IDEA OF BUSINESS STUDIES

Time: 30hours **Marks: 12**

Lesson1: Values, Wisdom and Knowledge: The Ultimate Aim of Education

(Time Allocation: 11 Hours)

- Universal and Eternal Values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge& Wisdom in Ancient Bharat
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson2: Knowledge and Wisdom in Business Studies (Time Allocation: 8 Hours)

- What Business Studies is all about?
- Its Various Branches / Components and Their Importance.
- Its Relationship with other Subjects
- Scope of Business Studies

Lesson 3: Origin and Evolution of Business Studies (Time Allocation: 11 Hours)

- Trade and Commerce in India Starting from Barter System to Present System
- Important Role Played by Trade and Commerce in the Growth of Indian Economy
- Growth of Domestic and International Business
- Major Contribution of India Towards Global Business (Link with Present Development)
- Role of International Organizations

MODULE II: BUSINESS AROUND US

Time: 40hours **Marks: 10**

Lesson 4: Nature and Scope of Business (Time allocation: 8hours)

- Human Activities : Non Economic & Economic
- Classification of Economic Activities: Business, Profession, Employment, Vocation, Characterization of Each
- Objectives & Importance of Business
- Classification of Business Activities
- Commerce
- Industry (Types)
- Trade ; Internal/External

Lesson 5: Business Support Services (Time Allocation: 8hours)

- Business Support Services – Meaning
- Banking
- Insurance
- Transportation
- Communication
- Warehousing
- Advertising

Lesson 6: Business Environment (Time Allocation: 8hours)

- Meaning of Business Environment
- Dimensions of Business Environment
- Recent Developments in Indian Economy (LPG, Demonetization)
- Social Responsibility of Business Towards Different Stakeholders (CSR)

Lesson 7: Business Ethics (Time allocation: 8hours)

- Ethics And Values : Meaning & Importance

- Ethics in Business
- Unethical Practices in Business
- Code of Business Ethics and Their Contribution to National Development

Lesson 8: Recent Trends in Business Environment (Time Allocation: 8hours)

- Modes of Business
- Internet
- Electronic Commerce
- Benefits of E Commerce/E Business
- Limitations of E Commerce /E Business
- The Transaction Process
- Precautions for Security
- Applications of E Commerce
- Outsourcing of Services

MODULE III: BUSINESS ORGANIZATIONS

Time: 30hours **Marks: 10**

Lesson 9: Forms of Business Organizations (Introduction)

(Time Allocation: 10hours)

- Business Organization
- Forms of Business Organization
- Sole Proprietorship
- Partnership Including Limited Liability Partnership
- Hindu Undivided Family Business
- Co-operative Society
- (Meaning, Characteristics, Advantages, Limitation And Suitability of All)

Lesson10: Company Form of Business Organization (Time allocation: 10hours)

- Joint Stock Company
- Distinction Between Private Company and Public Company
- One Man Company
- Choosing the Right Form of Organization
- Differences Between Various Forms of Business Organizations
- Multinational Business Organizations

Lesson11: Public Sector Enterprises (Time Allocation: 10hours)

- Meaning And Characteristics of Public Enterprises
- Difference Between Public and Private Enterprises
- Forms of Organization of Public Enterprises
- Departmental Undertakings
- Statutory Corporations
- Government Companies
- Comparative View of Public Sector Enterprises
- Importance of Public Sector Enterprises
- Disinvestment of Public Sector Enterprises

MODULE IV: FUNCTIONS OF MANAGEMENT

Time: 45hours Marks: 16

Lesson 12: Fundamentals of Management

(Time Allocation: 9hours)

- Meaning, Objectives , Characteristics and Importance of Management
- Nature of Management
- Levels of Management
- Functions of Management
- Principles of Management

Lesson 13: Planning and Organizing **(Time Allocation: 9hours)**

- Meaning,Features,Importance and Limitations of Planning
- Planning Process
- Types of Plans
- Importance of Organizing
- Organizing Process
- Organization Structure: Functional Division
- Formal and Informal Organization
- Delegation, Decentralization

Lesson 14: Staffing **(Time Allocation: 9hours)**

- Meaning, Importance, Process of Staffing
- Recruitment
- Selection – Meaning & Procedure
- Training – Meaning, Importance & Methods
- Performance, Appraisal
- Compensation
- Appraisal, Promotion and Transfer

Lesson 15: Directing **(Time Allocation: 9hours)**

- Meaning
- Communication
- Supervision
- Motivation (Maslow's Need, Hierarchy Theory)
- Leadership (Styles of Leadership, Democratic, Autocratic, Laissez Fair)

Lesson 16: Controlling and Co-Ordination **(Time Allocation: 9hours)**

- Meaning, Need ,Characteristics , Significance of Controlling
- Process of Controlling

- Relationship Between Planning & Controlling
- Co-Ordination :Meaning and Significance

MODULE V: BUSINESS FINANCE

Time: 35hours **Marks: 10**

Lesson 17: Financing of Business (Time Allocation: 6hours)

- Business Finance, its Importance, Types and Sources o Finance (Short Term, Medium and Long Term)
- Methods of Raising Short Term Finance

Lesson 18: Sources of Long Term Business Finance (Time Allocation: 10hours)

- Types of Long Term Finance
- Shares and Debentures
- Special Financial Institutions
- NBFCS
- Mutual Funds
- Leasing Companies
- Foreign Sources
- Retained Earnings

Lesson 19: Financial Management (Time Allocation: 9hours)

- Meaning, Objectives and Importance of Financial Management
- Financial Planning
- Types of Capital Requirement
- Financing Decision : Capital Structure, Dividend and Investment

Lesson 20: Indian Financial Market (Time allocation: 11hours)

- Financial Market, Types of Financial Markets
- Money Market
- Capital Market

- Distinction between Primary Market and Secondary Market
- Distinction between Capital Market and Money Market
- Stock Exchange: Meaning, Functions and Importance
- SEBI : Objectives, Role and Functions
- Bombay Stock Exchange (BSE), National Stock Exchange of India :Meaning, Functions and Importance
- Depository Services

MODULE VI: MARKETING MANAGEMENT & CONSUMER AWARENESS

Time: 48hours **Marks: 16**

Lesson 21: Marketing Management: An Introduction (Time allocation: 08hours)

- Meaning, Objectives and Importance of Marketing
- Difference between Marketing and Selling
- Marketing Functions

Lesson 22: Marketing Mix **(Time Allocation: 16 hours)**

- Concept and Components
- Product and its Classification of Marketing Mix
- Product Mix
- Pricing and Factors Affecting Pricing Decisions
- Methods of Price Fixation
- Channels of Distribution
- Factors Affecting the Choice of Distribution Channel
- Promotion Mix (Advertising)
- Publicityand Public Relations

Lesson 23: Salesmanship **(Time Allocation: 8hours)**

- Meaning
- Process

- Qualities of a Good Sales Person

Lesson 24: Consumer Awareness &Protection (Time Allocation: 16hours)

- Meaning of Consumer
- Concept of Consumer Protection
- Need for Consumer Protection
- Rights, Responsibilities of Consumers
- Ways and Means of Consumer Protection
- Settlement of Grievances

MODULE VII: PREPARING FOR EMPLOYMENT

Time: 12hours **Marks: 06**

Lesson 25: Self Employment (Time allocation: 6hours)

- Meaning, Characteristics, Importance, Avenues of Self Employment
- Meaning, Characteristics, Types of Small Business
- Importance of Small Business in India
- Arranging Finance for Small Business
- Government Policy Towards Small Business
- Institutional Support to Small Business

Lesson 26: Getting Ready for Wage Employment (Time Allocation: 6hours)

- Sources of Information about Job Vacancies
- Role of Employment Exchanges
- Role of Placement Agencies
- Role of Advertising Media
- Applying for a Job
- Employment Tests, Personal Interviews

Project Work Skill Development for Employment

- Micro, Small and Medium Enterprises (MSME)
- Skill Development Initiatives
  - Learning Skills
  - Literacy Skills
  - Life Skill

CHEMISTRY

RATIONALE

Chemistry being an important discipline of science plays a very significant role in every aspect of life. It deals with the study of matter and its transformation. Inorganic chemistry, physical chemistry, organic chemistry, analytical chemistry, industrial chemistry, biochemistry are some important branches of chemistry. The present chemistry curriculum is based on the themes. The basic concepts of Chemistry, structure of atom; why atoms combine? detailed ideas on different states of matter, how far and how fast will a chemical reaction proceed under a given set of conditions? and so on.Occurrence of various elements in nature and their extraction; the organic compounds, their classification and properties, application of chemistry in everyday life are some other topics incorporated. India has made tremendous progress in various fields with the contribution of Chemistry. The use of fertilizers, insecticides, preservatives in food, Pharmacy, medicine, synthetic fibers, paints the list is never ending.

The chapters on glorious past of India, eminent chemists, metals excavated, process of metallurgy have been added to develop a sense of pride and accomplishment in young minds Interdisciplinary approach adds to the value of the subject regarding to development of chemistry

CURRICULUM OBJECTIVES

After completing the course a student will be able to:

- Enable the learners to understand what the subject is all about, its knowledge and wisdom, origin and evolution.
- Cultivate the interest of the learners in the subject and encourage them to pursue it as a career.
- Appreciate the work of Indian and other scientists in this field
- Be aware of ethical issues related to science and technology
- Understand the laws of chemical combination,
- Explain the chemical reactions and the stoichiometric calculations involved
- Distinguish between inorganic and organic substances
- Synthesize simple compounds.
- Perform chemical calculations to know about the chemical reactions and chemical compounds,
- Develop awareness about safety and hazards on handling of chemical substances,
- Choose various professional and applied courses for higher study.

COURSE STRUCTURE

The current curriculum comprises of XI Modules and 35 lessons. The study hours and marks allotted are as follows:

Module	**No. of Lessons**	**Study Hours**	**Marks allotted**
Module I	3	10	05
Module II	1	10	06
Module III	3	28	09
Module IV	4	26	08
Module V	2	18	06
Module VI	2	14	06
Module VII	3	17	06
Module VIII	1	06	02
Module IX	6	44	12
Module X	7	50	14
Module XI	3	17	06
Practical/Project Work			20
Total	**35**	**240**	**100**

*Note: 20% weightage is assigned to practicals and

80% weightage is assigned to theory (including assignment).*

MODULE I: IDEA OF CHEMISTRY

Time: 10hrs. **Marks: 05**

Lesson 1: Values, Wisdom and Knowledge: The Ultimate Aim of Education

(Time allocation: 04 hours)

- Universal and Eternal values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge & Wisdom in Ancient Bharat
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson 2: Knowledge and Wisdom in Chemistry **(Time allocation: 03 hours)**

- Relationship of Chemistry With Other Subjects
- What is Chemistry All About?
- Its Various Branches and Their Importance.
- Applications of Chemistry In Everyday Life

Lesson 3: Origin and Evolution of Chemistry **(Time allocation: 03 hours)**

- The Primitive Uses of Elements and Their Compounds By The Early Civilizations
- Glorious History of Chemistry in Ancient India
- Ancient/ Medieval / Modern Indian Chemists and Their Contributions to the World.
- Achievements / Awards in the Field of Chemistry(National and International)

MODULE II: FUNDAMENTALS OF CHEMISTRY

Time: 10 hrs. **Marks: 06**

Lesson 4: Atoms, Molecules and Chemical Arithmetic **(Time allocation: 10 hours)**

- Basic Components of a Computer Along With Their Functions
- Historical Approach to Particulate Nature Of Matter
- A Simple Idea of SI Base Units

- Laws of Chemical Combination(Laws of conservation of mass, laws of definite proportion, laws of multiple proportion)
- Gay Lussac's Law of Combining Volumes
- Dalton's Atomic Theory: Concept of Elements, Atoms and Molecules
- Mole Concept
- Atomic and Molecular Masses.
- Chemical Formula and Percentage Composition
- Empirical and Molecular Formulae
- Stoichiometry and Calculations Based On Stoichiometry
- Limiting Reagent and Percentage Yield

MODULE III: ATOMIC STRUCTURE AND CHEMICAL BONDING

Time: 28hrs. **Marks: 09**

Lesson 5: Atomic Structure **(Time allocation: 10 hours)**

- Introduction to MSWord
- Earlier Developments of Theory of Atomic Structure (Thomson and Rutherford Model)
- Fundamental Particles of An Atom: Electron, Proton and Neutron
- Atomic Number and Mass Number
- Isotopes and Isobars
- Line Spectrum of H Atom
- Bohr Model
- Wave Particle Duality and De Broglie Relationship
- Heisenberg's Uncertainty Principle.
- Quantum Mechanical Model of an Atom.
- Quantum Numbers
- Types of Orbitals.
- Shapes of s p and d Orbitals
- Aufbau Principle – Electronic Configuration of Atoms

- Pauli's Exclusion Principle
- Hund's Rule of Maximum Multiplicity
- Stability of Fully Filled and Half- Filled Orbitals

Lesson 6: Periodic Table and Periodicity in Properties (Time allocation: 09 hours)

- Brief Account of Classification of Elements
- Long Form of Periodic Table.
- IUPAC Nomenclature of Elements With Atomic Numbers>100
- Variation in Atomic Properties
    - Atomic and Ionic Radius
    - Ionization Enthalpy
    - Electron Gain Enthalpy
    - Valency
    - Electronegativity

Lesson 7: Chemical Bonding (Time allocation: 09 hours)

- Why Do Atoms Combine?
- Types Of Bonds and Their Characteristics
    - Ionic Bond
    - Covalent Bond
    - Hydrogen Bond
- Born Haber Cycle.
- Bond Parameters- Bond Order, Bond Length, Bond Angle, Bond Enthalpy
- Bond Polarity, Dipole Moment, Covalent Character of Ionic Bond.
- Resonance.
- Shapes of Molecules: VSEPR Theory
- Valence Bond Theory (VBT)
- Hybridization of Atomic Orbitals
- Multiple Bonds (Sigma and pi bond)
- M.O. Theory: Homonuclear Diatomic Molecules (H_2, O_2, F_2, C_2)

MODULE IV: STATES OF MATTER

Time: 26 hrs. **Marks: 08**

Lesson 8: The Gaseous and Liquid State **(Time allocation: 07 hours)**

- Statesof Matter
- Intermolecular Interactions
- General Behaviour of Gases: The Gas Laws
- Ideal Gas Equation
- Dalton's Law of Partial Pressure
- Kinetic Molecular Theory of Gases (no derivation)
- Distribution of Kinetic energy and Molecular Speeds
- Graham's Law Gaseous Diffusion
- Real Gases – Deviation From Ideal Gas Behaviour
- Vander Waals' Equation
- Liquefaction of Gases
- Critical Constants
- Properties of Liquids
    - Vapour Pressure
    - Surface Tension
    - Viscosity

Lesson 9: The Solid State **(Time allocation: 07 hours)**

- Nature of Solid State
- Classification of Solids: Amorphous and Crystalline
- Classification of Crystalline Solids (Based on Intermolecular Interactions)
- Two-Dimensional Lattice and Unit Cells
- Packing in Crystals
- Unit Cells and Their Types
- Packing Efficiency: Simple Cubic Lattice, Body Centred Lattice, CCP Lattice Calculation Of Density of Unit Cell

- Structure of Simple Ionic Compounds (AB & AB2 Type)
- Magnetic Properties of Solids (Paramagnetic And Diamagnetic)
- Imperfection in Solids (Frenkel and Schottky Defects)

Lesson 10: Solutions **(Time allocation: 06 hours)**

- Components of a Solution
- Types of Solutions
- Concentration of Solutions: Different Modes of Expression
- Solubility of Gases in Liquids: Henry's Law
- Raoult's Law
- Ideal and Non-Ideal Solutions
- Colligative Properties of Solution
- Abnormal Molecular Mass: Van't Hoff Factor

Lesson 11: Colloids **(Time allocation: 06 hours)**

- The Colloids
- True Solution, Colloids and Suspension
- Classification of Colloids
- Preparation and Properties of Colloidal Solutions
- Coagulation: Hardy Schulze Rule
- Application of Colloids
- Emulsions and Gels
- ElementaryIdea of Nano Materials

MODULE V: CHEMICAL THERMODYNAMICS

Time: 18 hrs. **Marks: 06**

Lesson 12: Chemical Energetics and Thermo chemistry

(Time allocation: 09 hours)

- System and Surroundings
- Types of System

- Types of Processes
- Properties of a System
- Standard State of a Substance
- First Law of Thermodynamics Concepts of Internal Energy and Enthalpy Change.
- Heat and Work
- Exothermic and Endothermic Reactions
- Thermo chemical Equations
- Standard Enthalpy of Reactions
- Enthalpy Changes During Physical (Fusion, Vaporization, Sublimation, and Solution) and Chemical Processes (Atomization, Ionization)
- Hess's Law and Its Applications
- Bond Dissociation Enthalpy

Lesson 13: Spontaneity of Chemical Reactions (Time allocation: 09 hours)

- Spontaneous and Non-Spontaneous Processes
- Concept of Entropy, Entropy Change And Spontaneity
- Second Law of Thermodynamics
- Gibb's Energy Change and Spontaneity of a Chemical Reaction
- Gibb's Energy Change and Equilibrium Constant
- Third Law of Thermodynamics and Absolute Entropy

MODULE VI: CHEMICAL EQUILIBRIUM

Time: 14hrs. **Marks: 06**

Lesson 14: Chemical Equilibrium (Time allocation: 07 hours)

- Static and Dynamic Equilibrium
- Reversible and Irreversible Reactions
- Equilibrium in Physical and Chemical Processes
- Equilibrium In Homogeneous and Heterogeneous Systems
- Law of Equilibrium and Equilibrium Constants

- Relationship Between Kcand Kp Characteristics of Equilibrium Constants
- Factors Affecting Equilibrium State: Le Chatelier's Principle

Lesson 15: Ionic Equilibrium (Time allocation: 07 hours)

- General Concepts of Acids and Bases
- Ionization Constants of Weak Acids and Base
- Strong and Weak Electrolytes, Ionization of Weak Electrolytes.
- Self-Ionization of Water
- Concept of Ph
- Buffer Solutions
- Henderson's Equation
- Solubility Product (Ksp) and Its Applications
- Common Ion Effect
- Salt Hydrolysis

MODULE VII: CHEMICAL DYNAMICS

Time: 17hrs. **Marks: 06**

Lesson 16: Electrochemistry (Time allocation: 06 hours)

- Classical Idea of Redox Reactions
- Electron Transfer Process
- Oxidation Number
- Electrolytic Conduction (Conductance, Conductivity, Molar Conductivity, Effect of Dilution, Kohlrausch Law)
- Electrode Processes
- Electrochemical Cells
- Types of Electrochemical Cells: Faradaic Cells and Galvanic or Voltaic Cells
- Faradaic Cells: Faraday's Laws of Electrolysis and Products of Electrolysis
- Galvanic or Voltaic Cells: Electrode Potential and Its Measurement.
- Electrochemical Series and Its Application
- Cell E.M.F

- Nernst Equation and Its Application to Chemical Cells
- Cell E.M.F. and Gibbs Energy Change
- Commercial Cells: Dry Cells, Lead Storage Battery and Fuel Cells.
- Corrosion

Lesson 17: Chemical Kinetics (Time allocation: 06 hours)

- Rate of Reaction: Average and Instantaneous Rate
- Factors Affecting Rate of Reaction
- Rate Law and Specific Rate Constant
- Order and Molecularity of a Reaction
- Zero Order Reactions
- First Order Reactions: Integrated Rate Equation, Half-Life Period
- Effect of Temperature On Reaction Rate
- Collision Theory

Lesson 18: Adsorption and Catalysis (Time allocation: 05 hours)

- Adsorption and Absorption
- Factors Affecting Adsorption
- Physical and Chemical Adsorption
- Adsorption Isotherms (Freundlich)
- Adsorption From Solutions
- Applications of Adsorption
- Catalysis
- Auto Catalysis
- Negative Catalysis
- Promoters and Poisons
- Homogeneous and Heterogeneous Catalysis
- GeneralCharacteristics of Catalysis

MODULE VIII: ELEMENTS: OCCURRENCE AND EXTRACTION

Time: 06hrs. **Marks: 02**

Lesson 19: Occurrence and Extraction of Metals **(Time allocation: 06hours)**

- Occurrence of Metals
- Concentration of Ores
- Extraction of Crude Metal From Concentrated Ore
- Calcination and Roasting
- Refining of Metals
- Extractionof Copper and Aluminium From Their Ores

MODULE IX: ELEMENTS: POSITION AND PROPERTIES IN PERIODIC TABLE

Time: 44hrs. **Marks: 12**

Lesson20: Hydrogen and s – block Elements **(Time allocation: 08 hours)**

- Position of Hydrogen in the Periodic Table
- Hydrogen: Preparation and Properties
- Hydrides: Ionic and Covalent
- Water
- Hydrogen Peroxide (H_2O_2)
- Heavy Water, D_2O
- Hydrogen as a Fuel

Group 1 Elements: Alkali Metals

- General Characteristics of The Compounds of The Alkali Metals
- Anomalous Properties of Lithium
- Some Important Compounds of Sodium (NaOH, Na_2CO_3, $NaHCO_3$)
- Biological Importance of Sodium and Potassium

Group 2 Elements: Alkaline Earth Metals

- General Characteristics of Compounds of the Alkaline Earth Metals

- Anomalous Behaviour of Beryllium
- Some Important Compounds of Calcium($CaCO_3$,CaO)
- Biological Importance of Magnesium and Calcium

Lesson 21: General Characteristics of the *p*-Block Elements (Time allocation: 07 hours)

- General Introduction to p- Block Elements
- Occurrence in Nature and Electronic Configuration
- Physical and Chemical Properties
- Inert Pair Effect
- Anomalous Properties of First Element

Lesson 22: The *p* -Block Elements and Their Compounds-I(Time allocation: 08 hours)

- Elements of Group 13 and 14
- Boron Family-Borax, Boric Acid, Boron Hydrides(B_2H_6,), Halides (BC_{l3})
- Carbon Family-Allotropes (Graphite, Diamond, Elementary Idea of Fullerene)
- Oxides, Carbides, Halides
- Nitrogen Family-Ammonia, Nitric acid
- Structure of Oxoacids of Phosphorous
- Fixation of Nitrogen: Industrial and Biological
- Nitrogenous and Phosphatic Fertilizers

Lesson 23: The *p*-Block Elements and Their Compounds-II(Time allocation: 07 hours)

- Elements of Group 16,17 And 18
- Oxygen Family-Oxides, Acidic, Basic and Amphoteric
- Ozone (Oxidizing Properties)
- Halogens- Oxoacids of Chlorine.
- Interhalogen Compounds.
- NobleGases-Compounds of Xenon: Xenon Fluorides, Oxides (Preparation And Structure)

Lesson 24: The *d*- Block and f – Block Elements and Their Compounds

(Time allocation: 07 hours)

- Position in the Periodic Table
- Electronic Configurations of the d-Block Elements
- General Properties of the Transition Elements
- Some Important Compounds of Transition Elements
- Potassium Permanganate and Potassium Dichromate
- The Lanthanoids (Electronic Configuration, Oxidation States, Lanthanoid Contraction)
- The Actinoids (Electronic Configuration, Oxidation States)
- Real Life Applications
- Some Applications of *d*- and *f*-Block Elements

Lesson 25: Coordination Compounds(Time allocation: 07 hours)

- Werner's theory of Coordination Compounds
- Definitions of Some Important Terms Pertaining To Coordination Compounds
- Nomenclature of Coordination Compounds
- Isomerism in Coordination Compounds
- Bonding in Coordination Compounds (VBT and CFT, Octahedral and Tetrahedral Compounds)
- Importance and Applications of Coordination Compounds

MODULE X: CHEMISTRY OF CARBON COMPOUNDS

Time: 50hrs **Marks: 14**

Lesson 26: Nomenclature and General Principles (Time allocation: 08 hours)

- Rules of IUPAC Nomenclature
- Types of Bond Fission
- Types of Reactions: Substitution, Addition, Elimination, Oxidation/Reduction (Electrophilic And Nucleophilic)

- Electron Displacement in a Covalent Bond: Inductive Effect, Electrometric Effect, Resonance and Hyperconjugation and Steric Effect
- Isomerism–Structural and Stereoisomerism Isomerism,Assigning Absolute Configuration (Rand S)

Lesson 27: Hydrocarbons (Time allocation: 07 hours)

- Classification
- Nomenclature, Isomerism, Preparation, Properties and Uses of
    - Alkanes
    - Alkenes
    - Alkynes
- Aromatic Hydrocarbons
- Carcinogenicity and Toxicity

Lesson 28: Compound of Carbon Containing Halogens (Time allocation: 07 hours)

- Nomenclature
- Nature ofC–X Bond
- Methods of Preparation of Haloalkanes
- Preparation of Haloarenes
- Physical and Chemical Properties
- Uses

Lesson 29: Alcohols, Phenols and Ethers (Time allocation: 07 hours)

- Classification and Nomenclature
- Structures of Functional Groups
- Alcohols and Phenols (Preparation, Properties and Applications)
- Ethers (Preparation, Properties and Applications)

Lesson30: Aldehyde, Ketones and Carboxylic acids (Time allocation: 07 hours)

- Nomenclature of Aldehydes and Ketones
- Preparation of Aldehydes and Ketones
- Structure ofAldehydes and Ketones

- Physical and Chemical Propertiesof Aldehydes and Ketones
- Uses of Aldehydes and Ketones
- Nomenclature of Carboxylic Acids
- Structure of CarboxylicAcids
- Preparation of Carboxylic Acids
- Physical and Chemical Properties of Carboxylic Acids
- Uses of Carboxylic Acids

Lesson31: Compounds of Carbon Containing Nitrogen (Time allocation: 07 hours)

- Nitro Compounds
- Nomenclature
- Preparation and Properties
- Uses
- Amines
- Nomenclature
- Classification of Amines
- Preparation and Properties
- Uses

Lesson32: Biomolecules(Time allocation: 07 hours)

- Carbohydrates -Classification, Uses and Biological Importance
- Proteins - Classification, Uses and Biological
- Enzymes–Mechanism and Characteristics
- Vitamins – Classification and Functions
- Nucleic Acids – Structure and Biological Functions
- Hormones – Some Important Animal and Plant Hormones and Their Functions.

MODULE XI: CHEMISTRY IN EVERYDAY LIFE

Time: 17hrs. **Marks: 06**

Lesson33: Drugs and Medicines (Time allocation: 05 hours)

- Distinction Between Drugs and Medicines
- Functions and Important Examples of Analgesics, Tranquilizers, Antiseptics, Disinfectants, Antimicrobials, Anti-Fertility Drugs, Antibiotics, Antacids, Antihistamines
- Elementary idea of Antioxidants
- Chemicals In Foods – Preservatives and Artificial Sweetening Agents

Lesson 34: Soaps, Detergents and Polymers (Time allocation: 06 hours)

- Cleansing agents – Soaps and Detergents
- Cleansing action of Soap And Detergents.
- Classification of Polymers - Natural and Synthetic
- Methods of Polymerization (Addition And Condensation), Copolymerization
- Some Important Polymers: Natural and Synthetic Like Polythene, Nylon 66, Polyesters, Bakelite and Rubber.
- Biopolymers
- Biodegradable and Nonbiodegradable Polymers.

Lesson 35: Environmental Chemistry (Time allocation: 06 hours)

- Environmental Concerns
- Pollutants
- Air Pollution – Pollutants, Photochemical Smog, Acid Rain, Global Warming and Greenhouse Effect, Depletion of Ozone Layer.
- Control of Air Pollution
- Water Pollution - Pollutants, Biological Oxygen Demand, Prevention of Water Pollution
- Control of Water Pollution
- Soil Pollution – Sources and Control
- Green Chemistry: An Alternative Tool for Reducing Pollution, Strategies and Achievements

DIGITAL LITERACY & COMPUTER SCIENCE

RATIONALE

Computer science is one of the rapidly growing fields of modern science that enables the learner to master the foundational skills and competencies needed for the futures development. Acquiring basic computer science knowledge is essential for reorienting the students for a world where technology is omnipresent. Applicability of computers finds its usage in a wide variety of fields, such as information technology, telecommunications, aerospace and defense, financial services, digital marketing and modern business world to name a few. Thus the subject not only helps in acquiring job skills but also aims at transforming India into a digitally empowered society. Achieving the Universal Digital Literacy and Universally accessible digital resources is the basic idea behind teaching Computer Science to the learners.

CURRICULUM OBJECTIVES

This course will help learner to

- Understand what the subject is all about, its knowledge and wisdom, origin and evolution.
- Cultivate the interest in that subject and encourage them to pursue it as a career.
- Appreciate significant role of an operating system in managing and executing all the application programs in a computer device and its basic functionalities.
- Develop an in-depth knowledge and practical usage of Microsoft applications like MS-Word, MS-Excel, data analysis using MS-Excel and MS-PowerPoint.
- Understand the concept of data communication and networking along with the different security aspects.
- Appreciate multimedia concept and it's real-life applications.
- Discusses and apply the importance of Web applications in computer science, designing concepts of Web applications, and their uses.
- Understand the concept and applications of Database Management System (DBMS) and structured query language (SQL).
- Gain understanding of languages like C, C++, and Python.
- Acquire skills such as project development skills, entrepreneurship Skills and professional and communication skills

COURSE STRUCTURE

The current curriculum comprises of VIII Modules and 27 lessons. The study hours and marks allotted are as follows:

Module	**No. of Lessons**	**Study Hours**	**Marks allotted**
Module I	3	15	08
Module II	3	30	09
Module III	5	40	12
Module IV	3	30	12
Module V	5	45	12
Module VI	2	20	09
Module VII	3	30	12
Module VIII	3	30	06
Practical/Project Work			20
Total	**27**	**240**	**100**

*Note: 20% weightage is assigned to practicals and

80% weightage is assigned to theory (including assignment).*

MODULE I: IDEA OF COMPUTER SCIENCE

Time: 15hrs. **Marks: 08**

Lesson 1: Values, Wisdom and Knowledge: The Ultimate Aim of Education

(Time allocation: 05 hours)

- Universal and Eternal values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge & Wisdom in Ancient Bharat
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson 2: Knowledge and Wisdom in Computer Science (Time allocation: 05 hours)

- What Is Computers Science All About?
- Its Various Branches and Their Importance
- Relationship of Computers Science With Other Subjects
- Applications of Computers Science in Everyday Life

Lesson 3: Origin and Evolution of Computer Science (Time allocation: 05 hours)

- The Most Primitive Use and Application of Basic Computing Knowledge by People of Early Civilizations.
- Glorious History Of Computer Science and Eminent Scientist
- Achievements (National &International Level)

MODULE II: AN OVERVIEW OFCOMPUTER

Time: 30 hrs. **Marks: 09**

Lesson 4: Computer Fundamental (Time allocation: 10 hours)

- Basic Components of A Computer Along With Their Functions
- Input, Output and Storage Devices
- Various Memory Accessing Modes
- Data and Information

Lesson 5: Number Systems (Time allocation: 10 hours)

- Types of Number Systems
- Conversion between Number Systems
- Some Example of Number System

Lesson 6: Computer Software (Time allocation: 10 hours)

- Computer Software
- Types of Computer Software
- Operating System
- Types of Operating System
- Function of An Operating System
- WindowsOperating System and Its Function

MODULE III: MICROSOFT APPLICATIONS

Time: 40hrs. **Marks: 12**

Lesson 7: MS-Word Part I (Time allocation: 05 hours)

- Introduction to MSWord
- Components of MSWord Window
- Create a Document

Lesson 8: MS-Word Part II(Time allocation: 05 hours)

- Edit and Save a Document
- Formatting a Document
- Page Set Up
- Insert a Picture, Clip Art and Shape in Document
- Create and Modify a Table in Ms. Word
- Mail Merge

Lesson 9: MS- Excel (Time allocation: 10 hours)

- Introduction to MS Excel

- Components of MS Excel Window
- Create a Spreadsheet
- Edit and Save a Spreadsheet
- Formatting a Spreadsheet
- Chart and Its Types
- Createa Chart in Excel

Lesson 10: Data Analysis Using Excel **(Time allocation: 10 hours)**

- More on MS Excel
- Formula and Function
- Types of Formula and Functions
- Sorting and Filtering
- Data Validation in Excel

Lesson 11: MS- PowerPoint **(Time allocation: 10 hours)**

- Introduction to MS Power Point
- Components of MS Power Point Window
- Create A Presentation In Power Point
- Edit and Save a Presentation
- Formatting a Slide
- Insert a Picture,Clip Art and Shape in Slide
- Create and Modify a Table in a Slide
- Animation and Transition
- Set Up Slide show

MODULE IV: DATA COMMUNICATION AND NETWORKING

Time: 30 hrs. **Marks: 12**

Lesson 12: Computer Networks **(Time allocation: 10 hours)**

- Concept of Communication
- Communication Measuring Capacity of Communication Media

- Types of Data Communication
- Switching Techniques
- Transmission Media
- Mobile Telecommunication Technologies
- Protocol

Lesson 13: Basic Concepts of Internet **(Time allocation: 10 hours)**

- Define Internet and Its Related Terminologies
- List of Internet protocols(TCP/IP,FTP,HTTP)
- Use of Internet
- Assess Various Internet Services like
    - email
    - Instant Messaging and Chat Rooms
    - Blogs
    - Newsgroups
    - Video Conferencing
    - Social Networking

Lesson 14: Security Aspects **(Time allocation: 10 hours)**

- Virus-Its Threats and Prevention
- Malware
- Antivirus
- Spam
- Firewall
- Cookies
- Hackers and Crackers
- Network Security Threats

MODULE V: MULTIMEDIA AND WEB APPLICATION

Time: 45 hrs. **Marks: 12**

Lesson 15: Multimedia and its Applications **(Time allocation: 09 hours)**

- Multimedia
- Characteristics of Multimedia
- Types of Multimedia
- Application of Multimedia
- Some Popular Multimedia Applications

Lesson 16: Digital Platform **(Time allocation: 09 hours)**

- E. Commerce
- Types of E-commerce
- Commerce
- Some Popular Digital Platform

Lesson 17: Basics of Web Designing **(Time allocation: 09 hours)**

- A Brief History
- HTML
- Text/ HTML Editors
- Web Browser
- Components Of Web Page
- HTML Tags
- Creating, Saving, Viewing And Editing Html Documents:
- Attributes Of Body Tags
- Applications of Web Designing

Lesson 18: Introduction to HTML **(Time allocation: 09 hours)**

- HTML-An Overview
- HTML Element
- Procedure to Create a HTML Program

- HTML Tags and Attribute

Lesson 19: More on HTML **(Time allocation: 09 hours)**

- HTML-An Overview
- HTML Image and Link
- Table and List
- CSS -An Over view

MODULE VI: UNDERSTANDING DATA

Time: 20hrs. **Marks: 09**

Lesson 20: Database Concepts Introduction **(Time allocation: 10 hours)**

- File System
- Database Management System
- Relational Data Model
- Keys in a Relational Database.

Lesson 21: Structured Query Language (SQL) **(Time allocation: 10 hours)**

- Introduction
- Data Types and Constraints in My SQL
- SQL for Data Definition
- SQL for Data Manipulation
- SQL for Data Query
- Data Updating and Deletion
- Functions in My SQL

MODULE VII: UNDERSTANDING PROGRAMMING LANGUAGES

Time: 30hrs. **Marks: 12**

Lesson 22: Programming using C **(Time allocation: 10hours)**

- Introduction to C
- History of C
- Importance of C

- Importance of Header Files
- Basic Structure of C Programs
- Character Set
- Keywords and Identifiers
- Constants and Variables
- Variables
- Data Types
- User Defined Type Declaration
- Operator
- Expression

Lesson23: Programming using C++ **(Time allocation: 10 hours)**

- Introduction To C++
- C++ Character Set
- Basic Data Types
- Tokens
- Input /Output
- Writing a program in C++

Lesson24: Getting Started with Python **(Time allocation: 10 hours)**

- Introduction to Python
- Python Keywords Identifiers
- Variables
- Operators
- Expressions
- Statement
- Input and Output
- Type Conversion
- Debugging

MODULE VIII: SKILL DEVELOPMENT USING COMPUTER

Time: 30hrs. **Marks: 06**

Lesson 25: Project Management Skills (Time allocation: 10 hours)

- Definition of Project
- The Knowledge Areas of Project Management
- Project Communication Management
- Software Configuration Management

Lesson 26: Entrepreneurship Skills (Time allocation: 10 hours)

- Identify A Person As An Entrepreneur
- Define Skills Required For Being An Entrepreneur
- Importance of Entrepreneurship Skills

Lesson 27: Professional Communication Skills (Time allocation: 10 hours)

- Build Awareness About Various Types of Interpersonal Communication in Professional Setups
- Develop Effective Communication Skills
- Discuss Assertion Skill, Listening Skill And Conflict Resolution Skills in Office Environments
- Improve Communication Skill
- Make Requests and Give Directions in Professional Environment.
- Make requests and give directions in professional environment.

ECONOMICS

RATIONALE

Economics plays a vital role in our everyday life. No subject of the present day is as important as economics. Economics governs the life of the individual, Society and the modern States Studying economics enables us to understand past, future and current models, and apply them to societies, governments, businesses and individuals.

Economic education is vital to the future health of our nation's economy. It gives our students the building blocks for a successful financial future. It empowers students by giving them the knowledge and tools to improve their well being.

The study of economics helps people understand the world around them. It enables people to understand people, businesses, markets and governments, and therefore better respond to the threats and opportunities that emerge when things change. Economics, at its core, is the study of how to evaluate alternatives and make better choices. It develops critical-thinking and problem-solving skills to make good decisions. It develops analytical skills to examine data to support good decisions. These skills are desired across careers in the public and private sectors.

Understanding how decisions are made, how markets work, how rules affect outcomes, and how economic forces drive social systems will equip people to make better decisions and solve more problems. This translates to success in work and in life.

Economics imparts clear reasoning and logical thinking. This not only helps people do well personally and professionally, it helps prepare students for graduate programs and law school.

Considered a social science, economics uses scientific methods to understand how scarce resources are exchanged within society. An economics course will gives an in-depth understanding of core economic theory and how to apply it to the real business world.

It helps develop a range of transferable skills, such as: communication, problem solving, research, numeracy and time management.

Economics is a widely respected field of study and provides an alternative to an Accounting and Finance degree as it offers similar career opportunities for graduates. The subject plays a significant role in the international affairs.

CURRICULUM OBJECTIVES

The aims of teaching economics at the senior secondary stage are to:

- Enable the learners to understand what the subject is all about, its knowledge and wisdom, origin and evolution.
- Cultivate the interest of the learners in thatsubject and encourage them to pursue it as a career.
- To make students understand some basic economic concepts and develop economic reasoning that learners can apply to their daily life as citizens, workers and consumers;
- To enable learners to realize their role in the country building and sensitize them to the national issues;
- To impart knowledge and thought of India for developing national pride;
- To develop the ability to think critically and creatively, to conceptualize, inquire and reason to formulate and solve problems in daily life as well as in the context of economics and other disciplines;
- To enhance the ability to communicate with others and express their views clearly and logically in the terms used in economics ;
- To be able to understand and analyze the data
- ➢ To develop a positive attitude towards the learning of economics

COURSE STRUCTURE

Modules	No of Lessons	Study Hours	Marks allotted
Module I	3	31	10
Module II	6	45	16
Module III	6	42	15
Module IV	9	42	12
Module V	7	38	12
Module VI	6	42	15
Project Work/ Practical			20
Total	37	240	100

MODULE I: IDEA OF ECONOMICS

Time: 31hours **Marks: 10**

Lesson 1: Values, Wisdom and Knowledge: The Ultimate Aim of Education

(Time allocation: 10 hours)

- Universal and Eternal values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge & Wisdom in Ancient Bharat
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson 2: Knowledge and Wisdom In Economics (Time Allocation: 10Hours)

- Meaning of Economics (What Economics is all About?)
- Its Various Branches and their importance
- Positive and Normative Economics
- Micro and Macroeconomics: Meaning, Significance, Difference and Interdependence
- Scope of Economics and its Major Branches Esp. Micro and Macro
- Relationship of Economics with other Subjects

Lesson 3: Origin and Evolution of Economics and Economic Thought

(Time Allocation: 11Hours)

- Origin of Economic Thought and Development of Economy and Economic System in India.
- Major Developments in Economics and its Applied Branches with reference to India.
- Eminent Indian and Western Economic Thinkers and their Contribution Such as:
- Kautilya, Thiruvalluvar, Dadabhai Naoroji, Mahadev Govind Ranade, Romesh Chandra Dutt, Gopal Krishna Gokhale, Radhakamal Mukerjee, Dr. Ram Manohar Lohia, Amartya Sen, John M. Keynes, Adam Smith, Milton Friedman, David Hume, Ludwig Von Mises, and Thomas Malthus to be Considered
- Achievements/Awards In The Field of Economics

MODULE II: STATISTICS

Time: 42 hours **Marks: 15**

Lesson 4: Data: Collection, Organization and Classification of Data

(Time allocation: 7hours)

- Use of Statistics in Economics
- Meaning, Scope and its Need In Economics, Functions of Statistics
- Sources of Data
- How Data is Collected
- Census and Sample Surveys- Raw Data
- Classification of Data
- Sampling and Non-Sampling Errors
- Census of India and NSSO, World Bank, UN
- Types of Series: Individual, Discrete and Continuous
- What is a Frequency Distribution?

Lesson5: Presentation of Data (Time allocation:7 hours)

- Textual Presentation of Data
- Tabular Presentation of Data
- Tabulation of Data & Parts of a Table
- Diagrammatic Presentation of Data -Bar Charts or Diagrams, Pie Diagram, time Series / Line Graph Histogram, Frequency Polygon, Cumulative Frequency Curve (Ogive)

Lesson 6: Measures of Central Tendency (Time allocation:7hours)

- Arithmetic Mean
- Median
- Mode
- Relative Position of Mean, Median and Mode

Lesson 7: Measures of Dispersion **(Time allocation:7 hours)**

- Measures Based upon Spread of Values- Range, Quartiles
- Measures of Dispersion from Averages
- Absolute and Relative Measures of Dispersion
- Lorenz Curve

Lesson 8: Correlation **(Time allocation: 7hours)**

- Techniques of Measuring Correlation
- Scatter Diagram,
- Karl Pearson's Method,
- Rank Correlation\

Lesson 9: Index Numbers **(Time allocation: 7hours)**

- What is an Index Number
- Construction of an Index Number
- Some Important Index Numbers- CPI, IIP, Sensex
- Issues in the Construction of an Index Number
- Index Number in Economics

Statistics Tools

- Suggested List of Projects
- Sample Projects from Data on which Learners Apply Statistical Tools
- Data can be from Local Areas – One Each on Urban and Rural Areas.

MODULE III: MICRO ECONOMIC THEORY

Time: 42 hours **Marks:-15**

Lesson 10: Central Problems of Economy & Solutions **(Time allocation: 6hours)**

Human Wants

- Meaning of Desire, Needs and Wants (Characteristics of Wants, How Resources Satisfy Wants, Economic and Non-Economic Wants)
- How Do Wants Arise and Grow (Focus on Individual, Society National and Global)

- Satisfaction of Wants
- Nature of Goods and Services (Distinction, Classification and Role)
- Why Do Economic Problems Arise?
- Central Problems of Economy (What, How, For whom)

Solutions to Central Problems Using Micro Economic Tools

- Concept of Production Possibility
- Production Possibility Schedule
- Production Possibility Curve/Frontier
- Underutilization or Inefficient utilization of Resources.
- Growth of Resources
- Solutions to Central Problems
    - Market Mechanism,
    - Planning

Lesson 11: Concept of Elasticity (**Time allocation: 6 hours)**

- Meaning of Elasticity
- Elasticity of Demand and Supply
- Degrees (Types) of Price Elasticity of Demand and Supply
- Methods of Measurement of Price Elasticity of Demand
- Methods of Measurement of Price Elasticity of Supply
- Relationship Between Total Expenditure and Price Elasticity of Demand
- Factors Affecting Price Elasticity of Demand and Supply

Lesson 12: Market Structure (**Time allocation: 6hours)**

- What is a Market
- Basis of Different Market Forms
- Different Forms of Competitive and Non- Competitive Market Structure
- Firm Vs Industry under Perfect Competition
- Meaning of Equilibrium Price

- Process of Arriving at Equilibrium Price
- Excess Demand & Excess Supply
- Effect of Change in Demand on Equilibrium Price and Quantity- Simultaneous Change in Demand and Supply
- Application of Demand and Supply Analysis
- Regulation of Market by GOI
- (MSP,PDS, Price Ceiling etc. in Market)

Lesson 13: Consumer's Equilibrium (Time allocation: 6 hours)

- Brief Introduction to Microeconomics
- Meaning of Consumer's Equilibrium
- Mention the Three Major Theories that Explain Consumer Behavior
- Meaning of Demand, Individual Demand & Market Demand
- Factors Affecting Individual & Market Demand for A Commodity
- Law of Demand-Assumptions of Law of Demand, Reasons for Operation of Law of Demand, Exceptions to the Law of Demand
- Individual Demand Schedule & Demand Curve
- Market Demand Schedule & Market Demand Curve
- Movement Along The Demand Curve (Change in Quantity Demanded)
- Shift in Demand Curve (Change in Demand)

Supply

- Meaning
- Factors Determining Supply or Determinants of Supply of A Good
- Law of Supply-Supply Curve

Lesson14: Producer's Behavior (Time Allocation: 6 Hours)

- Production Function
- Meaning of Production
- Definition of Production Function

- Relationship Between TPP and MPP
- Relationship Between APP and MPP
- Law of Variable Proportions
- Reasons Behind Different Phases of the Laws of Variable Proportions
- Law of Diminishing Marginal Product

Lesson 15: Cost, Revenue and Profit **(Time allocation: 6 hours)**

- Definition of Cost and Cost Function
- Types of Cost
- Normal Profit as Cost of Production
- Private and Social Costs
- Money Cost vs. Real Cost
- Nature of Cost in Production Process
- Calculation of Fixed and Variable Cost
- Concept of Revenue and Profit
- Various Concepts of Profit

MODULE IV: MACRO ECONOMIC THEORY

Time: 42 hours **Marks: 12**

Lesson 16: Introduction to Macro Economics & National Income Accounting

(Time allocation: 5hours)

- Basic Concepts of Macroeconomics
- Basic Identities in Macroeconomics
- Meaning of Income
- Basic Economic Activities
- Closed Economy Vs Open Economy
- Stock and Flow

- Circular Flow of Income
- Domestic Territory
- Normal Resident
- Intermediate Goods and Final Goods
- Value of Output and Value Added at Factor cost & Market price
- Domestic Income Vs National Income
- National Income and Its Related Aggregates (GDP, NDP, GNP, NNP, Nominal and real GDP)- GDP and welfare

Lesson 17: Measurement of National Income (**Time allocation: 5 hours)**

- Methods of Measuring National Income
- Value Added Method
- Income Method
- Final Expenditure Method
- Reconciliation of the Three Methods
- National Product and Other Aggregates
- National Disposable Income (Net and Gross)

Lesson18: Aggregate Demand & Aggregate Supply: Consumption, Saving & Investment

(Time allocation: 5 hours)

- Components of Aggregate Demand and Aggregate Supply
- Consumption Function
- Propensity to Consume
- Equation of Consumption Function
- Saving Function
- Propensity to Save
- Investment

Lesson 19: Determination of Equilibrium Income **(Time allocation: 5 hours**)

- Determination of Equilibrium

- Income in the Economy: Two sector, Three sector and Four sector (Open Economy)

(Diagram only for Two Sector)

- Excess DD and Deficiency in DD
- The Multiplier Mechanism

Lesson 20: Money (Time allocation: 5 hours)

- Barter System and The Need for Money
- Meaning of Money
- Functions of Money
- Types of money
- Measures of Money Supply in Indian Currency

Lesson 21: Banking (Time allocation: 5 hours)

- Meaning and Functions of Central Bank
- Monetary Policy and its Role
- Meaning and Functions of Commercial Banks
- Creation of Credit by Commercial Banks

Lesson22: Government Budget (Time allocation: 4hours)

- What is the Government Budget?
- Structure of Budget
- Balanced Budget versus Deficit Budget or Surplus Budget
- Types of Budget Deficit & its implications
- Budgetary Policy: Fiscal Policy

Lesson 23: Balance of Trade &Balance of Payments (Time allocation: 4hours)

- The Balance of Payments- Current Account, Capital Account, Balance of Payments Surplus and Deficit,
- Autonomous and Accommodating Transactions

Lesson24: Foreign Exchange (Time allocation: 4hours)

- Meaning of Foreign Exchange

- Demand for Foreign Exchange
- Supply of Foreign Exchange

MODULE V: THE INDIAN ECONOMIC DEVELOPMENT

Time: 45 hours **Marks: 16**

Lesson 25: History of Indian Economic Development before 1950

(Time allocation: 5 hours)

- Indian Economy before 1950
- Ancient, Medieval and During British Rule
- Features of Indian Economy at the Time of Independence

Lesson 26: Indian Economy 1950 to 2014 **(Time Allocation: 6 hours)**

1950 to 1990

- Planning Commission in India: Role and Goal
- The Goals of Five Year Plans – Growth, Equity, Modernization Self Reliance

1991 to 2014

- Introduction to Liberalization, Privatization and Globalization
- Factors that have Enabled Globalization – Impact on Agriculture, Industry and Trade, World Trade Organization

Lesson 27: Indian Economy Since 2014 **(Time Allocation: 6 hours)**

- Niti Aayog
- Demonetization
- Goods And Services Tax (GST)
- Aatm Nirbhar Bharat
- Make in India
- Digital India
- Skill India
- Smart India

- Swachch Bharat Abhiyan
- PM Jan Dhan Yojanna
- Mudra Bank Yojana
- Kisan Vikas Patra
- Stand Up India Scheme etc

Lesson 28: Agriculture **(Time allocation: 7 hours)**

- 1950 to 1991: New Agricultural Strategy- Green Revolution-Land Reforms, Subsidies
- Other Reforms in Agriculture -Credit and Marketing, Rural Banking- A critical Appraisal,
- 1991 to 2014: Agricultural Market System- Emerging Alternate Marketing Channels, Agricultural Policies
- Diversification into Productive Activities- Animal Husbandry, Fisheries, Horticulture, Other Alternative Livelihood Options
- 2014 Onwards: Rural Development, Horticulture, Bio- Fuels, E-Chaupals
- Sustainable Development and Organic Farming- Benefits of Organic Farming

Lesson 29: Industry **(Time allocation: 7hours)**

- Background
- 1950 to 1990: Industry and Trade- Public and Private Sectors in Indian Industrial Development, Industrial Policy Resolution (IPR)1956, Small Scale Industry
- Trade Policy: Import Substitution- Effect of Policies on Industrial Development
- Justification of the Strategy of Industrialization
- 1991- 2014: New Economic Policy;
- Liberalization- Deregulation of IndustrialSector, Tax Reforms, Foreign Exchange Reforms, Trade and Investment Policy Reforms
- Privatization
- Globalization- Outsourcing, World Trade
- Reforms in Industry: Disinvestment, Reforms
- 2014 Onwards: Focus on SSI and MSMEs, Special Economic Zones
- Make in India

Lesson 30: Services (Time allocation: 7 hours)

- Types of Services and Need for Infrastructure to Provide Services-What is Infrastructure?
- Relevance of Infrastructure
- The State of Infrastructure in India
- Growth of Service Sector in India in periods 1950 to 1990, 1991 to 2014 and 2014 onwards- (Brief Discussion of each- Energy, Health, Education)
- Foreign Trade
- New Upcoming Services- Communication,
- Business Process Outsourcing (BPO)- Artificial Intelligence, Developing Online Resources and Platforms etc.

MODULE VI: THE CONTEMPORARY ECONOMIC ISSUES IN INDIA

Time: 38 hours Marks -12

Lesson 31: Demography and Human Capital (Time allocation: 5 hours)

- Population Growth
- What is Human Capital
- Sources of Human Capital- Human Capital and Economic Growth
- Human Capital and Human Development
- Measuring Human Development: Human Development Index (HDI)
- State of Human Capital Formation in India
- Gender Equity
- Economic Development; A paradigm shift that includes all Aspects

Lesson 32: Education and Human Resource Development (Time allocation: 6 hours)

- Education for Social Development and National Development
- Education for Life and Livelihood
- Education Policy in India (NEP 2020)
- Growth in Government Expenditure on Education
- Holistic Education, Inclusive Education, Value Education, India Centered Education, Education for All

- Education for Sustainable Development – Lifelong Learning, Learning to Learn
- Education for Human Resource Development, Atma Nirbhar Bharat ,Skill Education
- Use Of ICT In Education
- Education at Various Stages – Elementary, Secondary, Higher and Tertiary, Professional – Medical, Engineering, Management and Teacher Education
- Issues and Challenges in Indian Education System – Quantity and Quality, Teacher Preparation, Teacher Shortage, Adult Education, Education for Differently-abled People, Brain Drainage

Lesson 33: Health **(Time allocation: 5 hours)**

- State Health Infrastructure,
- Private Sector Health Infrastructure,
- Indian Systems of Medicine (ISM),
- Indicators of Health
- Health Infrastructure- A Critical Appraisal
- Urban-Rural and Poor- Rich Divide, Women Health
- National Rural Health Mission (NRHM)

Lesson 34: Workers and Employment **(Time allocation: 5 hours)**

- Participation of People in Employment
- Self -Employed and Hired Workers
- Employment in Firms, Factories and Offices
- Growth and Changing Structure of Employment
- Informalization of Indian Workforce
- Unemployment
- Government and Employment Generation

Lesson 35: Poverty & Inequality (Time allocation: 6 hours)

- Who are The Poor- The Number of Poor in India
- How are Poor People Identified- Categorizing Poverty, The Poverty Line
- What Causes Poverty
- Measurement & Magnitude of Inequality & Unemployment in India
- Causes of Inequality & Unemployment in India
- Policies and Programmes Towards Poverty Alleviation
- Poverty Alleviation Programmes- A Critical Assessment Poverty Alleviation and Employment Generation Programmes in India
- Inequality in India
- Causes of Growing Regional Disparities in India

Lesson 36: Sustainable Development and Economic development

(Time allocation: 6 hours)

- Economic Growth and Economic Development (Comparison Chart)
- Economic Development: A Paradigm shift that Includes all Aspects
- Meaning of Sustainable Development and List of Sustainable Development Goals
- Environmental problems
- Need for Environmental Protection, Preservation and Conservation
- How can we AchieveSustainable Development?

Lesson 37: Blue Economy (Time allocation: 5 hours)

- Meaning of Blue Economy
- Origin
- Importance
- Components
- Sectors of Blue Economy
- Sustainable Development Approach
- How it Helps the Planet

- Challenges of Blue Economy
- Blue Tourism
- Blue economy in India

Project work

- Based on Indian Economic Development
- (Data from India) – One each on Urban and Rural Areas. Atma Nirbhar Bharat
- To Give at Least (Projects as Suggested List of Projects)
- **Project Work: Suggested List of Projects**
- **Sample Projects**
- One Each in Urban and Rural Areas.
- To Give at Least (Projects as Suggested List of Projects)

FAMILY & COMMUNITY STUDIES

RATIONALE

Family & Community Studies, erstwhile Home Science, is a vibrant field of study that covers home economics as well as other aspects such as sociology, psychology, community living, nutrition, and textiles. Family & Community education will empower the learners, both male and female, with the skills to improve every facet of their home life – food, clothing, health, childcare, personal finance, religion, culture, arts, home beautification, etc. It will enable them to take better care of their family while helping them lead a more enriched life. It will mold the learners into responsible persons who can handle day to day challenges. It will teach them their rights and duties as consumers. In this fast-paced world, lifestyle and environmental factors are diluting personal relationships. Children are growing up in an ever-changing environment that can affect their psychology. Family & Community Studies will equip learners with the ability to tackle these difficult life situations.

Family & Community Studies works at a basic level by improving learners' outlook towards others. It inculcates values that can help the learners become responsible for their family and society.

A large number of vocations emerge out of the field of Family & Community Studies. This is of particular importance to the learners who pass out of secondary school as it helps them to identify their future vocation and area of study.

Family & Community Studies is an activity orientated subject; hence stress is laid on the inclusion of a lot of activities and small projects drawn out of everyday life situations. The learners are expected to actively participate in the learning process. These activities are designed to enable individuals to respond to situations in logical, sensitive and positive ways without harming either self or the society.

CURRICULUM OBJECTIVES

The overall curriculum aims of the Family & Community Education are to develop in learners:

- An understanding of the scope and significance of Family & Community Studies;
- Ability to connect knowledge to life outside school;
- Personality and social skills that will help in being part of the society;
- The ability to instill pride in traditional *Bharatiya* culture and identity;
- Appreciate the potential of entrepreneurship and other varied professional opportunities;
- Ease in making informed career choices;
- Become sensitive to the nuances of work vis-a-vis age and gender;
- The ability to take care of the nutritional needs of the family members and ensure good food handling practices;
- The basic knowledge related to textiles used in the home and develop skills for their optimum utilization;
- Awareness towards Consumer Rights and wise purchasing habits;
- An understanding of human developmental process and use it to strengthen interpersonal relationships.

COURSE STRUCTURE

The current curriculum comprises of VII Modules and 25 lessons. The study hours and marks allotted are as follows:

Module	No. of Lessons	Study Hours	Marks allotted
Module 1	3	30	18
Module 2	5	40	12
Module 3	4	40	12
Module 4	4	40	12
Module 5	4	40	12
Module 6	4	40	12
Module 7	1	10	02
Practical/Project Work			20
Total	**25**	**240**	**100**

Note: 20% weightage is assigned to practicals and 80% weightage is assigned to theory (including assignment).

MODULE I: IDEA OF FAMILY &COMMUNITY STUDIES

Time: 30 hrs. **Marks: 18**

Lesson 1: Values, Wisdom and Knowledge: The Ultimate Aim of Education

(Time allocation: 10 hours)

- Universal and Eternal values.
- Vices and Virtues.
- Linguistic Connotation and Sources of Knowledge & Wisdom in Ancient *Bharat*.
- Meaning of Knowledge & Discipline of Knowledge.
- Interdisciplinary and Multidisciplinary Approach.

Lesson 2: Knowledge and Wisdom in Family & Community Studies

(Time allocation: 10 hours)

- Concept of Family & Community Studies.
- Various Branches of Family & Community Studies and their importance.
- Relationship of Family & Community Studies with other disciplines.
- Contribution of Family & Community Studies in other disciplines.
- Scope of Family & Community Studies.
- Home Scientists as the agents of change.

Lesson 3: Origin and Evolution of Family & Community Studies

(Time allocation: 10 hours)

- Introduction to Family & Community Studies.
- Origin and Evolution of Family & Community Studies in India.
- Family & Community Studies in different Countries.
- Fields of Family & Community Studies.
- Mis-concepts associated with Family & Community Studies.
- Some myths and facts.

MODULE II: HUMAN DEVELOPMENT & FAMILY STUDIES

Time: 40 hrs. **Marks: 12**

Lesson 4: Human Growth and Development **(Time allocation: 08 hours)**

- Concept of Growth and Development.
- Characteristics of Growth and Development.
- Factors Affecting Human Growth and Development.
- Role of heredity and environment in the process of Growth and Development.
- Immunization & Vaccination.
- Nature vs. Nurture.

Lesson 5: Understanding Human Life Span **(Time allocation: 08hours)**

- Concept of Human Life Span.
- Indian Theory of Human Life Span: Four *Ashramas* and beyond.
- 16 *Sanskaras* in Indian Philosophy and its relation to the developmental process.
- Theories of Development.
- Stages of Human Life Span.

Lesson 6: Growth and Development from Prenatal to Childhood

(Time allocation: 08 hours)

- Child Development: An Individual Process.
- Growth Process from prenatal to Childhood.
- Stages of Development from prenatal to Middle Childhood.
- Aspects of Child Development.
- Factors Affecting Child Development.
- Acing the Childhood.

Lesson 7: Growth and Development during Adolescence **(Time allocation: 08 hours)**

- Characteristics of Adolescence.
- Concept of I.
- Concept.

- Relationship between self and identity.
- Difference between self and identity.
- Influences on Identity.
- Challenges during the stage.
- Rites to Adolescence.
- Acing the Adolescence.
-

Lesson 8: Growth and Development from Adulthood to Old Age

(Time allocation: 08 hours)

- Adulthood & Old Age: An Introduction to the Stage.
- Stages of Adulthood and Old Age.
- Development during Adult Years.
- Developmental Tasks during Adulthood and Old Age.
- Physical Changes during Adulthood and Old Age.
- Psychosocial Changes during Adulthood and Old Age.
- The Family Life Cycle.
- Challenges and Issues in Aging Process.
- Acing the Adulthood.

MODULE III: HEALTH AND WELLNESS: FOOD AND NUTRITION

Time: 40 hrs. **Marks: 12**

Lesson 9: Health, Fitness and *Yoga* **(Time allocation: 10 hours)**

- Concept of Holistic Health, Hygiene and Healthy Lifestyle.
- Health during different stages of life
- Fitness and *Yoga*
- Some *Yogaasanas* for Healthy Lifestyle.
- Health Scenario in India.

- Parameters of a healthy person.

Lesson 10: Food and its Nutrients (Time allocation: 10 hours)

- Concept of Food and Nutrition.
- Balanced Diet.
- Basic Food Groups for Planning Balanced Diets.
- Food Choices
- Dietary Patterns.

Lesson 11: Preparation of Food: Methods of Cooking Food (Time allocation: 10 hours)

- Concept and importance of Cooking Food.
- Classification of Methods of Cooking.
- Losses of Nutrients during Cooking and ways to conserve nutrients.
- Enhancing Nutritive Value of Food Items.
- Food spoilage and storage.
- Food preservation
- Hygiene in handling stored food.

Lesson 12: Nutrition for Family: Diet therapy and Meal Planning

(Time allocation: 10 hours)

- Introduction to diet therapy.
- Characteristics of diet therapy.
- Meal Planning: The Basic requirements while planning.
- Meal Planning for different age groups
- Diet Therapy

MODULE IV: TEXTILE DESIGNING: THE SCIENCE AND ART OF CLOTHING

Time: 40hrs. **Marks: 12**

Lesson 13: Clothing: Origin, History and Function (Time allocation: 10 hours)

- Origin of Clothing.
- Milestones in the History of Clothing.
- Functions of Clothing.

Lesson 14: Fibre to fabrics **(Time allocation: 10 hours)**

- Concept and Principles of Fibres.
- Classification of Textile fibres
- Types of Manufactured.
- Properties of Fibres
- Yarns.
- Fabric Production.
- Textile finishing.
- Some Important Fibres: Their identification, care and maintenance.
- Care label.

Lesson 15: Elements and Principles of Design: Selection of Clothing

(Time allocation: 10 hours)

- Elements of Design.
- Characteristics of different Elements of Design
- Principles of Design.
- Characteristics of different Principles of Design
- Difference between Elements and Principles of Design.
- Role of Elements and Principles of Design in Fabric construction.
- Fashion Show
- Role of Elements and Principles of Design in Fashion show.

Lesson 16: Traditional Textiles of India **(Time allocation: 10 hours)**

- Traditional Textiles of different States
- Textile Conservation in Museums
- Natural Textiles
- Man-made Textiles

MODULE V: SUSTAINABLE DEVELOPMENT AND RESOURCE MANAGEMENT

Time: 40 hrs. **Marks: 12**

Lesson 17: Introduction to Sustainable Development **(Time allocation: 10 hours)**

- Sustainable Development: Meaning, Need and Importance,
- Historical antecedents of Sustainable Development,
- Goals of Sustainable Development,
- Individual contribution to Sustainable Development,
- Eco-friendly ways and prevention of animal cruelty.

Lesson 18: Resource Management and Resource Planning **(Time allocation: 10 hours)**

- Goals, Resources & Management.
- Types of Resources.
- Resources are limited: Use them wisely.
- Let's do it - Guidelines for optimal use of Resources.
- Management of Resources.
- Steps in Management.
- Steps of Management are inter-related.

Lesson 19: Consumer Education **(Time allocation: 10 hours)**

- Concept of a Consumer.
- Consumer Education.

- Issues and challenges faced by Consumers.
- Consumer Rights and Responsibilities.
- Laws for the Protection of Consumer.
- Consumer Movement.
- Adulteration.
- Standardization Marks.

Lesson 20: Ergonomics and Space Planning

(Time allocation: 10 hours)

- Concept of Ergonomics
- Safety,
- Accuracy,
- Speed,
- Reliability,
- Comfort.
- Site selection & orientation of buildings,
- Structural components of a building.
- Understanding building Sustainability with respect to Economic, Physical, Environmental and Social Components.

MODULE VI: COMMUNICATION AND MASS MEDIA

Time: 40 hrs. **Marks: 12**

Lesson 21: Introduction to Communication **(Time allocation: 10hours)**

- Concept and Nature of Communication.
- Function of Communication.
- Types of Communication.
- Modes of Communication.

- Understanding Human Communication
- Communication in the Family,
- Communication in the Community.

Lesson 22: Mass Media and Development Communication (Time allocation: 10 hours)

- Mass Media Classification and functions.
- Concept of Development Communication.
- Role of Media in Development Communication.
- Strategies in Development Communication.

Lesson 23: Digital Literacy in Global Society (Time allocation: 10 hours)

- 4th Industrial Revolution.
- Information Age.
- Concept of Digital Literacy.
- Importance of Digital Literacy in Communication.
- ICT and its importance.

Lesson 24: Cross-Cultural Communication (Time allocation: 10 hours)

- Concept of Culture.
- Cultural Differences.
- Importance of Culture in Communication.
- Communication Process Across Different Culture.
- Communication Styles.
- Need for Cross-Cultural Communication.
- Cultural Communication Barriers.
- Effective Cross-Cultural Communication.

MODULE VII: CAREERS IN FAMILY & COMMUNITY STUDIES

Time: 10 hrs. **Marks: 02**

Lesson 25: Career and Scope in Family & Community Studies

(Time allocation: 10 hours)

- Career paths in Human Development
- Career paths in Food and Nutrition
- Career paths in Fabrics and Apparel Sciences
- Career paths in Resource Management:
- Career paths in Communication and Mass Media

GEOGRAPHY

RATIONALE

The word Geography is made up of two words, 'Geo' and 'Graphein' which means description of the earth. So, Geography tries to study all the phenomena: physical as well as socio-cultural occurring on the earths' surface. Human beings live on the earth and interact with the elements of the environment in different ways. The study of Geography is therefore important to understand this relationship between human beings and the environment. Geography also tries to study space and place. As all the phenomena occurring on the earth's surface are not the same throughout, the study of Geography helps us in understanding the spatial distribution, pattern and related interactions between human beings and their environment. The very nature of Geography is to enquire about the existing phenomena so, it inculcates in the learners the idea of observation, critical thinking and analysis. Taking into consideration the physical and social aspects, the study of Geography can be helpful in catering to almost all the 17 SDGs identified by the United Nations.

CURRICULUM OBJECTIVES

The Specific Aims of Geography are to:

- Enable the learners to understand what the subject is all about, its knowledge and wisdom, origin and evolution.
- Cultivate the interest of the learners in that subject and encourage them to pursue it as a career.
- Acquiring the ability to interpret the distribution and processes of physical and human phenomena;
- Understanding the dynamic interrelationship between physical and human world;
- Locating places and the relationship between them according to scale;
- Transferring skills from the symbolic to the verbal and vice versa;
- Implementing literacy, oracy, numeracy and graphical skills;
- Promoting the use of geographical information systems;
- Committing to sustainable development;

- Creating an awareness of development in the world.
- Geographical education also contributes to the development of personal and social competence.
- An understanding of how environment and climatic factors have influenced our life.

COURSE STRUCTURE

The current curriculum comprises of 8 modules and 24 lessons. The allotted study hours and weightage are as follows:

Modules	**No of Lessons**	**Study Hours**	**Marks allotted**
Module I	4	45	15
Module II	3	20	10
Module III	2	20	10
Module IV	4	45	10
Module V	2	20	05
Module VI	3	25	10
Module VII	4	45	10
Module VIII	2	20	10
Practical/Project work			20
Total	24	240	100

MODULE I: IDEA OF GEOGRAPHY

Time: 45hrs **Marks:-15**

Lesson 1: Values, wisdom and knowledge: The ultimate aim of education

(Time allocation: 6.30 hours)

- Universal and Eternal values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge& Wisdom in Ancient Bharat
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson 2: Knowledge and Wisdom in Geography

(Time allocation: 6.30 hrs)

- What Geography is All About?- Nature & Scope of Geography (location, space & time)
- Geography through Ages: Knowledge & Wisdom Relevance & Importance of Geography

Lesson 3: Origin and Evolution of Geography (Time allocation: 6.30hrs)

- Contributions of Indian, Greek, Roman, Arab, Chinese & Other scholars in:
  - Earth Systems
  - Physical Geography
  - Human Geography
  - Techniques in Geography
  - Fieldwork tradition in Geography
- Discovery of the world
- Trends- Quantitative Revolution, Spatial Science, Behavioural Geography, Humanistic Geography, Feminism& Post-modernism

Lesson 4: Applications of Geography (Time allocation: 5.30hrs)

- Application of Geographic Knowledge in Society (Case Study Method)
  - Settlement
  - Natural Resource Management
  - Remote Sensing
  - GIS
  - Disaster Management
- Sustainable Development

MODULE II: FUNDAMENTALS OF PHYSICAL GEOGRAPHY

Time: 20hrs **Marks:-10**

Lesson 5: Landforms **(Time allocation: 3 hrs)**

- Evolution of Earth's Crust (Wegener's Theory & Plate tectonics)
- Interior structure of Earth & Isostasy
- Rocks
- Landforms- Dia
- Davisian Cycle of Erosion
- Landforms Made by Agents of Erosion
  - Fluvial (Running water)
  - Glacial (Ice)
  - Aeolian (Wind)
  - Karst (Limestone)
- Sea Waves

Lesson 6: Climate **(Time allocation: 3hrs)**

- Weather & Climate
- Structure & Composition of Atmosphere
- Insolation & Horizontal Distribution of Temperature
- Atmospheric pressure, World Pressure Belts & Winds (local, seasonal & planetary)

- Humidity, Evaporation, Condensation & Precipitation
- Types of Rainfall
- Monsoon, Cyclone & Temperate Cyclone
- Koeppen's Climatic Classification
- Climate Change (Conferences-Montreal to Paris; Chipko movement, Bishnois & sacred grooves)

Lesson 7: Oceanography **(Time allocation: hrs)**

- Ocean Bottom Relief
- Salinity & Temperature
- Waves, Currents & Tides
- Marine Resources (EEZ)

MODULE III: POPULATION AND SETTLEMENT GEOGRAPHY

Time: 20 hrs **Marks: 10**

Lesson 8: Population **(Time allocation: 2hrs)**

- Growth of Population
- Population Structure- Age, Sex, Religion & Literacy
- Demographic Transition Theory
- Distribution of Population in World (factors, data & distribution)
- Density of Population
- World Population Problems

Lesson 9: Settlement **(Time allocation: 2hrs)**

- Types & Characteristics of Settlement (Rural & Urban)
- Primate city, Rank Size Rule & Central Place Theory
- Urbanization& Related Challenges
- New concepts in Urban & Rural Settlement (Shauchalay, Ujjwala yojana & Smart city)

MODULE IV: RESOURCE AND ECONOMIC GEOGRAPHY

Time: 20hrs **Marks: 05**

Lesson 10: Resources **(Time allocation: 6.30hrs)**

- What are Resources and Principle of Conservation of Resources (functional concept of resource)
- Distribution & management of resources
    - Land
    - Soil
    - Water
    - Natural Vegetation
    - Mineral & Power Resource
    - Human
    - Livestock & Wildlife
- (waste management)

Lesson 11: Economic Activities **(Time allocation: 730hrs)**

- Types of Economic Activities
- Agriculture & Land-Use
- Major crops- Rice, Wheat, Sugarcane, Pulses & Oilseeds
- Sustainable Agricultural Development (Old practices, Green Revolution & Innovations)

Lesson 12: Industries **(Time allocation: 7.30hrs)**

- Factors Affecting Location of Industries
- Types of Industries
- Major Industries- Iron & Steel, Cotton textile, IT & knowledge industry
- Major Industrial Regions of the World
- Pattern of Industrial Development in the World (innovations)
- (Box- Industrial Revolution)

Lesson 13: Transport, Trade & Communication

(Time allocation: 5.30hrs)

- Modes of Transport- Land, Water, Air, Pipeline
- Major Transport Routes of the World
- Communication- Older Modes, Optical Fibre Cables, Satellite Communication, Bhuvan, NaVIC, Cyber Space
- Role of Transport & Communication in Socio-Economic Development
- Trade
    - Basis of International Trade
    - Spatial Pattern of International Trade, WTO, GATT, ASEAN, EU, etc.
- Box-magnet levitation, loop, ropeways

MODULE V: ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

Time: 25hrs **Marks: 10**

Lesson 14: Ecosystem **(Time allocation: 5hrs)**

- Concept of Ecosystem
- Interrelationship Among Different Elements of Ecosystem
- Energy flow in Ecosystem (Open System, Closed System, Food Pyramid, Carbon Efficiency)

Lesson 15: Sustainable Development **(Time allocation: 5 hrs)**

- Concept of Development (Indian & western)
- Global Environmental Problems
- Sustainable Development- Challenges & Initiatives (SDGs)

MODULE- VI: GEOGRAPHICAL TECHNIQUES

Time: 25hrs **Marks: 10**

Lesson 16: Cartography **(Time allocation: 3hrs)**

- What is Map
- Elements of a Map
- Types of Maps

- Map Projection

Lesson 17: Statistical Techniques (Time allocation:3 hrs)

- Types of Data (Primary & Secondary)
- Field Survey
- Data Tabulation
- Techniques of Representation (measures of central tendency, 1 dimensional, 2dimensional,etc.)
- Weather Maps & Toposheets

Lesson 18: Remote Sensing & GIS (Time allocation: 2.30hrs)

- Fundamental of Remote Sensing (RS)
- Stages of Remote Sensing
- Resolutions
- Platforms & Sensors
- Data Products- Photographs, , Aerial Photography, Satellite Imageries, Indian Satellite System
- Basics of GIS
- Applications of RS & GIS (Land, Forest, Agriculture & Water)
- (Box- Drone)

MODULE – VII: GEOGRAPHY OF INDIA

Time: 45hrs Marks: 10

Lesson 19: Physiographic Divisions (Time allocation: 10hrs)

- Mountains
- Plains
- Plateaus
- Coastal Plains
- Islands

Lesson 20: Climate of India W.S.R.T. Monsoon (Time allocation:7.30hrs)

- Climatic Classification

- Economics of Monsoon

Lesson 21: Population Characteristics (Time allocation: 7.30hrs)

- Distribution
- Density
- Age Structure
- Sex Ratio
- Literacy
- Religious Structure
- Occupational Structure
- (Box- Census & NSSO)

Lesson 22: Settlement (Time allocation: 1.30hrs)

- Pattern and Trend of Urbanization
- Challenges of Urbanization

  (focus on urbanization)
- Gandhiji's Gram Swaraj

MODULE VIII: CONTEMPORARY INDIA: ISSUES AND CHALLENGES

Time: 20hrs Marks: 10

Lesson 23: Administrative Geography of India (Time allocation: 5hrs)

- Names
- Administrative Boundaries, States, Districts
- Unity in Diversity

Lesson 24: Challenges and Problems of Development (Time allocation: 5hrs)

- Resources
- Agriculture
- Industries
- Transport, Trade & Communication
- Disasters
- Health and Well-being
- Rural Development, Tribal Development & Regional Development (Atma Nirbhar Bharat, Skill India, MSME, Start-up, etc.)

LAW, JUSTICE & GOVERNANCE

RATIONALE

The Course in “Law, Justice and Governance” at the senior secondary level is meant to provide learners with a foundational understanding of Justice as the ultimate aim of all laws; if law doesn’tlead to justice, there is a fundamental flaw in it. The learners should understand that the goal of legislation is to make as many people as possible happy while minimizing inconveniences. Happiness, in Ayn Rand's words, is the mental condition that results from the realization of one's values, ***Justice*** being an important fundamental important value. In ancient India, the sovereign served as the source of all justice. One of the main characteristics of sovereignty in Indian legal theory was the ability to administer justice and impose punishment for immoral and illegal actionsas well as to reward moral actions.

Law and society are born at the same time. Law cannot exist without society, and vice versa. Thesocioeconomic processes present in every civilization have given rise to "law." There was no official declaration of Law in early communities. Even if the word "law" may not have been in useat the time, people's behaviors nevertheless contributed to basic standards of behaviour in every culture. These were referred to as "Customs" and "Usages." The rules of conduct may have been enacted at some point of social evolution, in one way or another. Even now, at different levels andin different forms, there are "customs" and "usages" in all laws. However, in present times, law has a bigger impact.

This Course intends to make the learners familiar with the concept of Justice, Law, connected legalissues and societal values that touch them every day. Additionally, it will empower them to carryout their responsibilities while defending the rights of others.

CURRICULUM OBJECTIVES

The overall objectives of the curriculum of Law, Justice and Governance are to develop in learners:

- An understanding of what the subject is all about, its knowledge and wisdom, origin and evolution;
- Cultivate the interest of learners in the subject and encourage them to pursue it as a career;
- Appreciate the work of Indian and western contributors in this field;
- The knowledge and thought of India in the field for developing a national pride;
- Sensitization towards socio economic, political legal, ethical and moral values emerging fromnational and global concerns;
- An understanding of public affairs and provide an idea about one's rights and obligations as acitizen and as the agents of democratic governance;
- An apprehension of different organs of government;
- Brief idea of the underlying court systems and methods of resolution;
- An understanding of the fundamental duties and fundamental rights as given in the Constitution of India;
- Insight into the major essential elements of law that govern our lives;
- Insight into various legal processes and practices;
- Ahe ability to communicate with others and express their views clearly and logically in legal language;
- A positive attitude towards the learning of law and an appreciation of the aesthetic nature andcultural aspect of law.

COURSE STRUCTURE

The current curriculum comprises of X Modules and 31 lessons. The study hours and marksallotted are as follows:

Module	No. of Lessons	Study Hours	Marks allotted
Module 1	4	24	10
Module 2	3	24	10
Module 3	4	32	10
Module 4	3	24	10
Module 5	3	24	10
Module 6	3	24	10
Module 7	3	24	10
Module 8	3	24	05
Module 9	2	16	05
Module 10 (Assignment/Practical/Project Work) *	3	24	20
Total	**31**	**240**	**100**

***Project Work (any two)**

(**Total Marks: 20)**

- Research: Any latest Supreme Court judgement of the year in which you are appearing for the exam. (Details: Research should include: brief facts of the case, Point of Law involved and the decision arrived in the judgement.)
- Drafting: (Content writer will provide 5 situations.) Students are required to make a draft on any one of the situations.
- Internship: (Duration: 1 month, Diary Entry: 15)

Students are supposed to undertake an internship with any lawyer and mention the details of the casesattended by them during the training period.

Details should include: title of the case, nature of the case and proceeding before the Court

MODULE I: IDEA OF LAW & JUSTICE

Time: 24 hrs. **Marks: 10**

Lesson 1: Values, Wisdom and Knowledge: The Ultimate Aim of Education

(Time allocation: 06 hours)

- Universal and Eternal values.
- Vices and Virtues.
- Linguistic Connotation and Sources of Knowledge & Wisdom in Ancient *Bharat*.
- Meaning of Knowledge & Discipline of Knowledge.
- Interdisciplinary and Multidisciplinary Approach.

Lesson 2: Knowledge and Wisdom in Law **(Time allocation: 06 hours)**

- Nature and Meaning of Law & Justice.
- Different Schools of Law.
- Scope of Law.
- Functions and Purposes of Law.
- Sources of Law.
- Classification of Law.
- Relationship of Law with other disciplines.
- Relationship of Law with Ethics, Justice and Governance.

Lesson 3: Origin and Evolution of Legal System **(Time allocation: 06 hours)**

- Origin of Law.
- Concept of Justice and Ethics in Law.
- Indian Laws & Indian Judicial System during different periods.

Lesson 4: Justice: The Ultimate Objective of Law **(Time allocation: 06 hours)**

- Concept and origin of Justice in Legal System
- Historical development of Justice, Morality and Ethics
- Achievement of the end of Justice
- Role of Morality and Ethics in Law

MODULE II: POLITY AND GOVERNANCE

Time: 24hrs. **Marks: 10**

Lesson 5: Nation & State **(Time allocation: 08 hours)**

- Concept and Evolution of Nation.
- National Self Determination.
- Origin, Concept and Evolution of State.
- Theories on emergence of State
  - Social Contract Theory,
  - Divine Origin Theory,
  - Organic Theory.
- Types of State
  - Authoritarian Government,
  - Oligarchic Government,
  - Democratic Government.

Lesson 6: Organs of Government (Time allocation: 08 hours)

- Forms of Government and their functions
  - The Executive,
  - Parliamentary Form of Government
    - President,
    - Vice-President,
    - Prime Minister.
  - The Parliament,
  - The Judiciary.

Lesson 7: Separation of Powers **(Time allocation: 08 hours)**

- Meaning of the Doctrine of Separation of Powers
- Historical Background
- Significance of the Doctrine
- Separation of Power in Practice

MODULE III: CONSTITUTION OF INDIA –I

Time: 32 hrs. **Marks: 10**

Lesson 8: Constitution of India: An Overview **(Time allocation: 08 hours)**

- Framing of the Indian Constitution.
- The Constituent Assembly.
- Drafting Committee.
- Key Words of the Preamble and their Significance.
- Salient features of the Constitution.
- Constitutional Amendment and the Doctrine Basic Structure.
- Emergency Provisions in the Constitution.

Lesson 9: Fundamental Rights **(Time allocation: 08 hours)**

- Need and importance of Fundamental Rights.
- Fundamental Rights
    - Right to Equality,
    - Right to Freedom,
    - Right against Exploitation,
    - Right to Freedom of Religion,
    - Cultural and Educational Rights,
    - Right to Constitutional Remedies.

Lesson 10: Directive Principles of State Policy (Time allocation: 08 hours)

- Meaning and nature of Nature of State Policy Directive Principles.
- Philosophical base of Directive Principles of State Policy.
- Classification of State Policy Directive Principles.
- Distinction between Fundamental Rights and Directive Principles of State Policy.
- Relation between Fundamental Rights and Directive Principles of State Policy.
- Justiciability of Directive Principles.
- Inter-Relationship between Fundamental Rights and Directive Principles.
- Implementation of Directive Principles of State Policy.

Lesson 11: Fundamental Duties (Time allocation: 08 hours)

- Fundamental Duties.
- List of Fundamental Duties.
- Need and Importance of Fundamental Duties.
- Relationship between Fundamental Rights, Directive Principles and Fundamental Duties.

MODULE IV: CONSTITUTION OF INDIA II

Time: 24 hrs. **Marks: 10**

Lesson 12: Union and State Executive (Time allocation: 08 hours)

- President: Election, Qualification, Powers & Functions.
- Prime Minister and the Council of Minister: Appointment, Qualification, Powers & Functions.
- Composition of State Executive.
- Governor: Appointment, Qualification, Powers & Functions.

Lesson 13: Union Parliament and State Legislature **(Time allocation: 8 hours)**

- Composition of the two houses.
- Powers of Lok Sabha and Rajya Sabha.
- State Legislature.

Lesson 14: The Indian Judiciary **(Time allocation: 8 hours)**

- Structure of Judiciary.
- Doctrine of Judicial Review.
- High Court and the Subordinate Courts.

MODULE V: COURT SYSTEMS AND METHODS OF RESOLUTION

Time: 24 hrs. **Marks: 10**

Lesson 15: Delivery of Justice & Tribunals **(Time allocation: 08 hours)**

- Civil Disputes.
- Criminal Disputes.
- Dispute Resolution through the Tribunals
    - Administrative Tribunals,
    - Tribunals for other matters.
- Alternative Dispute Resolution Mechanism
    - Arbitration,
    - Conciliation,
    - Mediation.
    - Negotiation.

Lesson 16: Legal Services and Lok Adalat **(Time allocation: 08 hours)**

- Evolution of Legal Aid Services.
- Legal Services Authorities Act, 1987.
- Lok Adalat.

Lesson 17: Professional Ethics in Law **(Time allocation: 08 hours)**

- Code of Conduct for Legal Practitioner and Judiciary.
- Rules regarding an Advocate's obligation to the court.
- Rules concerning the Advocate's duty to the client.
- Rules regarding an Advocate's obligation to Opponents.
- Rules concerning an Advocate's duty to other Advocates.
- Related Provisions under Advocates.

MODULE VI: INTRODUCTION TO SPECIFIC LAWS – I

Time: 24 hrs. **Marks: 10**

Lesson 18: Introduction to Legal Aptitude & Legal Reasoning

(Time allocation: 08 hours)

- Introduction to Logical Thinking.
- Method of Inverse Deduction.
- Analogy.
- Fortiori.
- Legal terms and maxims.

Lesson 19: Law of Crimes **(Time allocation: 08 hours)**

- The Indian Penal Code, 1860 – Basic Provision.

Lesson 20: Civil Laws **(Time allocation: 08 hours)**

- Introduction.
- Law of Contract.
- Law of Torts.
- Family Law: Marriage and Divorce; Adoption; Guardianship; Inheritance and Succession.

MODULE VII: INTRODUCTION TO SPECIFIC LAWS – II

Time: 24 hrs. **Marks: 10**

Lesson 21: Procedural Laws **(Time allocation: 08 hours)**

- Criminal Law.
- Salient Features
  - The Code of Criminal Procedure, 1973,
  - The Code of Civil Procedure, 1908.
- The Indian Evidence Act, 1872.

Lesson 22: Consumer Protection Laws **(Time allocation: 08 hours)**

- Evolution and Need of Consumer Laws.
- Formal definitions of 'Consumer' and 'Services'.
- Consumer Dispute Redressal Agencies.

Lesson 23: Women, Children and Law **(Time allocation: 08 hours)**

- Protection of Children from Sexual Offences (POCSO).
- Juvenile Justice.
- Protection of Women against Domestic Violence.
- Prevention of Sexual Harassment at workplace.

MODULE VIII: LAWS IN INTERNATIONAL CONTEXT

Time: 24hrs. **Marks: 05**

Lesson 24: International Law **(Time allocation: 08 hours)**

- Introduction to International Law.

- Sources of International Law.
- Public International Law and Private International Law.

Lesson 25: International Institutions **(Time allocation: 08 hours)**

- Introduction to United Nations.
- United Nations and Its Organs.
- United Nations Specialized Agencies.

Lesson 26: Human Rights Law **(Time allocation: 08 hours)**

- Concept and Development of Human Rights.
- International Bill of Rights.
- Group rights: Women, Children, Persons with Disabilities, Indigenous Persons, Refugees, Migrants, Internationally Displaced Persons.
- Protection and Enforcement of Human Rights in India.

MODULE IX: LAW AND CONTEMPORARY DEVELOPMENTS

Time: 16 hrs. **Marks: 05**

Lesson 27: Environmental Law and Sustainable Development

(Time allocation: 08 hours)

- Need and Meaning of Sustainable Development.
- Constitutional and Legal Framework for the Protection of the Environment in India.
- National Green Tribunal.

Lesson 28: Contemporary Developments in Law **(Time allocation: 08 hours)**

- Triple *Talaq*.

- LGBTQ Rights.
- Coparcenary Rights.
- RTI.
- Uniform Civil Code.
- Rights of Elderly Persons.
- IPR.

MODULE X: TOOLS & TECHNIQUES OF LAW

Time: 24 hrs. **Marks: 20**

Lesson 29: Basic Drafting in Law (Time allocation: 08 hours)

- Introduction.
- Plaint and Written Statement.
- Gift Deed.
- Lease Deed.
- Sale Deed.
- Will.

Lesson 30: Legal Research (Time allocation: 08 hours)

- Introduction.
- Case Research Methodology.
- Case Citation.
- Use of Online Resources - Legal Search Engines - SCC Online, Indian *kanoon*, *Manupatra* and West Law.
- Searching Case Laws and Case History.

Lesson 31: Recent Judgments in India (Time allocation: 08 hours)

- *Sabrimala* Temple Case (Gender equality)

- *Navtej Singh Johar* Case (LGBTQ).
- *Vineeta Sharma* Case (Coparcenary Right).
- *Shreya Singhal* Case (IT Act).
- *Shayara Bano* Case (Triple Talaq).
- *Aruna Shanbaug* Case (Case on Euthanasia).
- *Paramvir Singh Saini* Case (Human Rights Violation of the Detainee).
- *Kush Kalra* (NDA Admission Judgement).

MATHEMATICS

RATIONALE

Mathematics is a fundamental part of human thought and logic, and integral to attempts at understanding the world and ourselves. Mathematics provides an effective way of building mental discipline and encourages logical reasoning and mental rigor. In addition, mathematical knowledge plays a crucial role in understanding the contents of other school subjects such as science, social studies, and even music and art.

The Science of Mathematics has its roots in the ancient Bharat that is India, and in the *Vedas*. In the *Vedic* Period, Mathematics was called by the general name of '*Ganit*', which included *Ank-Ganit* (Arithmetic), *Rekha-Ganit* or *Gyamiti* (Geometry), *Beejganit* (Algebra), etc., along with Astronomy and Astrology. Numerals, Zero, Place Value system, Decimal System and many other concepts in Mathematics were discovered/invented here, and so are Bharat's gift to the world.

Mathematics has a transversal nature. If we reflect on the history of curriculum in general, then mathematics (geometry and algebra) were two of the seven liberal arts in Greek as well as in medieval times. This historical role supports the notion that mathematics has provided the mental discipline required for other disciplines.

Since mathematics provides foundational knowledge and skills for other school subjects, such as sciences, art, economy, etc., the importance of studying mathematics cannot be neglected.

The curriculum of Mathematics has been developed based on the vision and principles of the new National Education Policy - 2020 of the Ministry of Education (Formerly MHRD), Govt. Of India. It envisions an India-centric education system that contributes directly to transforming our nation sustainably into an equitable and vibrant knowledge society by providing high-quality education to all.

Mathematics is an important subject of the curriculum at every stage of school education due to its numerous applications in all walks of life. NEP, 2020 has recognized the significance of mathematics and mathematical thinking in upcoming research-oriented fields such as

artificial intelligence, machine learning and data science. NEP states Mathematical Education to build a platform, nurture, foster, encourage and multiply mathematical thinking in learners.

CURRICULUM OBJECTIVES

The overall curriculum aims of the Mathematics Education are to develop in learner:

- Understand what the subject is all about, its knowledge and wisdom, origin and evolution;
- Cultivate the interest of learners in the subject and encourage them to pursue it as a career;
- Appreciate the work of Indian and western mathematicians in this field;
- The sensitization towards the development of Mathematics in India and appreciate all mathematical knowledge that originated in India;
- Awareness about the rich contribution of ancient *Bharat* to the field of Mathematics;
- Appreciation and interest in *Vedic* Mathematics;
- Understanding of *Vedic* Mathematics as a tool for making calculations easier;
- The ability to save time by increasing the speed of calculation;
- The ability to think critically and creatively, to conceptualize, inquire and reason mathematically, and to use Mathematics to formulate and solve problems in daily life as well as in mathematical contexts and other disciplines;
- The ability to communicate with others and express their views clearly and logically in mathematical language;
- The ability to manipulate numbers, symbols and other mathematical objects;
- Number sense, symbol sense, spatial sense, measurement sense and the capacity to appreciate structures and patterns;
- A positive attitude towards the learning of Mathematics and an appreciation of the aesthetic nature and cultural aspect of Mathematics.

COURSE STRUCTURE

The current curriculum comprises of VI Modules and 41 lessons. The study hours and marks allotted are as follows:

Modules	No of Lessons	Study Hours	Marks Allotted
Module 1	05	20	11
Module 2	08	35	10
Module 3	02	15	06
Module 4	03	20	08
Module 5	05	35	10
Module 6	07	35	11
Module 7	06	35	12
Module 8	03	30	06
Module 9	02	15	06
Practical/Project Work			20
Total	**41**	**240**	**100**

MODULE I: IDEA OF MATHEMATICS

Time: 20 hrs. **Marks: 11**

Lesson 1: Values, Wisdom and Knowledge: The Ultimate Aim of Education

(Time allocation: 04 hours)

- Universal and Eternal values.
- Vices and Virtues.
- Linguistic Connotation and Sources of Knowledge & Wisdom in Ancient *Bharat*.
- Meaning of Knowledge & Discipline of Knowledge.
- Interdisciplinary and Multidisciplinary Approach.

Lesson 2: Knowledge and Wisdom in Mathematics (Time allocation: 04 hours)

- Concept of Mathematics
- Various Branches of Mathematics and their Importance.
- Scope and Relationship of Mathematics with other disciplines.
- Sustainable Development and Mathematics.

Lesson 3: Origin and Glorious Evolution of Mathematics in India

(Time allocation: 04 hours)

- Indian Mathematicians and their Contributions to the World.
    - Ancient Indian Mathematicians,
    - Medieval Indian Mathematicians,
    - Modern Indian Mathematicians.
- Achievements/Awards in the Field of Mathematics.

Lesson 4: Origin and Glorious Evolution of Mathematics in the West

(Time allocation: 04 hours)

- Western Mathematicians and their Contributions to the World.
    - Ancient Western Mathematicians,
    - Medieval Western Mathematicians,
    - Modern Western Mathematicians.
- Achievements/Awards in the Field of Mathematics.

Lesson 5: Introduction to Vedic Mathematics (Time allocation: 04 hours)

- Introduction to the Father of *Vedic* Mathematics.
- History of *Vedic* Mathematics.
- Names of *Sutras* and *Up-Sutras*, and their meaning.
- Aims and objective of Vedic Mathematics.
- Fundamental Operations such as Addition, Subtraction, Multiplication, Division.
- Computing Square, Square Root, Cube, Cube Root and their Application.

MODULE II: MATHEMATICAL LOGIC

Time: 35 hrs. **Marks: 10**

Lesson 6: Sets (Time allocation: 05 hours)

- Introduction.
- Sets and their Representations.
- Classification of Sets
- Subsets.
- Power Set.
- Universal Set.
- Cardinality of a Set.
- Venn-Diagram and its Applications.
- Operations on Sets.
- Complement of a Set.
- Practical problems on Union and Intersection of two Sets and three Sets.

Lesson 7: Relations and Functions (Time allocation: 05 hours)

- Introduction
- Cartesian Product of Two Sets.
- Cartesian Product of Two Sets.
- Definition of a Relation.
- Domain.
- Co-domain and Range of a Relation.
- Definition of a Function.

- Domain and Co-domain and Range of a Function.
- Graphical Representation of a Function.
- Some Special Functions.
- Sum, Difference, Product and Inverse of a Function.

Lesson 8: Application of Relations and Functions (Time allocation: 05 hours)

- Introduction
- Types of Relations and Equivalence Relation.
- One - One Function.
- Many - One Function.
- Onto Functions.
- One - One Into Functions.
- One - One Onto Functions.
- Many - One Functions.
- Composition of Functions.
- Inverse of a Function.
- Binary Operations.

Lesson 9: Sequences and Series (Time allocation: 05 hours)

- Introduction
- Sequences.
- Arithmetic Progression.
- Arithmetic Mean.
- Geometric Progression.
- General terms of A.P and G.P.
- Sum of n terms of an A.P. and G.P.
- Infinite G.P. and its Sum.
- Geometric Mean.
- Relation Between A.M. and G.M.
- Series.
- Sum of n terms of the special series: Σn, Σn^2 and Σn^3.

Lesson 10: Concept of Permutations and Combinations

(Time allocation: 04 hours)

- Introduction
- Fundamental Principle of Counting.
- Factorial *n*, where *n* is a whole number.
- Permutations and Combinations, also using the *Sutras*/*Up-Sutras* of *Vedic* Mathematics.
- Derivations of Formulae and their Relations.
- Simple Applications of Permutations and Combinations.

Lesson 11: Meru Prastar: The Binomial Theorem (Time allocation: 04 hours)

- Introduction
- Binomial Theorem for Positive Integral Indices
- General and Middle terms of a Binomial Expansion.
- Simple Applications.
- Higher order powers of polynomials will be solved, using *Meru Prastar*.

Lesson 12: Mathematical Reasoning: Logical Problems in Mathematics

(Time allocation: 04 hours)

- Introduction
- Statements.
- New statements from Old.
- Special Words/Phrases.
- Implications.
- Validating Statements.
- Consolidating the Understanding of 'if and only if' (Necessary and Sufficient) Conditions, 'Implies', 'and/or', 'implied by', 'and', 'or', and their use through a variety of examples related to real life and Mathematics.
- Validating the Statements Involving the Connecting words - difference between Contradiction.
- Converse and Contrapositive.
- Principle of Mathematical Induction.

Lesson 13: Principle of Mathematical Induction **(Time allocation: 03 hours)**

- Introduction
- Principle of Mathematical Induction.
- Application of principle of Mathematical Induction.

MODULE III: NUMBER SYSTEM

Time: 15 hrs. **Marks: 06**

Lesson 14: **Fundamentals of Number System** **(Time allocation: 05 hours)**

- Introduction
- Origin of Numbers and their Geometrical representation.
- Natural Numbers.
- Whole Numbers.
- Integers.
- Rational Numbers.
- Irrational Numbers.
- Real Numbers.
- Decimal Representation and Decimal Expansion.

Lesson 15: Advanced Number System: Complex Numbers

(Time allocation: 10 hours)

- Introduction
- Non - Negative Integral Powers of '*i*'.
- Conjugate of a Complex Number.
- Geometrical representation of a Complex Number.
- Modulus of a Complex Number.
- Equality of two Complex Numbers.
- Addition of Complex Numbers, also using the *Sutras*/*Up-Sutras* of *Vedic* Mathematics.
- Properties of Complex Numbers.
- Argument of a Complex Number.
- Multiplication of two Complex Numbers, also using the *Sutras*/*Up-Sutras* of *Vedic* Mathematics.

- Division of two Complex Numbers, also using the *Sutras*/*Up-Sutras* of *Vedic* Mathematics.
- Properties of Multiplication of Complex Numbers.
- Square Root of a Complex Number, also using *Sutras*/*Up-Sutras* of *Vedic* Mathematics.

MODULE IV: TRIGONOMETRY

Time: 20 hrs. **Marks: 08**

Lesson 16: Trigonometric Functions (Time allocation: 08 hours)

- Introduction
- Circular Angles.
- Measures of Circular Angles.
- Radian measure of an angle.
- Trigonometric Functions.
- Trigonometric Functions of Sum and Difference of Two Angles.
- Graphs of Trigonometric Functions.
- Periodicity of the Trigonometric Functions.
- Simplification and Proof of Trigonometric Identities.
- Trigonometric Equations and finding their General Solution.
- Formulation of Identities through the use of *Sutras*/*Up-Sutras* of *Vedic* Mathematics.
- Values of *t*-ratios will be solved and identities will be proved, using *Sutras*/*Up-Sutras* of *Vedic* Mathematics.

Lesson 17: Relationship between Sides and Angles of a Triangle

(Time allocation: 05 hours)

- Derivations and Application of the following formulae:
  - Sine Formula.
  - Cosine Formula.
  - Projection Formula.

Lesson 18: Inverse Trigonometric Functions (Time allocation: 05hours)

- Introduction
  - Basic Concepts: Range,Domain
- Principle Value branches of Inverse Trigonometric Functions.
- Graph of Inverse Trigonometric Functions (plotting the coordinates).
- Elementary Properties of Inverse Trigonometric Functions.
- Application of Inverse Trigonometric Functions.

MODULE V: ALGEBRA

Time: 35 hrs. **Marks: 10**

Lesson 19: Linear Inequalities (Time allocation: 05 hours)

- Linear Inequalities.
- Algebraic Solutions of Linear Inequalities in one Variable and their Representation on the Number Line.
- Graphical solution of Linear Inequalities in two Variables.
- Graphical Solution of the System of Linear Inequalities in two Variables.

Lesson 20: Understanding Linear Programming (Time allocation: 05 hours)

- Introduction
- Definition of Various terms Involved in Linear Programming.
- Formulation of Linear Programming problem.
- Geometric Approach to Linear Programming problem.
- Solution of Linear Programming Problems.

Lesson 21: Quadratic Equations and Quadratic Inequalities

(Time allocation: 05 hours)

- Introduction
- Roots of a Quadratic Equation.
- Solution of Quadratic Equation by quadratic formula.
- Nature of roots, Relation between Roots and Coefficients of a Quadratic Equation.
- Fundamental Theorem of Algebra.

- Solution of Quadratic Inequalities, also using *Sutras*/*Up-Sutras* of *Vedic* Mathematics

Lesson 22: Cartesian coordinate system (Time allocation: 08 hours)

- Rectangular Coordinate Axis.
- Distance between two Points.
- Section formula, also using *Sutras*/*Up-Sutras* of *Vedic* Mathematics.
- Area of a triangle, also using *Sutras*/*Up-Sutras* of *Vedic* Mathematics.
- Condition for collinearity of Three Points.
- Inclination and Slope of a Line.
- Slope of a line joining two Distinct Points.
- Conditions for Parallelism and Perpendicularity of Lines.
- Intercepts made by a Line on the Axis.
- Angle between two Lines.
- Shifting of Origin.

Lesson 23: Matrices (Time allocation: 08 hours)

- Introduction
- Matrix.
- Types of Matrices and their Representation.
- Order, Equality and Types of Matrices.
- Transpose of a Matrix.
- Symmetric and Skew-Symmetric Matrices.
- Addition, Subtraction, Multiplication and Scalar Multiplication of Matrices.
- Simple Properties of Addition, Subtraction, Multiplication and Scalar Multiplication.
- Invertible Matrices.
- Elementary Operations.
- Inverse of a Matrix by elementary operations, also using Sutras/Up-Sutras of Vedic Mathematics.
- Singular and Non - Singular Matrix.
- Adjoint and Inverse of a Matrix.
- Solution of a System of Linear Equations.
- Criteria for consistency of a System of Equations.

- Solving System of Linear Equations in two or three Variables (having a unique solution), using the Inverse of a Matrix.

Lesson 24: Determinants **(Time allocation: 08 hours)**

- Introduction
- Determinant.
- Determinants of a Square Matrix (up to 3 × 3 matrices).
- Properties of Determinants.
- Value of Determinants.
- Area of a Triangle.
- Minors and Cofactors.
- Evaluation of a Determinant using Properties.
- Application of Determinants.

MODULE VI: GEOMETRY

Time: 35 hrs. **Marks: 11**

Lesson 25: Co-ordinate Geometry (2-D) **(Time allocation: 05 hours)**

- Introduction
- Equation of a Line in Normal Form.
- Equation of a Line passing through a given Point, also using *Sutras*/*Up-Sutras* of *Vedic* Mathematics.
- Equation of a Line passing through three Non-Collinear Points.
- Equation of Plane in the Intercept Form.
- Angle between two Planes.
- Distance of a Point from Plane.

Lesson 26: Straight Line **(Time allocation: 05 hours)**

- Introduction
- Reduction of the Equations of a Line into Symmetric Form.
- Perpendicular Distance of a Point from a Line.

- Angle between a Line and a Plane.
- Condition of Coplanarity of Two Lines.

Lesson 27: Circles **(Time allocation: 05 hours)**

- Introduction
- Equation of a Circle in standard form.
- General Equation of a Circle.

Lesson 28: Conic Sections **(Time allocation: 05 hours)**

- Sections of a cone.
- Ellipse.
- Parabola.
- Hyperbola.
- Rectangular Hyperbola.
- Standard Equations and Simple Properties of Parabola, Ellipse and Hyperbola and problems based on them.

Lesson 29: Algebra of Vectors **(Time allocation: 08 hours)**

- Introduction
- Some basic concepts
- Types of Vectors.
- Addition of Vectors.
- Position Vector of a point.
- Multiplication of a Vector by a Scalar.
- Product of two Vectors.
- Vector as a directed Line Segment.
- Negative of a Vector.
- Coplanarity of Vectors.
- Resolution of a Vector.
- Section formula.
- Direction Cosine and Ratios of a Vector.

- Scalar and Vector product of Vectors.
- Triple Product of Vectors.

Lesson 30: 3-D Geometry **(Time Allocation: 07 hours)**

- Introduction to 3-D Geometry.
- Direction Cosine.
- Coordinate Axis and Coordinate Planes in three-Dimensional Space.
- Coordinates System and Coordinates of a Point in space.
- Distance between two Points.
- Vector Equations of a Plane and Problems based on them.
- Vector Equations of a Line and Problems based on them.
- Section Formula.
- Coordinates of a point of Division of a Line Segment.

MODULE VII: DIFFERENTIAL CALCULUS

Time: 35 hrs. **Marks: 12**

Lesson 31: Limits and Continuity **(Time Allocation: 06 hours)**

- Introduction
- Limit of a Function.
- Left - Hand and Right - Hand Limits.
- Basic Theorems of Limits.
- Limit of some important Functions.
- Continuity of a Function at a Point.
- Properties of Continuous Functions.

Lesson 32: Derivatives and its Application Part I **(Time Allocation: 06 hours)**

- Introduction
- Derivatives.
- Intuitive idea of Derivatives.
- Rate of Change of Quantities.
- Approximations.

- Slope of Tangent and Normal to a Curve and its Application.
- Equation of Tangent and Normal to a Curve.
- Mathematical formulation of *Rolle's* theorem.
- *Lagrange's* Mean Value Theorem.
- Relation between the sign of the Derivative and monotonicity of function.
- Increasing and Decreasing Functions.

Lesson 33: Derivatives and its Application Part II (Time allocation: 06 hours)

- Local Maxima and Local Minima.
- Maximum and Minimum Values of a Function, Conditions for Maximum and Minimum.
- Use of Second Derivative for Determination of Maximum and Minimum Values of a Function.
- Application of Maxima and Minima.
- Higher-order Differentiation and Derivative of Product of two and three functions, Derivative of $p(x)/q(x)$ functions, using *Sutras*/*Up-Sutras* of *Vedic* Mathematics.

Lesson 34: Fundamentals of Differentiation (Time allocation: 06 hours)

- Derivative of a Function, Velocity as Limit.
- Geometrical Interpretation of dy/dx.
- Derivative of Constant Function.
- Derivative of a Function from First Principle.
- Algebra of Derivatives.
- Derivatives of Sum and Difference of Functions and Product of Functions.
- Quotient Rule and Chain Rule.

Lesson 35: Differentiation of Trigonometric Functions

(Time Allocation: 06 hours)

- Derivative of Trigonometric Functions.
- Derivatives of Inverse Trigonometric Functions.
- Second-Order derivative and its Application.

Lesson 36: Differentiation of Exponential and Logarithmic Functions

(Time Allocation: 05 hours)

- Log and its Properties.
- Derivatives of Exponential and Logarithmic functions.
- Second-order Derivatives.
- Derivative of Parametric Functions.
- Second-order Derivative of Parametric Functions.

MODULE VIII: INTEGRAL CALCULUS

Time: 30 hrs. **Marks: 06**

Lesson 37: Concept of Integration **(Time Allocation: 10 hours)**

- Introduction
- Integration as an Inverse Process of Differentiation.
- Methods of Integration.
- Integrals of some Particular Functions.
- Integration using Partial Fractions (Linear and Quadratic fractions).
- Integration by Parts.
- Solution of partial Fractions using Single and Repeated factors in denominator, using *Sutras*/*Up-Sutras* of *Vedic* Mathematics.

Lesson 38: Integrals and their Application **(Time Allocation: 10 hours)**

- Indefinite Integrals.
- Definite Integrals.
- Fundamental theorem of Calculus.
- Evaluation of Definite Integrals by Substitution.
- Some properties of Definite Integrals.
- Integration of Product of two Functions, using *Sutras*/*Up-Sutras* of *Vedic* Mathematics.

Lesson 39: Differential Equations **(Time Allocation: 10 hours)**

- Introduction
- Basic concepts.

- General and Particular Solutions of a Differential Equation.
- Formation of a Differential Equation whose general solution is given.
- Methods of solving Differential Equations (First Order, First Degree and Variable Separable).

MODULE IX: STATISTICS AND PROBABILITY

Time: 15 hrs. **Marks: 06**

Lesson 40: Descriptive Statistics: Measures of Dispersion

(Time Allocation: 10 hours)

- Introduction
- Measures of Central Tendency.
- Measures of Dispersion.
- Range.
- Mean Deviation.
- Variance and Standard Deviation.
- Analysis of Frequency Distributions.

Lesson 41: Probability: Random Events and Experiments

(Time Allocation: 05 hours)

- Introduction
- Random Experiments.
- Event.
- Axiomatic Approach to Probability.
- Conditional Probability.
- Multiplication Theorem on Probability.
- Independent Events.
- *Bayes'* theorem.
- Random Variables and their Probability Distributions.
- *Bernoulli* Trials and Binomial Distribution.

PHYSICS

RATIONALE

Physics is an essential part of the educational system and plays a pivotal role in the future progress of humankind. It is an important element in the education of chemists, engineers, computer scientists, as well as practitioners of the other physical and biomedical sciences. Along with developing general understanding of the world, it also helps in enhancing critical thinking and scientific aptitude. The syllabus has been designed in a way that it integrates the theoretical knowledge with the real life experiences. From switching on of a bulb to sending a missile in space, from using simple glasses for reading to understand how heavy machines work, Physics is evident everywhere . The content also incorporates the emerging fields as astrophysics, nuclear physics and electronics as it find usage in day to day life. The study of physics also paves way for acquiring life skills.

CURRICULUM OBJECTIVES

This course will:

- Enable the learners to understand what the subject is all about, its knowledge and wisdom, origin and evolution.
- Cultivate the interest of the learners in that subject and encourage them to pursue it as a career.
- Appreciate the work of Indian and other scientists in this field
- Gain knowledge about the role of Physics in various fields as matter, thermodynamics, waves, electricity, and magnetism. optical, conductors etc
- Develop understandings of terms, concepts, various laws, principals related with the abovementioned fields.
- Find solution to environmental problems by interdisciplinary, transdisciplinary approach.
- Link and develop the role of Physics to various fields for benefit of mankind by linking with the sustainable development goals.
- Develop scientific attitude,problem solvingability and experimental and communications skills

COURSE STRUCTURE

The current curriculum comprises of IX Modules and 30 lessons. The study hours and marks allotted are as follows:

Module	**No. of Lessons**	**Study Hours**	**Marks allotted**
Module I	3	15	11
Module II	7	63	18
Module III	3	24	06
Module IV	2	18	05
Module V	2	18	05
Module VI	5	40	15
Module VII	4	32	10
Module VIII	3	21	07
Module IX	1	09	03
Assignment			20
Total	**30**	**240**	**100**

*Note: 20% weightage is assigned to practicals and

80% weightage is assigned to theory (including assignment).*

MODULE I: IDEA OF PHYSICS

Time: 15hrs. **Marks: 11**

Lesson 1: Values, Wisdom and Knowledge: The Ultimate Aim of Education

(Time allocation: 05 hours)

- Universal and Eternal values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge & Wisdom in Ancient Bharat
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson 2: Knowledge and Wisdom in Physics **(Time allocation: 05 hours)**

- What Is Physics All About?
- Its Various Branches and Their Importance
- Relationship of Physics With Other Subjects
- Applications of Physics In Everyday Life

Lesson 3: Origin and Evolution of Physics

(Time allocation: 05 hours)

- The Most Primitive Use of Instruments and Physical Phenomenon by People of Early Civilisations.
- Glorious History of Physics and Eminent Physist.
    - Ancient India
    - Pre-Independence
    - Post-Independence

MODULE II: MOTION, FORCE AND ENERGY

Time: 63hrs. **Marks: 18**

Lesson 4: Units and Measurements **(Time allocation: 09 hours)**

- The International System of Units
- Measurement of Long Distance
- Measurement of Mass

- Measurement of Time
- Accuracy, Precision of Instruments and Errors In Measurement
- Significant Figures
- Error Analysis
- Dimensions of Physical Quantities
- Dimensional Formulae and Dimensional Equations
- DimensionalAnalysis and Its Applications

Lesson 5: Motion in a Straight Line (Time allocation: 09 hours)

- Position
- Distance and Displacement
- Speed, Velocity and Acceleration
- Average and Instantaneous Quantities
- Elementary Concepts of Differentiation And Integration
- Relative Motion
- Position – Time Graph
- Velocity - Time Graph
- Uniform and Non-Uniform Motions
- Uniformly Accelerated Motion
    - Equations of Motion
    - Applications Including Motion Under Gravity

Lesson 6: Motion in a Plane(Time allocation: 09 hours)

- Introduction of Scalars and Vectors
- Types of Vectors
- Multiplication of Vectors By Real Numbers
- Addition and Subtraction of Vectors – Graphical Method
- Vector Addition – Analytical Method
- Resolution of Vectors

- Motion in a Plane
- Motion in a Plane With Constant Acceleration
- Projectile Motion
- Uniform Circular Motion
- Relative Velocity in Two Dimensions

Lesson 7: Laws of Motion(Time allocation: 09 hours)

- Concept of Force and Inertia
- First Law of Motion
- Concept of Linear Momentum
- Second Law of Motion
- Impulse
- Conservation of Linear Momentum and its Applications
- Third Law of Motion
- Elementary idea of Fundamental Forces and Contact forces in Daily Life.
- Friction
    - Static and Kinetic
    - Factors Affecting Friction
    - General Idea About Rolling Friction

- Free Body Diagram Technique
- Equilibrium of Concurrent Forces
- Elementary Idea of Frame of Reference
- Inertial and Non-Inertial Frames

Lesson 8: Work, Energy and Power (Time allocation: 09 hours)

- Introduction
- Notions of Work and Kinetic Energy
- Work Done By Constant and Variable Forces

- The Work-Energy Theorem
- Conservative and Non-Conservative Forces
- The Concept of Potential Energy
- The Potential Energy of A Spring
- The Conservation of Mechanical Energy
- Various Forms of Energy
- The Law of Conservation of Energy
- Power
- Collisions (Elastic and Non-Elastic Collisions, One Dimensional Elastic Collision)

Lesson 9: Gravitation **(Time allocation: 09 hours)**

- Introduction
- Kepler's Laws
- Universal Law of Gravitation
- Acceleration Due To Gravity of The Earth
- Variation of Acceleration Due To Gravity With Height and Depth
- Gravitational Potential Energy
- Escape Speed
- Earth Satellite
- Energy of an Orbiting Satellite
- Elementary Idea About Geostationary and Polar Satellites

Lesson 10: System of Particles and Rotational Motion

(Time allocation: 09 hours)

- Rigid Body and Its Motion
- Centre of Mass
- Torque and Couple
- Moment of Inertia, Radius of Gyration and Its Significance
- Parallel and Perpendicular Axes Theorems and Their Uses in Simple Cases

- Equilibrium of a Rotating Body
- Equations of Motion for a Uniformly Rotating Rigid Body
- Angular Momentum and Law of Conservation of Angular Momentum with Simple Applications
- Rotational Kinetic Energy
- Qualitative idea about Rolling Motion

MODULE III: MECHANICAL PROPERTIES OF MATTER

Time: 24hrs. **Marks: 06**

Lesson 11: Elastic Properties of Solids

(Time allocation: 08 hours)

- Elastic Behavior and Hooke's Law
- Stress – Strain Curve
- Young's Modulus, Bulk Modulus, Modulus of Rigidity and Compressibility
- Elastic Potential Energy
- Some Applications of Elastic Behavior of Solids like Cantilever, Girder etc.

Lesson 12: Mechanical Properties of Fluids

(Time allocation: 08 hours)

- Introduction
- Pressure and Pascal's Law
- Surface Tension
- Viscosity
- Streamline and Turbulent Flow
- Equation of Continuity
- Bernoulli's Principle and Its Applications

Lesson 13: Thermal Properties of Matter and Kinetic Theory

(Time allocation: 08 hours)

- Introduction
- Heat and Temperature

- Ideal-Gas Equation and Absolute Temperature
- Thermal Expansion
- Specific Heat Capacity
- Calorimetry
- Change of State
- Modes of Heat Transfer

MODULE IV: HEAT AND THERMODYNAMICS

Time: 18 hrs. **Marks: 05**

Lesson 14: Thermodynamics **(Time allocation: 09 hours)**

- Thermal Equilibrium - Zeroth Law of Thermo Dynamics and Concept of Temperature
- Thermodynamic Variables and Thermodynamic Equilibrium
- Thermodynamic Processes: Isothermal, Adiabatic
- Reversible, Irreversible and Cyclic Process
- Heat, Work and Internal Energy: First Law of Thermodynamics
- Derivation of Expression For Work Done in Isothermal and Adiabatic Processes
- Phase Change, Latent Heat and Triple Point
- Statements of Second Law of Thermodynamics

Lesson 15: Heat Transfer and Solar Energy

(Time allocation: 09 hours)

- Modes of Transfer of Heat – Conduction, Convection and Radiation
- Black Body Radiation: Kirchhoff's Law
- Absorptive and Emissive Powers
- Wein's Displacement Law
- Stefan's Law
- Solar Energy
- Solar Constant
- Green House Effect
- Newton's Law of Cooling

MODULE V: OSCILLATION AND WAVES

Time: 18 hrs. **Marks: 05**

Lesson 16: Simple Harmonic Motion

(Time allocation: 09 hours)

- Periodic Motion – Amplitude
- Period, Frequency and Phase
- Reference Circle and Equation of SHM
- Displacement as a Function of Time - Periodic Function
- Examples of Spring Mass System and Simple Pendulum
- Energy in SHM – Kinetic and Potential
- Damped Oscillations
- Forced Oscillations and Resonance

Lesson 17: Wave Phenomena **(Time allocation: 09 hours)**

- Introduction
- Transverse and Longitudinal Waves
- The Speed of A Wave
    - Transverse
    - Longitudinal
- Terminology
- Displacement Relation in a Progressive Wave
- The Principle of Superposition of Waves
- Reflection of Waves
- Beats
- Doppler Effect

MODULE VI: ELECTRICITY AND MAGNETISM

Time: 40hrs. **Marks: 15**

Lesson 18: Electric Charge and Electric Field **(Time allocation: 08 hours)**

- Introduction Electric Charge
- Conductors and Insulators
- Charging by Induction
- Basic Properties of Electric Charge
- Coulomb's Law
- Forces Between Multiple Charges
- Electric Field
- Electric Field Lines
- Electric Dipole
- Dipole in a Uniform External Field
- Continuous Charge Distribution
    - Linear Charge Distribution
    - Surface Charge Distribution
- Electric Flux
- Gauss's Law and Its Applications
    - Infinite Line of Charge
    - Infinite Sheet of Charge
    - Conducting Sphere

Lesson 19: Electric Potential and Capacitors

(Time allocation: 08 hours)

- Electric Potential Due to a Point Charge
- Electric Potential at a Point Due to a Dipole (Axial and Equatorial)
- Electric Potential Energy of a System of Point Charges
- Relation between Electric Field and Potential – Equipotent Surface
- Conductors and Electric Field Inside a Conductor
- Electrostatic Shielding

- Capacitors and Capacitance of a Parallel Plate Capacitor
- Capacitors in Series and Parallel Combinations
- Energy Stored in a Capacitor
- Dielectrics and Their Polarization
- Effects of Dielectrics on Capacitance

Lesson 20: Electric Current **(Time allocation: 08 hours)**

- Introduction Electric Current
- Electric Currents in Conductors
- Ohm's law
- Drift of Electrons and the Origin of Resistivity
- Limitations of Ohm's Law in Relation to V-I Graph For Conductors
- Resistivity of Various Materials
- Temperature Dependence of Resistivity
- Electrical Energy, Power
- Combination of Resistors — Series and Parallel
- Cells, emf, Internal Resistance
- Cells in Series and in Parallel
- Kirchhoff's Rules
- Wheatstone Bridge
- Meter Bridge
- Potentiometer

Lesson 21: Magnetism and Magnetic Effect of Electric Current

(Time allocation: 08hours)

- Introduction
- Magnetic Force
- Motion in a Magnetic Field
- Motion in Combined Electric and Magnetic Fields
- Biot-Savart Law - Magnetic Field due to a Current Element
- Magnetic Field on the Axis of a Circular Current Loop

- Ampere's Circuital Law & Its Application to a
    - Long Straight Wire
- The Solenoid and the Toroid
- Force Between Two Parallel Current Carrying Conductors
- Current Loop as a Magnetic Dipole
- Torque on Current Loop
- The Moving Coil Galvanometer & Its Principle

Lesson 22: Electromagnetic Induction and Alternating Current

(Time allocation: 08hours)

- Magnetic Flux
- Faraday's Experiments
- Faraday's Law of Electro – Magnetic Induction
- Lenz's Law
- Eddy Currents
- Self and Mutual Induction
- Alternating Current and Voltage Illustrating With Phasor Diagram – Peak and rms Values
- Circuits Containing only R, L or C Separately – Phase Relationship between I & V
- LCR Series Combination (Using Phaser Diagram only) and Resonance
- Generators – AC

MODULE VII: OPTICS AND OPTICAL INSTRUEMENTS

Time: 32hrs. **Marks: 10**

Lesson 23: Refraction of Light **(Time allocation: 08hours)**

- Introduction to Ray Optics
- Refraction of Light Through Glass Slab
    - Lateral Displacement
    - Shift in Image Position

- Total Internal Reflection (TIR) and Its Applications in Fibre Optics
- Refraction Through Single Curved Surface and Its Applications
- Lens Maker's Formula and Magnification
- Thin Lens Formula
- Power of a Lens
- Combination of Lenses

Lesson 24: Ray Optics and Optical Instruments

(Time allocation: 08 hours)

- Simple and Compound Microscopes and Their Magnifying Power
- Telescopes – Reflecting and Refracting
- Resolving Power and Rayleigh's Criterion
- Applications in Astronomy

Lesson25: Dispersion and Scattering of Light (Time allocation: 08 hours)

- Dispersion of Light
- Angle of Deviation
- Rainbow and Its Formation
- Defects of Image Formation–Spherical and Chromatic Aberration
- Scattering of Light in Atmosphere
- Elementary Idea of Raman Effect.

Lesson26: Wave Optics (Time allocation: 08 hours)

- Huygen's Wave Theory and Wave Propagation
- Interference–Young's double Slit Experiment
- Diffraction of Light at a Single Slit
- Polarization-Brewster's Law and its Application in Daily Life

MODULE VIII: ATOMS AND NUCLIE

Time: 21hrs. Marks: 07

Lesson27: Dual Nature of Radiation and Matter

(Time allocation: 07 hours)

- Work Function and Emission of Electrons

- Photoelectric Effect and its Explanation
- Matter Waves
- Davisson and Germer Experiment

Lesson 28: Atoms **(Time allocation: 07 hours)**

- Introduction
- Alpha-particle Scattering and Rutherford's Nuclear Model of Atom
- Atomic Spectra
- Bohr Model of the Hydrogen Atom
- De Broglie's Explanation of Bohr's Second Postulate of Quantisation
- The Line Spectra of the Hydrogen Atom

Lesson 29: Nuclei **(Time allocation: 07 hours)**

- Introduction
- Atomic Masses and Composition of Nucleus
- Size of the Nucleus
- Mass-Energy and Nuclear Binding Energy
- Nuclear Force
- Radioactivity
- Nuclear Reactions as Sources of Energy
    - Nuclear Fission
    - Nuclear Fusion
- Nuclear Fission & Chain Reaction
- Misuses of Nuclear Energy - Atom Bomb and Hydrogen Bomb
- Peaceful uses of Nuclear Energy in India
- Hazards of Nuclear Radiation and Safety measures

MODULE IX: SEMICONDUCTORS AND THEIR APPLICATIONS

Time: 09hrs. **Marks: 03**

Lesson 30: Semiconductors and Semi-conductor Devices

(Time allocation: 09 hours)

- Energy Bands in Solids
- Intrinsic and Extrinsic Semiconductors
- p-n Junction - its Formation and Properties
- Biasing of p-n Junction Diode
- Types of Diodes-Zanier Diode, LED, Photo Diode and Solar Cell
- Characteristics of Zanier Diode, LED, Photo Diode and Solar Cell
- pn - junction Diode as a Rectifier
- Zener Diode as a Voltage Regulator

POLITICAL SCIENCE

RATIONALE

Political science is one of the branches of the social sciences that focus on governmental, political, and state affairs. In the words of Greek philosopher ***Aristotle***, "Political Science is the study of the state". It is a multidisciplinary field that has connections with many other disciplines, including sociology, economics, history, anthropology, and public policy.

The traditional meaning of Political Science begins and ends with the state. Therefore, it is the study of the state and government. The modern view of Political Science lays emphasis on it being the study of power and authority. Its scope includes study of the state and the study of political system; covering the study of government, study of power; study of human beings and their political behaviour and study of political issues that influence politics directly or indirectly.

The study of Political Science is very useful and valuable. The primary aim of studying political science at Sr. Secondar Stage is to inculcate knowledge of the state, its origin, nature, structure and the functions. Apart from the utilitarian considerations, it is also important to have the knowledge of what is happening in the world around us.

The principles of liberty, equality fraternity, government, domestic and foreign policies of the nation are studies in political science. Keeping in mind its value and the importance, Aristotle regarded political science as "the master of all sciences."

CURRICULUMOBJECTIVES

The aim of this curriculum is to enable learners to:

- Appreciate the importance of Political Science and its study at school stage
- Get an insight into the knowledge and wisdom in this subject
- Trace the origin and evolution of Political Science
- Get an insight into the political theories both in Indian and Western context as well asthe different forms of government in the world
- Recall Indian and western political thinkers as well as their contribution
- Appreciate that *Bharatiya* thinkers like *Chanakya* contributed immensely to the field
- Get an insight into the Constitution and political system of India
- Critically examine the political issues and challenges in present day India
- Appreciate the strong position that India has acquired in the present world order

COURSE STRUCTURE

The current curriculum comprises of VII Modules and 23 lessons. The study hours and weight age allotted are as follows.

Name of the Modules	**No of Lessons**	**Study Hours**	**Weightage allotted for modules**
Module 1	4	44	14
Module 2	3	32	12
Module 3	5	53	16
Module 4	2	20	06
Module 5	2	20	06
Module 6	4	40	16
Module 7	3	31	10
Assignment			20
Total	**23**	**240**	**100**

MODULE I: IDEA OF POLITICAL SCIENCE

Time: 44 hrs **Marks: 12**

Lesson 1: Values, Wisdom and Knowledge: The Ultimate Aim of Education

(Time allocation: 11 hours)

- Universal and Eternal values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge& Wisdom in Ancient Bharat
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson2: Knowledge and Wisdom in Political Science (Time allocation: 11hours)

- Definitions, Nature And Scope Of Political Science
- Politics And Political Theory
- Interconnection With Other Social Science

Lesson3: Origin and Evolution of Political Thought – I (Time allocation: 11 hours)

- Origin Of Political Thought In Ancient Bharat
- Origin Of Western Political Thought In Ancient Greece
- Forms Of Government

Lesson 4: Origin and Evolution of Political Thought-II

(Time allocation: 11hours)

- **Political Philosophy: Definition**
  - Major Concepts in The Study of Political Thought
  - Modern Indian Political Thinkers
  - Modern Western Political Thinkers

MODULE II: CONSTITUTION OF INDIA

Time: 32 hrs **Marks: 14**

Lesson 5: Constitution of India (Time allocation: 11hours)

- Framing Of The Indian Constitution
- Constituent Assembly
- Drafting Committee
- Key Words Of The Preamble And Their Significance
- Sovereign
- Socialistic
- Secular
- Democratic
- Republic
- Justice - Social, Economic And Political
- Liberty Of Thought, Expression, Belief, Faith And Worship
- Fraternity
- Dignity of The Individual
- Unity And Integrity Of The Nation
- Harmonious Gender Relationships (Combating Discrimination, Violence and Crime Against Women)
- Salient Features of The Constitution
- Universal adult franchise
- Lengthy but amendable
- Federal and Unitary Features
- Parliamentary Form of Government
- Division of Powers
- Fundamental Rights And Duties
- Directive Principles: Towards A People's Welfare State
- Protective Discrimination

Lesson 6: Indian Federal System (Time allocation: 11hours)

- Introduction and Meaning of Federal System
- Federal features of Indian Polity- Quasi Federal
- Sikkim as a part of India
- Uniqueness of Sikkim's Political Culture

Lesson 7: India as a Welfare State (Time allocation: 10 hours)

- Concept of Welfare State.
- Concept of Welfare State as Ram Rajya.
- Ashoka's Concept of Welfare State.
- Western Concept of a Welfare State.
- Features of a Welfare State.
- Contemporary Govt Welfare Schemes in India.
- Fundamental Rights
- Fundamental Duties: Need And Importance
- Relationship between Fundamental Rights and Fundamental Duties.
- Directive Principles of State Policy
- Relationship Between Directive Principles And Fundamental Rights
- Fundamental Rights and Directive Principles Are Complementary To Each Other

MODULE III: GOVERNANCE- UNION AND STATE

Time: 53 hrs **Marks: 16**

Lesson 8: Nation and theState (Time allocation: 11 hours)

- Basic Concepts of Nation and State
- Evolution of India as A Nation-State
- Concept of Rashtra Given By Chanakya
- Government

Lesson 9: The Executive **(Time allocation: 10 hours)**

- The President
- Prime Minister And The Council Of Minister
- State Executive

Lesson 10: The Legislature **(Time allocation: 11 hours)**

- Composition Of Parliament
- Powers And Functions Of Parliament
- Committees
- The Opposition
- Special Powers Of Rajya Sabha
- How Does The Parliament Make Laws?
- The State Legislature

Lesson 11: The Judiciary(Time allocation: 10hours)

- Structure Of Judiciary
- Judicial Review
- High Court And The Subordinate Courts

Lesson 12:Local Self Government(Time allocation: 11 hours)

- Panchayati Raj In Post-Independence India (1950s-1992)
- Panchayati Raj Institutions
- Local Governance In Sikkim
- Local Governance In Sikkim

MODULE IV: DEMOCRACY AT WORK

Time:20 hrs **Marks: 06**

Lesson 13: Democracy in India **(Time allocation: 10 hours)**

- Constitutional Design
- What Is A Constitution?
- Preamble
- Democracy
- Democratic Value

- Direct And Indirect Democracy
- Democratic Traditions In Ancient India – Sabhas&Samitis,Monasticism
- Democratic Traditions In Modern India – ParliamentaryDemocracy
- Features Of Indian Democracy

Lesson 14: Electoral Process of India (Time allocation: 10 hours)

- Universaladult Franchise
- Nomination and Proportional Representation
- Party System: Types of Party System – Multiple Party System in India
- Pressure Groups and Interest groups
- Public Opinion
- Political Parties
- Role & Functions of Election Commission
- Electoral Reform

MODULE: V: THE ADMINISTRATIVE SYSTEM IN INDIA

Time: 20hrs **Marks: 06**

Lesson 15: Bureaucracy and Politics in India

(Time allocation: 10 hours)

- Role Of Bureaucracy In Governance
- Difference Between Political Executive And Permanent
    - Executive

Lesson 16: Grievance Redressal Machinery

(Time allocation: 10 hours)

- Public Grievances and Accountability
- Types Of Public Grievances
- Grievance Redressal Mechanism
- Pmo Grievance Portal
- The Sevottam Model
- Grievance Redressal: A Road To Good Governance

MODULE VI: CONTEMPORARY POLITICAL ISSUES

Time: 40hrs **Marks: 18**

Lesson 17: Challenges of Indian Polity and Nation Building

(Time allocation: 10 hours)

- National Unity And Integrity
- Secularism Vs Pseudo Secularism
- Development And Infrastructure
- Poverty, Unemployment
- Corruption
- Lack Of National Character And Patriotic Feelings
- Gender Issues
- Health Care
- Terrorism

Lesson 18: Socio-Economic Development **(Time allocation: 10 hours)**

- India As An Emerging Economic Power
- Sectors Of The Indian Economy
- Socio- Economic Development
- Empowerment Of Disadvantaged Groups
- Privatisation, Liberalisation And Globalisation
- Recent Economic Reforms

Lesson 19: Empowerment of Marginalized Groups **(Time allocation: 10hours)**

- Concept And Definitions
- Nature And Type Of Marginalization
- Marginalized Groups In India
- Positive Discrimination And Reservation Policy In India

Lesson 20: Environment Issues in India **(Time allocation: 10hours)**

- Natural Resource Management
- Deforestation; Soil Erosion
- Sustainable Development& SDGs
- Climate Change and COP
- (Conference of Parties)
- Disaster Management
- Swacch Bharat

MODULE VII: INDIA AND THE WORLD ORDER

Time: 31 hrs **Marks: 08**

Lesson 21: United Nations **(Time allocation: 10hours)**

- Origins Of The United Nations
- Principal Organs: Composition And Functions
- Fight Against Colonialism And Racism
- Promotion Of Human Rights
- Need For Re-Structuring The United Nation
- United Nations' Peace Activities
- Network Of UN Development Agencies
- Sustainable Development Goals

Lesson 22: Contemporary World Order **(Time allocation: 10 hours)**

- World Order
- World Order During Cold War
- World Order After Cold War
- New World Order
- The Decline Of Us Hegemony
- Usa – China Power Struggle And Indiaand India
- India: A Power Centre In The Contemporary World Order

- Road To Be A Global Power

Lesson 23:Foreign Relations of India **(Time allocation: 11 hours)**

- Determinants Of India's Foreign Policy
- History, Culture And Traditions
- Objectives Of India's Foreign Policy
- Principles Of India's Foreign Policy
- Indo-Us Relations
- Indo- Russia Relations
- India And China
- India's Relations With Its Neighbours: Conflict And
- Cooperation

PSYCHOLOGY

RATIONALE

Psychology is the science of human behavior and mind. Aspects of human life (behavior, cognition, and experiences, etc.) are thus subject matter of psychology. The content of the book is aimed to not only grow students' understanding of psychology, but also to inculcate the application of psychological knowledge in all possible aspects of life. To achieve the aims the content of this book centers on themes such as The Idea of Psychology, Developmental Psychology, Psychology and Environment, Psychology of Health and Well-being, Personality, Social Psychology, and, Psychological Enquiry and Research. Each theme covers a wide area of the respective topic. For instance, the theme Idea of Psychology covers aspects like value, wisdom or knowledge, history of psychology, and Indian psychology. Development Psychology highlights the life-span development related to different aspects while Psychology and Environment emphasizes on the bi-directional relationship of human behavior and environment. To add, Psychology of Health and Well-being centers on the current reflection of human health and well-being. Alongside these, the Personality aspect of humans and Social Psychology, dealing with human behaviour related to others, were also highlights of this book. Finally, Psychological Enquiry and Research covers the essential aspects of research in psychology. In a nutshell, this textbook not only enhances the theoretical orientation of the students for psychology, but also effort was made to acquaint the students with practical application of psychological knowledge.

CURRICULUM OBJECTIVES

The overall curriculum aims of the Psychology are to develop in learners:

- Knowledge on theoretical, and practical implication of psychology.
- Significance of psychology in course of life development.
- Awareness on relationship between health and environment.
- Insight on psychology in relation to social perspective.
- Research concept and significance in social sciences.

COURSE STRUCTURE

The current curriculum comprises of 6 Modules and 33 lessons. The study hours and marks allotted are as follows:

Module	**No. of Lessons**	**Study Hours**	**Marks allotted**
Module 1	5	40	14
Module 2	8	56	20
Module 3	7	53	14
Module 4	4	28	10
Module 5	5	35	12
Module 6	4	28	10
(Assignment/Practical/Project Work) *			20
Total	**33**	**240**	**100**

MODULE I: IDEA OF PSYCHOLOGY

Time: 40 hrs. **Marks: 14**

Lesson 1: Values, Wisdom and Knowledge: The Ultimate Aim of Education

(Time Allocation: 08 hours)

- Universal and Eternal values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge& Wisdom in Ancient *Bharat*
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson 2: Knowledge and Wisdom in Psychology (TimeAllocation: 08 hours)

- Psychology: An Introduction
- Psychology as a Social Science
- Functions of the Mind – Thinking, Feeling, Willing
- Psychology as an Art of Living and Science of Being
- Importance of Psychological Wisdom in our Lives
- Major Branches of Psychology: Developmental Psychology, Cognitive Psychology, Personality Psychology**,** Social Psychology, Clinical Psychology, Abnormal Psychology, Biopsychology, Neuropsychology, Indian Psychology, Parapsychology
- Major Schools of Psychology: Structuralism, Functionalism, Cognitivism, Humanism, Gestalt Psychology, Psychoanalysis, Behaviourism, Positive Psychology
- Psychology and Allied fields of Knowledge – Philosophy, Sociology, Political Science, Anthropology, Neuroscience, Health Sciences, Psychiatry
- Scope of Psychology
- Psychological Method

Lesson 3: Origin and Evolution of Psychology and Psychological Thought

(TimeAllocation: 08 hours)

- Evolution of the Meaning of Psychology in *Vedic* & *Non–Vedic* Tradition; Psychology in Buddhism, *Abhidhammic* Psychology
- Eminent Indian Psychologists – *Patanjali*, *Budhaghosa*, *Sudhir Kakkar*, *Narendra Nath Sengupta*, *Radhakamal Mukherjee*, *V.S. Ramachandran*

- Eminent Western Psychologists: *Wilhelm Wundt*, *Sigmund Freud*, *Carl Jung*, *Anna Freud*, *Pavlov*, *Carl Rogers*, *Erik Erikson*, *William James*, *Jean Piaget*, *Lev Vygotsy*, *B.F. Skinner*, *Abraham Maslow*, *Elizabeth F. Loftus*, *Anne Treisman*, *Eleanor J. Gibson*, *Uta Frith*, *Martin Seligman*
- Contemporary Developments in Psychology and Psychological Thought

Lesson 4: Indian Psychology (Time Allocation: 08 hours)

- Psychological Knowledge, its Manifestations and Wisdom in Ancient India – Psychology and Philosophy, Psychology and Spirituality, Psychology and Morality, Psychology and the *Bhagavad Gita*, Psychology and *Yoga*, Psychology and the *Panch Kosha* Theory
- Psychology, Inwardness and *Sadhana*
- Types of Ancient Indian *Vedic* and *Non-Vedic Sadhna*
- Psychology and *Darshan*
- Psychology and the Concept of *Purushartha* and three *Gunas*
- Psychology and *Dharma*

Lesson 5: Psychological Methods and Research (Time Allocation: 08 hours)

- Concept of Enquiry and Research
- Aims of Psychological Research
- Research Process
- Reliability and Validity
- Methods of Psychological Research
- Analysis of Data
- Ethical Issues in Psychological Research

MODULE II: DEVELOPMENTAL PSYCHOLOGY

Time: 56 hrs. **Marks: 14**

Lesson 6: Human Growth and Development (Time allocation: 07 hours)

- Concept of Growth and Development
- Characteristics of Growth and Development
- Classification of Growth and Development
- Principles of Development
- Factors Affecting Human Growth and Development

- Nature vs. Nurture

Lesson 7: Biological Perspective in Psychology (Time Allocation: 07 hours)

- Behaviour and the Biological Basis
- Development of the Brain
- Neuron
- Nerve Impulse
- Nervous System
- Endocrine System

Lesson 8: Understanding Human Life Span (Time allocation: 07 hours)

- Concept of Human Development
- Indian Theory of Human Life Span: Four *Ashramas* and beyond
- 16 *Sanskaras* in Indian Philosophy and its Relationto the Developmental Process
- Theories of Development
- Stages of Human Life Span
- Growth and Development during Life-Span

Lesson 9: Growth and Development from Prenatal to Childhood

(Time Allocation: 07 hours)

- Child Development: An Individual Process
- Growth Process during Childhood
- Stages of Child Development
- Aspects of Child Development
- Factors Affecting Child Development
- Acing the Childhood

Lesson 10: Growth and Development during Adolescence

(Time allocation: 07 hours)

- Characteristics of Adolescence
- Concept of I
- Influences on Identity

- Challenges during the stage
- Rites to Adolescence
- Acing the Adolescence

Lesson 11: Growth and Development from Adulthood to Old Age

(Time allocation: 07 hours)

- Adulthood & Old Age: An Introduction to the Stage
- Stages of Adulthood and Old Age
- Development during Adult Years
- Developmental Tasks during Adulthood and Old Age
- Physical Changes during Adulthood and Old Age
- Psychosocial Changes during Adulthood and Old Age
- The Family Life Cycle
- Challenges and Issues in Aging Process
- Acing the Adulthood and Old Age

Lesson 12: Socio-Emotional Development **(Time Allocation: 07 hours)**

- Basic Emotions – Love and Fear
- Concept of Socio – Emotional Development
- Factors affecting Socio-Emotional Development
- Socialisation – Role of Family and School
- Role of Emotions in relationships
- Behaviour arising out of the Emotion of Fear – Selfishness and Self-Centeredness; Aggression, Prejudice and Discriminatory Behavior; Negative Effects of Social Rejection and Loneliness
- Behaviour Arising out of Love - Need for Affiliation, Love and Belongingness (Maslow)
- Types of Relationships: Communal Relationship, Exchange Relationship, Romantic Relationship
- Helpful Behaviour - Pro-social, Altruistic and Egotistical Behaviour; Selfless Action - Concept of *NishkamaKarma* and *KarmaYoga* in the *Gita*
- Love - Meaning, Types, Theories of Sorokin, Erich Fromm and Robert Sternberg, Concept of Love in Indian Philosophy

- Love and Happiness; Forgiveness, Gratitude and Resilience
- Love for one's Nation; Action arising out of Nationalistic/Patriotic Feelings
- Love and Religion; *BhaktiYoga* in the *Gita*

Lesson 13: Moral and Spiritual Development (Time Allocation: 07 hours)

- Ethics, Values and Morality
- Virtues and Vices in the Indian context
- Concept of Moral Development
- Theories of Moral Development
- Factors affecting Moral Development
- Role of Family and School
- Value Education
- Concept of Spiritual Development
- Science, Religion and Spirituality

MODULE III: PSYCHOLOGY AND THE ENVIRONMENT

Time: 53 hrs. **Marks: 14**

Lesson 14: Environment (Time Allocation: 7.30 hours)

- Environment – Concept and Importance
- Natural Environment – Living in Harmony with Nature, Sustainable Development
- Social Environment – Learning to Live in Harmony with Other Human Beings
- Inner Environment – Inner Peace, Learning to Be, Learning to Live in Harmony with Oneself

Lesson 15: Mental Processes for Understanding with respect to the Environment

(Time Allocation: 7.30 hours)

- Functions of the Mind - Thinking, Feeling and Willing
- Sensation (with details on Sensory organs), Perception, Intuition, Attention, Visualization
- Memory
- Problem Solving and Decision Making

- Expression of Ideas, Thoughts and Feelings – Non-Verbal and Verbal Languages
- Attitudes and Beliefs

Lesson 16: Intelligence (Time Allocation: 7.30 hours)

- Nature of Intelligence and Ability
- Aptitude and Attitude
- Multiple Intelligences
- Different kind of Abilities –Intellectual Intelligence (as measured by Intelligence Quotient), Emotional Intelligence, Social Intelligence, Spiritual Intelligence, Intuitive Intelligence
- Relationship Between Intelligence, Ability, and Achievement/Performance
- Intelligence, Knowledge and Wisdom
- Assessment of Intelligence
- Artificial Intelligence

Lesson 17: Perspectives on Intelligence (Time Allocation: 7.30 hours)

- Single Factor Theory
- Two Factor Theory
- Multi Factor Theory
- Multiple Intelligences Theory

Lesson 18: Learning (Time Allocation: 7.30 hours)

- Concept of Learning – Meaning, Nature and Importance
- Factors Affecting Learning – Needs, Interests, Abilities, Motivation, Inspiration
- Lifelong Learning and Learning to Learn
- Informal, Non-Formal and Formal Learning
- Relationship of Learning with Knowledge and Wisdom
- Learning in Indian Thought
- Indian Epistemology; Upanishadic Method of Learning; Samkhya-Yoga in Bhagwad Gita, the Buddhist concept of Learning,
- Learning and Performance

Lesson 19: Perspectives on Learning **(Time allocation: 7.30 hours)**

- Behavioristic Theories of Learning
- Cognitive Theories of Learning
- Gestalt Approach to Learning
- Humanistic Approach to Learning
- Experiential Learning and Learning by Doing

Lesson 20: Differently Abled or Special Children **(Time Allocation: 08 hours)**

- Learning Disabilities (LDs) – Definition
- Types of LDs – Dyslexia, Dyscalculia, Dysgraphia, Non-verbal LDs, Oral/Written Language Disorder, Specific Reading Comprehension Deficit
- Related Disorders – ADHD, Dyspraxia, Executive Functioning Disorder
- Other Handicaps that Affect Learning – Visual, Hearing and Motor handicap (*Divyangas*); Intellectual Disability, Environmental, Cultural or Economic Disadvantage

MODULE IV: PSYCHOLOGY OF HEALTH AND WELL BEING

Time: 28 hrs. **Marks: 10**

Lesson 21: Yoga for Health and Well Being **(Time allocation: 07 hours)**

- Introduction – Meaning and the types of *Yoga*
- The Philosophy of *Yoga* in the *Bhagavad Gita*
- *Patanjali's* Philosophy of *Yoga*
- Philosophy of *Panch Kosha*
- *Yoga* and *Ayurveda*
- *Ashtang Yoga* and Other Practices
- *Hatha Yoga* and Fitness

Lesson 22: Meditation for Health and Well Being **(Time allocation: 07 hours)**

- Meditation for Well Being
- Meditation and its types
- *Yoga* and Meditation
- Meditation in Buddhism
- Stress Management through *Yoga*& Meditation

- Yoga & Meditation for enhancement of Memory, Other Mental Powers and Ability
- Meditation and Spiritual Health

Lesson 23: Ramifications of Mental Health (Time Allocation: 08 hours)

- Mental Health – Concept and Importance
- Intellectual Health
- Emotional Health
- Social Health
- Moral Health
- Spiritual Health

Lesson 24: Positive Psychology and Well Being

(Time allocation: 07 hours)

- What is 'Positive Psychology – Definition/Meaning, Goals
- Brief History – Origin, Martin Seligman and his theory of "Learned", Further Developments, Other associated Psychologists
- Theory and Concepts of Positive Psychology
- PERMA Model
- Concepts of 'Flow' and 'Flourishing'
- Positive Psychology in Application and Practice

MODULE V: PERSONALITY

Time: 35 hrs. **Marks: 12**

Lesson 25: Personality – An Introduction

(Time Allocation: 07 hours)

- What is Personality; Nature of Personality; Types of Personality
- Vedic and Buddhist Perspective of Personality
- Issues in Personality – Nature vs Nurture; Heredity vsEnvironment; Stability and Change; Connections with Health and Work; Self-concept; Influence of Cultural Perspectives
- Personality Assessment Techniques – Projective and Objective

Lesson 26: Perspectives on Personality (Time Allocation: 07 hours)

- Psychodynamic Theories
- Trait Theories
- Humanistic Theories
- Social-cognitive Theories

Lesson 27: Abnormal Behaviour (Time Allocation: 07 hours)

- Concept of Abnormality
- Difference Between Normal and Abnormal Behaviour
- Characteristics of Abnormal Behaviour
- Neurotic and Psychotic Behaviour
- Assessment of Psychological Traits
- Seeking Help for Psychological Problems

Lesson 28: Psychotherapy (Time allocation: 07 hours)

- Psychotherapy – Definition/Meaning
- Types of Psychotherapy – Individual, Couple, Family, Group
- Approaches to Psychotherapy – Behavioral, Cognitive, Cognitive Behavioral, Humanistic, Psychoanalytic
- Common Mental Health conditions treated by Psychotherapy – Addiction, Anxiety Disorders, Bipolar Disorder, Depression, Eating Disorders, Obsessive-Compulsive Disorder, Phobias, Post-traumatic Stress Disorder, Substance Use Disorder, Chronic Pain or Serious Illnesses, Divorce and Break-ups, Grief or Loss, Insomnia, Low Self-esteem, Relationship Problems, Stress and Stress Management

Lesson 29: Guidance and Counseling (Time Allocation: 07 hours)

- Guidance – Meaning, Need, Purpose, Importance, Aims and Objectives, Scope and Principles, Types
- Counseling – Meaning; Purpose, Principles, Types, Major Approaches, Process
- Difference between Guidance and Counseling
- Role and Function of Counselors

MODULE VI: SOCIAL PSYCHOLOGY

Time: 28 hrs. **Marks: 10**

Lesson 30: The Self **(Time Allocation: 07 hours)**

- Self- Concept, Self-Schemas, Self-Perception Theory
- How Others Affect Our Sense of Self - The Looking Glass Self, Reflected Appraisals, Social Comparison Theory
- Self and Culture
- Self Esteem – Need – Maslow's Hierarchy of Needs, Types of Self Esteem, Self Esteem across the Life Span, Gender and Cross-Cultural Differences in Self Esteem
- Self-Efficacy, Self-Regulation, Self-Awareness, Self Enhancement
- Self-Presentation – Self Promotion, Self-Verification, Self-Monitoring, False Modesty
- Cognitive Biases and Heuristics used to bolster the self – Self Serving Bias, Overestimating our Opinions and Skills

Lesson 31: Perspective on Perceiving Other People **(Time Allocation: 07 hours)**

- Buddhist Perspective - The Man: Visible and Invisible
- Western Perspective:
    - Social Cognition and Social Perception
    - Types of Information we collect about others – Physical Cues, Salience, Facial Expressions, Personality Traits, Eye Contact, Moral Character, Non-verbal Communication
- Social Cognition and judgments made about others, Role of our Emotional State and Emotional Intelligence, Halo Effect, Pygmalion Effect

Lesson 32: Attitudes **(Time Allocation: 07 hours)**

- What is an Attitude
- Structure and Function – Tripartite Model of Attitudes
- How and why are Attitudes Important
- Impact of Attitude on Behaviour and vice versa
- Behaviour Prediction Models
- Persuasive Communication and Attitude Change
- Attitude Scales for Measurement

Lesson 33: Group Dynamics **(Time Allocation: 07 hours)**

- Concept and Meaning of Group Dynamics
- Features of Group Dynamics
- Types of Group Dynamics
- Principles of Group Dynamics
- How we influence and get influenced by others – Persuasion, Social Influence, Group Influence
- Group Dynamics and Leadership
- Leaders and types of Effective Leaderships

SOCIOLOGY

RATIONALE

Sociology as a discipline helps us understand our everyday lives better. A sociologicalapproach to the study of society helps us understand that our private issues are not private buta reflection of the society around us. The food that we eat, the clothes that we wear, thelanguage that we speak, the way that we walk and everything around us is a reflection of thelarger society around us. Our individual lives are a product of our social lives. Issues aroundcaste, gender, employment, environment all are a part of our day to day lives at one level. Atanother level they are not just personal issues but a reflection of the world around us. Whatwe consider to be personal and local is actually a part of the global. For instance, Russa'sattack on Ukraine in 2022, has had an impact on the price of bread in Africa, a place that isgeographically very far from both the countries. This has led to a change in dietary habits andalso, in buying and consumption patterns of families. The rise in price has also impacted theliving standards of people. As a student of sociology, you will understand the cause andeffect of this on your day to day lives. Sociologically you will understand the process ofsocial change. As sociologists we will understand the power of society in shaping us and ourrole in shaping society. It helps us understand the larger structures in society and our place inthem. It also helps us understand the ways in which the macro and micro structures interact.

CURRICULUM OBJECTIVES

The overall curriculum aims of the Sociology are to develop in students:

- The knowledge and thought of India for developing national pride;
- Personality development and social skills that will help in being part of the society.
- Connecting knowledge to life outside School.
- An understanding and explanation of how societies work and why they change.
- To foster better knowledge of various cultures.
- The ability to instill pride in our traditional culture and identity.
- Sensitivity towards societies and of human behaviours in social settings

COURSE STRUCTURE

Name of the Modules	No of Lessons	Study Hours	Marks allotted for modules
Module 1	5	60	20
Module 2	6	72	24
Module 3	7	84	28
Module 4	2	24	08
Assignment			20
Total	20	240	100

MODULE 1: IDEA OF SOCIOLOGY

Time: 60hrs **Marks: 20**

Lesson 1: **Values, Wisdom and Knowledge: The Ultimate Aim of Education**

(Time allocation: 12hours)

- Universal and Eternal values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge & Wisdom in Ancient Bharat
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson 2: Wisdom and Knowledge in Sociology **(Time allocation: 12 hours)**

- Concept of Knowledge and Wisdom
- The concept of Sociology? Its Nature and Scope, Branches
- Society and Individual – Social Order, Social Action, Social Work, Socialization, Culture and Identity
- Sociological Thinking – Advantages, e.g. encouraging participation in public life, developing critical thinking skills, Personal growth and for Advancement Career.
- Literature as a mirror of Society
- Sociology of Knowledge
- Relationship of Sociology with other Social Sciences - History, Political Science, Psychology, Economics, Geography, Social Anthropology
- Groups &Organizations; Various types of groups – Primary, Secondary, References groups, In & out Groups, Cyber groups
- Formal Organizations

Lesson 3: Origin and Evolution of Sociology and Sociological Thinking

(Time allocation: 12 hours)

- Idea of Society in Ancient India
- Beginning of Organization of Society/Social Organization
- 'Manu Smriti' as a Sociological Work
- Modern Concept of Sociology as a Discipline

- Industrial Revolution and the French Revolution
- Eminent Social Thinkers/Sociologists - Manu, Radha Kamal Mukherjee, Iravati Karve. Dr. B.R Ambedkar., M.N Srinivas, Shymaji Krishna Verma, Govind Sadashiv Ghurye, Savitri Bai Phule, Tarabhai Shinde, Rama Bai Ranade, Herbert Spencer, Auguste Comte, Emile Durkheim, Karl Marx, Max Weber
- Evolution of Sociological Method and Research

Lesson 4: Social Stratification **(Time allocation: 12 hours)**

- Understanding Social Stratification
- The Caste system, OBC, EWS
- The Class System
- Race
- Ethnicity
- Gender
- Social Mobility
- Rural, Urban, Tribal

Lesson 5: Social Change **(Time allocation:12 hours)**

- What is Social Change?
- Culture and Social Change
- Modernization –Decline of Small communities, increase in social diversities, Development of technology
- Urbanization – Growth of Cities, Urbanism as a way of Life.
- Globalization
- Sanskritisation in the Indian Context
- Migration - Types of Migration – Marriage Migration, Rural to Urban Migration, Urban to Rural Migration, Seasonal Migration, Emigration, Immigration, Internal migration, Illegal immigration

MODULE II: SOCIAL INSTITUTIONS

Time: 72hrs **Marks: 24**

Lesson 6: Family and Marriage **(Time allocation: 12 hrs)**

- Basic Concepts & Variations of Family across the world – Nuclear families, Joint Families , Extended Families , Single Parent Families .
- Role of the family –Socialization, Child Rearing
- In the Indian Context – Changing nature of the Family
- AM Shah, TN Madan
- Feminist –Approach to the Family – Inequality in the Family , Women Headed Families
- Live in Relationships
- Problems in family life – Divorce , Violence against Women and Children
- Understanding Marriage in the Ancient times mentioned in 'Manusmirti'.
- Types of marriage – Monogamy, Polygamy, Same Sex Marriages
- Rules Governing marriage in Caste and Tribes (Endogamy and exogamy and others as well)
- Tribal marriages, Illustrations from India to be Included.
- Marriage in Different Communities in India.

Lesson 7: Economy **(Time allocation: 12 hours)**

- Economy and Society – Importance of Economy for Society
- Status of Ancient India as the 'Golden Sparrow'
- Kinds of Economy - Traditional Economy, Free Market Economy, Planned Economy, Mixed Economy
- Formal and Informal Sectors of Economy
- Anthropological explanations of small Scale Economies and Gift Exchange
- Changes in the Economy – Agriculture, Industrial Revolution, Post Industrial revolution, Information Revolution, Gig economy
- Employment, Unemployment and Underemployment
- Liberalization, Privatization, Globalization – Advantages and Disadvantages
- Issues and Challenges in Indian Economy – Cheating in Taxes, Parallel Economy - Black Money, Malpractices in Trade and Business, Misutilisation of Nation's Funds

- Economic Reforms in India – Single Taxation System – GST; Demonetization; Digitalization, Make in India, Atma Nirbhar Bharat

Lesson 8: Polity **(Time allocation: 12 hours)**

- State and Stateless Societies
- Power and Authority – Rational, Legal, Traditional and Charismatic
- Power beyond Rules - revolutions, Traditional forms of authority etc.
- Power Elites
- Constitution of India – Preamble and Philosophy; Constitutional Values; National Goals - Democracy, Socialism, Secularism, National Unity and Integration, Welfare State
- Politics in India – Multiparty system
- Issues and Challenges in Indian Polity – Regionalism, Pseudo-secularism, Corruption in High Places, Vote Banks, Caste based voting, Bribes for votes, Misuse of Govt. Funds, Antinational activities

Lesson 9: Society and Culture **(Time allocation: 12 hours)**

- Concept of Culture
- Need and Importance of Culture in Society
- Real and Ideal Culture
- The elements of Culture – Symbols, Language, Values, Beliefs, Norms, Mores, Customs, Play/games art and music.
- Cultural diversity – Dimensions of Cultural, Multiculturalism, Ethnocentrism, Global Culture
- Bharatiya Culture – Unity in Diversity

Lesson 10: Society and Religion **(Time allocation: 12 hours)**

- Society and Religion
- Need and Importance of Religion in Society
- Religions around the World – Hinduism/Sanatan Dharma, Buddhism, Jainism, Sikhism, Confucianism, Judaism, Zoroastrianism, Christianity, Islam
- Religious Distribution across the World
- Spiritualism

- Sects & Cults

Lesson 11: Society and Values **(Time allocation: 12 hours)**

- Concept of Values, Ethics and Morality
- Need and Importance of Values in Society
- Humanitarian Values, Concept of Vasudeva Kutumbakam in Hinduism/Sanatan Dharma
- Moral Values
- Cultural Values
- Spiritual Values
- National Values
- Patriotism as a Value
- Inculcation of Values
- Need and Importance of Value Education
- Life Skills

MODULE III: CONTEMPORARY SOCIAL ISSUES

Time: 84hrs **Marks: 28**

Lesson 12: Gender Issues **(Time allocation: 12 hours)**

- Gender Equity, Equality, Empowerment
- Gender Norms
- Patriarchy and Gender
- Gender and Family
- Gender and Media
- Gender and Schooling
- Work and Gender – Household Economy, Impact of Industrialization, Trade Unionism and Women
- The Indian scenario – After 1947, 1970 s and 1980s beyond.
- Determinants of Health; Government policies on health
- Gender and Violence - Sites of Violence – Family , Workplace, Public spaces
- Feminism

- Feminism in India – Chipko, Anti Arrack Movement
- Social Evils pertaining to Gender
- Laws relating to Gender; Crime against Women and Girl Children

Lesson 13: Environment and Society (Time allocation: 12 hours)

- Analyze the Current Environment challenges – Destruction of Nature, Pollution, Climate Change, Global Warming, Solid Waste Disposal, Declining Eco diversity, etc.
- Towards Sustainability
- Sustainable Development & SDGs

Lesson 14: Science, Technology and Society (Time allocation: 12 hours)

- Relationship between Science & Technology and Society
- Origins of Scientific and Mathematical Knowledge in Ancient India
- 21st Century Developments in Science and Technology
- 4th Industrial Revolution
- Information Age – ICT
- How Advancement in Technology has Affected Human Society – Is Science a bane or boon
- 21st Century Skills
- Science & Technology Education in India
- Advancements in Science and Technology in Contemporary India – Research, Space, Defence

Lesson 15: Health and Society (Time allocation: 12 hours)

- Concept of Health – Holistic Health
- Need and Importance of Health in Society
- Origins of Knowledge of Medicine and Surgery in Ancient India
- Indigenous systems – Ayurveda & Yoga, Naturopathy
- Modern Day Developments in Health and Medicine
- Health Education in India, India as a provider of Doctors to Other Countries
- Health Infrastructure in India – Need for Improvement, India as a Health Destination for Foreigners

- Health and Environment
- Health Issues in Present day India – COVID 19, Common diseases/killers – Diabetes, Hypertension, Cancer, Heart Attack, Stroke
- Advancements in the Field - India as a provider of Vaccines to the World

Lesson 16: Media and Society (Time allocation: 12 hours)

- What is Media- Media, Mass Media and Social Media?
- Mass media – A Brief History of Newspapers, Radio and Television.
- Illustrations of use of Social media – Dating, Social Revolution & Cyber Bullying.
- What is media – Media , Mass Media and Social Media
- Mass Media – A brief History of Newspapers, Radio and Television
- Impact of Media on Society
- The role of Media in Gender, Economy, Polity, Environment
- Issues and Challenges - Corruption and malpractices in Media, Media joining hands with Anti-National Elements
- Illustrations of use of Social media – Dating, Social Revolution & Cyber Bullying

Lesson 17: Understanding Education in India (Time allocation: 12 hours)

- Education for Social Development and National Development
- Education for Life and Livelihood
- Education Policy in India (NEP 2020)
- Holistic Education, Inclusive Education, Value Education, India-Centred Education, Education for All
- Education for Sustainable Development – Lifelong Learning, Learning to Learn
- Education for Human Resource Development, Atma Nirbhar Bharat, Skill Education
- Use of ICT in Education
- Education at Various Stages – Elementary, Secondary, Higher, Tertiary
- Issues and Challenge in Indian Education System – Quantity and Quality, Teacher Preparation, Teacher shortage, Adult Education, Education for Differently abled people, Brain Drainage.

MODULE IV: TRIBAL SOCIETY IN INDIA

Time: 24hrs **Marks: 08**

Lesson 18: Tribes in India **(Time allocation: 12 hours)**

- Understanding Tribes – Globally and in India
- Features of Tribes
- Historical Understanding of Tribes
- Tribes and Caste
- Status of Tribes in India- Assimilation , Isolation & Integration
- Various Tribes in India Depict with a Map
- Tribes in India Today
- Features of Tribes
- Tribal Movements

Lesson 19: North East Indian Society and Culture **(Time allocation: 12 hours)**

- Tribes in North Eastern India
- Tribes in Sikkim – Case Study
- Demographic Profile of Tribes in the North East and Sikkim
- Issues and Challenges of North East and Sikkim

TOURISM

RATIONALE

Tourism is one of the most dynamic and diverse industry. Tourism refers to all activity related to the short-term movement of people to locations away from where they usually reside. It is one of the world's largest industries. Its evolution can be estimated from the fact that the number of tourists all over the world has increased to 1.5 billion in 2019. The tourism industry contributes 10.2 percent of the world's GDP. It is estimated that every 10th person in the world works in the tourism industry.The tourism industry can contribute significantly in generating permanent employment opportunities and eliminating poverty. According to an assessment, an investment of Rs. 10 lakh in tourism industry provides employment to about 90 people, while about 45 in agriculture, and about 13 people in manufacturing.

It is an industry which comprises of businesses that serve the needs of travelers. Thus, it is a multifaceted industry comprising of businesses related to accommodation, transportation, travel agencies, attractions and entertainment.

Tourism is vital for the success of many economies around the world. Tourism boosts the revenue of the economy, creates jobs, develops the infrastructures of a country, and creates a sense of cultural exchange between foreigners and citizens.

Tourism creates jobs not only in the tourism sector but it also include the agricultural, health, education, handicrafts and so on. Tourists travel to experience the culture and traditions of a destination. This helps the local artists and performers, restaurants, local vendors in finding sources of revenue from tourism.

Tourism requires infrastructure like airports, railway stations, roads, highways, parks, improved public spaces, hotels at destination. Good infrastructure will draw the tourist to a destination and also improve the living conditions of local population.

Tourism plays a very big role in promoting interaction of people of various backgrounds, cultures and races. This interaction leads to a better understanding and appreciation of other cultures which can in turn lead to the promotion of peace, harmony and coexistence among people.

The tourism resources like monuments, wildlife, beaches, hills, culture etc. are maintained and looked after as these are the reason for which tourist chooses a destination and visits it.

There are negative consequences of tourism on destination and host population if it is not developed in a planned way. It creates pollution of beaches, rivers and mountains and depletes the resources and problems of waste management. The monuments are overcrowded leading to stress on the heritage buildings. So, the tourism planners have to develop sustainable tourism where tourists travel responsibly, and tourism development is beneficial to the community and the resources are optimally utilized.

Tourism is a profitable industry and the countries continuously invest in making the destination attractive and thus creating a positive image.

CURRICULUM OBJECTIVES

The overall curriculum aims of the Tourism Education are to:

- Develop the tourist areas socially and economically**.**
- To increase employment opportunities in tourism sector
- Develop domestic tourism for the budget or economy category.
- Preserve the environment and national heritage.
- Foster better knowledge of various cultures
- Improve the local population's quality of life.
- Provide both community and tourist-oriented facilities.
- Instill pride in one's traditional culture and identity. The purpose behind tourism marketing is to promote the business, make it stand out from rivals, attract customers, and generate brand awareness
- Many modern tourism marketing strategies make use of the internet, with websites, online adverts, email and social media platforms often playing a key role.
- It outlined the importance of the industry in the global context and in the national context, its effect on employment generation, foreign exchange earnings etc.
- It recognized the great potential, which existed in the country for the development of tourism and the tremendous scope for accelerated growth.

COURSE STRUCTURE

The current curriculum comprises of VII Modules ans 24 lessons.The study hours and marks allotted are as follows:

Modules	**No of Lessons**	**Study Hours**	**Marks allotted**
Module 1	3	30	10
Module 2	3	30	10
Module 3	4	40	12
Module 4	2	20	08
Module 5	4	40	15
Module 6	6	60	18
Module 7	2	20	07
Practical/project Work			20
Total	**24**	**240**	**100**

MODULE 1: IDEA OF TOURISM

Time: 30 hrs **Marks: 10**

Lesson 1: Values, wisdom and knowledge: The ultimate aim of education

(Time allocation: 10hrs)

- Universal and Eternal values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge & Wisdom in Ancient Bharat
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson 2: Knowledge and Wisdom in Tourism **(Time allocation: 10 hrs)**

- What is Tourism : Definition, Components, Concept, Characteristics, As
- Leisure, Recreation & Tourism.
- Nature & types of Tourism.
- Elements of tourism: Man, Time,& Space.
- Travel Motivators
- Interdisciplinary Nature of Tourism
- Tourism Impacts

Lesson 3: Origin and Evolution of Tourism **(Time allocation: 10hrs)**

- Growth of Travel and Tourism through ages
- Tourism in Ancient India: Travel accounts of Fa Hein &Hiuen Tsang etc.
- Early (Renaissance & Age of Grand tours) Medieval (Industrial Revolution)
- Modern (Pre-World War I , Post World War II & Jet Age)
- Tourism In India: Tirthatan, Deshartan ,Paryatan& Modern Travel.

MODULE II: CULTURAL DIMENSIONS OF TOURISM

Time: 30 hrs **Marks: 10**

Lesson 4: History & Tourism (Time allocation: 10 hrs)

- Significance & importance of History in Tourism
- History as Tourism product

Lesson 5: Understanding Indian cultures and Heritage (Time allocation: 10hrs)

- Defining – Heritage , Historical Sites & Archaeological Sites
- Historical & Cultural Resources for Development of Tourism
- Heritage Tourism & Its Components
- Indian Architecture as Tourist Attractions
- Indian performing Art Heritage.

Lesson 6: Religious and Cultural Heritage of India (Time allocation: 10 hrs)

- Hinduism & Related Sites. Jainism & Related Sites.
- Buddhism & Related Sites. Sikhism & Related Sites.
- Islam & Related Sites. Christianity & Related Sites

MODULE III: NATURAL DIVERSITY AS TOURISM ATTRACTIONS

Time: 40hrs **Marks: 12**

Lesson 7: Biodiversity zones in India (Time allocation: 10 hrs)

- Explain the concept of Biodiversity
- Understand the Importance of Biodiversity for Tourism
- Examine the Threats to Biodiversity
- Describe the Qualifying Criteria for Biodiversity Hotspots
- Identify Biodiversity Hotspots of India

Lesson 8: Biosphere Reserves of India (Time allocation: 10 hours)

- Understand the Concept of Biosphere Reserves
- Establish the Importance of National Parks
- Explain the Global Criteria of Biosphere Reserve

- Recognize the Composition of Biosphere Reserve
- Identify the Different Biosphere Reserves of India

Lesson 9: National Parks in India **(Time allocation: 10 hours)**

- Describe the Concept of National Parks
- Explain the Features of National Park in India
- Establish the Importance of National Parks
- Recognize the role of National Parks as Natural Tourism Resources of India
- Identify the different National Parks of India

Lesson 10: Wildlife Sanctuaries in India **(Time allocation: 10hours)**

- Describe the Concept of Wildlife Sanctuaries
- Differentiate between National Parks and Wildlife Sanctuaries
- Identify Unique Wildlife Sanctuaries of India

MODULE IV: GEOGRAPHY OF TOURISM

Time: 20hrs **Marks: 08**

Lesson 11: Concepts of Geographical Resources in Tourism

(Time allocation: 10 hrs)

- Significance & Importance of Geography in Tourism.
- Defining – Longitude , Latitude & Time Calculations
- Physical and Cultural Geography.
- Geographical Features and their Role in Tourism – Canyon , hills, rivers , lakes & deserts
- Map Reading.

Lesson 12: Fundamental of Travel And Tourism Geography

(Time allocation: 10 hrs)

- IATAGeography- TCI ,TC-II, TCIII
- City codes and AirPort Codes (WORLD)
- City Codes and Airport Codes (INDIA)

MODULE V: TOURISM BUSINESS OPERATIONS AND MANAGEMENT

Time: 40hrs **Marks: 15**

Lesson 13: Travel Agency and Tour Operation Business

(Time allocation: 10 hrs)

- Role and Functions of Travel Agency.
- Travel Intermediaries.
- Types of Travel Agents
- Setting up of a Travel Agency Business.
- Role & Functions of a Tour Operator.
- Types of Tour Packages.
- Itinerary Preparation
- Tour Costing.

Lesson 14: Hospitality and Accommodation Management

(Time allocation: 10 hrs)

- Types of Hospitality Services.
- Types of Hotels.
- Organizational Structure of Hotels.
- Star grading & Classifications of Hotels.

Lesson 15: Tourism Organization and Travel Trends in India

(Time allocation: 10hrs)

- Roles and functions of UNWTO, PATA, IATA, WTTC etc.
- State tourism Boards /Departments;
- IATO, TAAI, FHRAI etc
- Travel Trends analysis & Interpretation

Lesson 16: Safe & Honorable Tourism in India

(Time allocation: 10hrs)

- Safety Protocols in Tourism & Hospitality
- UNWTO Business Code of Ethics
- Practising Principles Of Safe And HonorableTourism

MODULE VI: TOURISM ATTRACTIONS

Time: 60hrs **Marks: 18**

Lesson 17: Tourism attraction in North India

(Time allocation: 10hrs)

- North India
- Tourism Attractions
- Popular Tourism Circuits Of North India

Lesson 18: Tourism products of East India

(Time allocation: 10hrs)

- Sikkim –Gangtok
- Assam –Dispur
- Arunachal Pradesh-Itanagar
- Meghalaya-Shillong
- Bihar –Patna
- Jharkhand-Ranchi
- Manipur-Imphal

Lesson 19: West India **(Time allocation: 10hrs)**

- Man-Made Tourist Attractions of West India
- Natural Tourist Attractions of West India

Lesson 20: Natural and Human-made attractionsin South India

(Time allocation: 10hrs)

- Attractions in Tourism
- South India: Profile
- Natural Attractions of South India

Lesson 21: Tourism attractions of North East India(Time allocation: 10hrs)

- Manipur
- Nagaland

- Sikkim
- Arunachal Pradesh
- Mizoram
- Meghalaya
- Assam

Lesson 22: Rural Tourism **(Time allocation: 10hrs)**

- Understand the concept of Rural Tourism
- Explain the History of Rural Tourism
- Discuss the elements of rural tourism

Module VII: International Trends in Tourism

Time: 20hrs **Marks: 07**

Lesson 23: International Tourism association **(Time allocation: 10hrs)**

- Concept of tourism organizations and associations
- Type of tourism organizations and associations
- Need for tourism organizations and associations
- Functions of tourism organizations and associations
- Case Study Discussion

Lesson 24: Responsible tourism Trends **(Time allocation: 10hrs)**

- Responsible Tourism: Need of the Hour
- Characteristics of responsible tourism
- Responsible tourism :Guiding principles for tourism business
- Responsible tourism guidelines for traveller

ENTREPRENEURSHIP

RATIONALE

Entrepreneurship education helps students develop a range of skills and competencies that are valuable in both their personal and professional lives. It teaches them how to think creatively and critically, how to identify and solve problems, and how to take calculated risks.

Entrepreneurship promotes economic growth, provides access to goods and services, and improves the overall standard of living. Many entrepreneurs also make a positive impact on their communities and improve their well-being by catering to underserved areas and developing environment-friendly products.

One major benefit of studying entrepreneurship is the gained ability to recognize opportunity. Entrepreneurial studies focus on the application of one's knowledge and skills to commercial opportunities. Being able to determine a company's worth through analysis of their strategies, practices.

Entrepreneurship education aids students from all socioeconomic backgrounds to think outside the box and nurture unconventional talents and skills. It creates opportunities, ensures social justice, instills confidence and stimulates the economy.

Entrepreneurship is frequently credited as a major driver of economic growth, spurring transformation, the creation of new markets, innovation, and building wealth. Entrepreneurs are often key to developing ideas and solutions to problems while creating new products.

The Government of India and state governments are creating a supportive entrepreneurial ecosystem and providing incentives and infrastructural facilities through the single window system. This has resulted in improvements in India’s place in the world ranking of Ease of Doing Business.

Entrepreneurship is all about starting, designing, launching and managing a business enterprise. Innovation is important to sustain and improve any business enterprise. With this spirit, the entrepreneurship course has been initiated for the senior secondary level to provide learners with a basic understanding of entrepreneurship and choosing enterprise as a career.

Curriculum Objectives

This course will help develop the understanding of entrepreneurship as a discipline.

The objectives of the subject should be to enable the learners to

- Understand what the subject is all about, its knowledge and wisdom, origin and evolution.
- Develop in students the knowledge and thought of India for developing a national pride.
- Understand the meaning, types and characteristics of entrepreneurship
- Cultivate the interest of the learners and motivate them to opt for entrepreneurship as a career
- Appreciate the importance of entrepreneurial creativity and innovation
- Know the concepts and theories of motivation
- Understand the process of enterprise marketing and resource mobilization
- Create awareness regarding entrepreneurial growth and development
- Familiarize with entrepreneurial eco-system and government support

COURSE STRUCTURE

The current curriculum comprises of IV Modules and 17 lessons. The study hours and marks allotted are as follows:

Modules	**No of Lessons**	**Study Hours**	**Marks allotted**
Module 1	3	22	09
Module 2	3	23	10
Module 3	4	30	13
Module 4	7	45	18
Practical/Project work		120	50
Total	**17**	**240**	**100**

MODULE I: IDEA OF ENTREPRENEURSHIP

Time: 22 hrs **Marks: 09**

Lesson 1: Values, Wisdom and Knowledge- The Ultimate Aim of Education

(Time allocation: 7hrs)

- Universal and Eternal Values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge & Wisdom in Ancient Bharat
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson 2: Knowledge and Wisdom in Entrepreneurship (Time allocation: 08hrs)

- Who are Entrepreneurs?
- Types of Entrepreneurs

Entrepreneurship: Need and Importance
(**Need of Entrepreneurship for Economic Growth**: Innovation, Employment, Living standard, Research and Development
(Individual: Economic Development by Entrepreneurs, Contribution of Entrepreneurs to National Profit, Social Change by Entrepreneurs)

- Elements of Entrepreneurship
- Barriers to Entrepreneurship
- Dimensions of Entrepreneurship
  - Intrapreneurship
- Entrepreneur Vs Intrapreneur
  - Technopreneurship
  - Tourism Entrepreneurship
  - Ecopreneurship
  - Cultural Entrepreneurship
  - Social Entrepreneurship
  - Rural Entrepreneurship
  - International Entrepreneurship
  - Women Entrepreneurship
- Skills and Competencies
- Developing Entrepreneurial Competencies\

Lesson 3: Origin and Evolution of Entrepreneurship (Time allocation: 07hrs)

- Evolution of Entrepreneurship
  - ❖ Ancient Period
  - ❖ Medieval Period
  - ❖ Modern Period
    - ➢ Pre Independence
    - ➢ Post Independence
- **Changing Face of Entrepreneurship in India** (Box Info, Few Case Studies)
  - Liberalization, Privatization, Globalization (Post 1991)
  - Make in India

- Atmanirbhar Bharat (Post 2014)
  (Emphasis on New Government Policies)

MODULE II: ENTREPRENEURIAL OPPORTUNITY AND PLANNING

Time: 23 hrs **Marks: 10**

Lesson 4: Creativity and Innovation **(Time allocation: 08hrs)**

- Concept of Creativity
- Creativity – a Necessity for Entrepreneurial Success
- Concept of Innovation
- Need for Innovation as Value Addition for Entrepreneur
- Concept of Entrepreneurial Motivation
- Entrepreneurial Motivating Factors
- Entrepreneurial Motivation and Human Needs (Maslow Theory)
- Intrinsic and Extrinsic Motivation
- Entrepreneurship for Self-Actualization

Lesson 5: Entrepreneurial Opportunity **(Time allocation: 07hrs)**

- Idea Generation and Sources
- Environment Scanning
- Selecting the right opportunity
- Launching a New Venture/ Startup: Concept of Business Incubation, Steps Involved in Launching a Business, Various Forms of Business Ownership, Registration of Business Units

Lesson 6: Feasibility Studies and Business Plan **(Time allocation: 08hrs)**

- **POC, Proto Type and MVP**
- Feasibility Studies: Concept and Relevance
- Components of Feasibility Studies
- Opportunity Analysis; External Environment Analysis Economic, Social and Technological Analysis.
- Development of a Business Plan (viability)
- Execution of a Business Plan

MODULE III: ENTERPRISE MARKETING AND RESOURCE MOBILIZATION

Time: 30hrs **Marks: 13**

Lesson 7: Operation Management **(Time allocation: 06hrs)**

- Prototyping to Minimal Viable Product (MVP)
- Supply Chain Management

  (Project Management)

- Time Management

(Quality Management)

Lesson 8: Marketing and Sales Management **(Time allocation: 07hrs)**

- Understanding the Market Concept, Types, Micro / Macro Market, Environment
- Marketing Research
- Marketing Mix

  Branding, Logo, Tag Line

Lesson 9: Resource Mobilization **(Time allocation: 09hrs)**

- Human Resource Management -Talent Acquisition, Team Building and Organizational Development
- Traditional Sources:
  - Capital Market: Concept
  - Primary Market: Concept, Methods of Issue
- Institutional Finance: Commercial Banks and Other Financial Institutions (NSIC, SIDO, DIC's, SSIB etc)
- Emerging Trends of financing:
  - Family Friends
  - Seed Funding from Government
  - Angel Investor: Features
  - Venture Capital: Features, Funding
  - Mudra Loan

Lesson 10: Business Finance Concepts **(Time allocation: 08hrs)**

- Unit of Sale, Unit Price & Unit Cost – for Single Product or Service
- Types of Cost – Start-up, Variable and Fixed
- Time Value of Money (Present Value, Future Value)

- Profitability and Financial Statement
    - Trading and Profit and Loss Account
    - Balance Sheet and Financial Statement
- Return on Investments (RoI)
- Pay Back

  Break Even Analysis – for Single Product or Service

MODULE IV: ENTREPRENEURAL GROWTH AND DEVELOPMENT

Time: 45hrs **Marks: 18**

Lesson 11: Entrepreneurial Growth Strategies (Time allocation: 06hrs)

- Franchising: Concept and Types
- Mergers and Acquisitions
- Advantages and Limitations to Franchisor and Franchisee.
- Reasons for Mergers and Acquisition: Concept, Reasons and Types

Lesson 12: Sustainability & Entrepreneurship (Time allocation: 07hrs)

- Ministry of Skill Development and Entrepreneurship:
- NIESBUD
- Micro & Small Enterprises: Concept & Meaning
- Features and Characteristics
- Objectives of MSME
- Role of MSME in Economic Development
- Support and Sustainability of Enterprise
- Problems of MSME

Lesson 13: Digitalization in Entrepreneurship (Time allocation: 07hrs)

- e-Resources
- Impact of Digitalization on Entrepreneurship
- Entrepreneurship in Digital India
- Tech-Enabled Enterprises that have been a Success from India

  (Case Studies, for Example: Infosys, Nyyka)

Lesson 14: Ethics in Entrepreneurship (Time allocation: 06hrs)

- Importance
- Entrepreneurial Values and Attitudes
- Social Norms
- Morality
- Philanthropy & Social Responsibility Initiatives: CSR
- Norms of Conduct
- Business Ethics and Conduct

Lesson 15: Social Entrepreneurship (Time allocation: 06hrs)

- Social Entrepreneurship
- Characteristics of social entrepreneur
- Importance of Social entrepreneurship
- Difference between commercial and social entrepreneurship
- Indian case studies of Social Entrepreneurship

Lesson 16: Entrepreneurial Success in India (Time allocation: 07hrs)

- Successful Corporate Houses (Case Studies)
    - Tata
    - Birla
    - Ambani
    - Adani
- Small Caselets
    - Wipro
    - HCL
    - Mahendra
    - Hero Motors
- Self-Made Women Entrepreneurs of India
    - Kiran Mazumdar Shaw
    - Falguni Nayar
    - Aditi Gupta
    - Pabiben Rabari
    - Lalita Patil
- Successful Startups (Case Studies)

Lesson 17: New Government Schemes, Initiatives and Support Organizations

(Time allocation: 06hrs)

- EDP (Entrepreneurship Development Programs):
  - Need and Objectives
- Listing and Briefing of the Schemes and Initiatives
- Business Incubation
- Startup India

Project work/ Case Studies

MEDIA AND COMMUNICATION STUDIES

RATIONALE

The Media and Communication Sector is expanding fantastically in the modern world. This sector has seen impressive growth in diverse fields like broadcast, filmmaking, advertisement, print advertising, music, the internet, and many more. For people who are interested in a niche industry and wish to choose it as their career, journalism and media & communication studies provide a diverse range of chances for the next generation.

The study of media and communication impacts practically every facet of daily life and is becoming more and more popular. This is due to the fact that diverse media has entered our lives including social media..

Today, Media and Communication is a good career choice with immense potential for growth offering plenty of opportunities for aspiring professionals in diverse fields such as newspapers, magazines, radio, television, advertising, public relations, new media etc. with immense potential for growth.

Media courses being offered by several universities/ colleges as well as private media schools at the undergraduate level are in great demand. Several young learners at the school level would be aspiring to take up this field as a career option.

There is a need to groom such learners by accelerating their level of awareness. A basic understanding of the subject may equip them better while choosing it as a career option. The course will impart some of the basics of media and communication to those aspiring to pursue a career in the information/ communication /entertainment industry, and equip them with skills required for jobs in the media industry.

The benefits of this profession include improves communication skills, opportunities to work on challenging projects, social status, freedom to travel and experience different cultures, global networking, glamour, creativity, and competency work. Having access to locations that are off-limits to most people also provides them with a distinctive outlook on the world.

For those who want to see themselves separate from the crowd, there are many prospects in media and communication studies. After all, in this sector, learners' creativity and uniqueness propels them to higher altitudes.

CURRICULUM OBJECTIVES

i) To give learners an exposure to the diverse areas of Media and Communication studies ;

ii) To endow learners with the knowledge, communication skills and perspectives necessary for future careers in the information/ communication/entertainment industry;

iii) To develop their aesthetic skills;

iv) To inculcate elements of creativity.

COURSE STRUCTURE

The current curriculum comprises VII Modules and 24 lessons. The study hours and marks allotted are as follows:

Modules	**No of Lessons**	**Study Hours**	**Marks allotted**
Module 1	3	18	7
Module 2	5	30	13
Module 3	2	12	5
Module 4	2	12	5
Module 5	3	18	7
Module 6	3	18	8
Module 7	6	36	15
Practical/Project work		96	40
Total	**24**	**240**	**100**

MODULE I -IDEA OF MEDIA STUDIES

Time: 18hrs **Marks: 7**

Lesson 1: Values, Wisdom and Knowledge – The Ultimate Aim of Education

(Time allocation: 6hrs)

- Universal and Eternal Values
- Vices and Virtues
- Linguistic Connotation and Sources of Knowledge & Wisdom in Ancient Bharat
- Meaning of Knowledge & Discipline of Knowledge
- Interdisciplinary and Multidisciplinary Approach

Lesson 2: Knowledge and Wisdom in Media and Communication

(Time allocation: 6 hrs)

- Introduction and Definition of Media & Communication
- Communication as an Organic Process
- Concept of Media and Mass Communication
- Barriers to Communication
- Aspects of Mass Communication
- Functions of Mass Communication
- Types of Media
- Role of Mass Media in Politics and Development of a Nation
- Mass Media and Society

  Scope of Media

Lesson 3: Origin And Evolution of Media And Communication (Time allocation: 6 hrs)

- Origin of Mass Communication
- History of Mass Communication
- Timeline of Evolution of Media
- Invention of Print, Electronic, and Digital Media
- Traditional/Folk Media
- Traditional/Folk vs Contemporary Media)
- Developments in Media
    - Print Media

- Electronic Media – Radio & TV
- Development Communication – Social Media, You Tube, Internet

MODULE II: MASS COMMUNICATION: VISUAL, PRINT AND ELECTRONIC MEDIA

Time: 30hrs **Marks: 13**

Lesson 4: Media, Art and Culture **(Time allocation: 6 hrs)**

- Relationship between Media, Art and Culture
- Creativity and Media
- Art & Culture as Media
- Dance & Drama
- Literature
- Cinema, Music & Theatre

Lesson 5: Print Media **(Time allocation: 6 hrs)**

- Introduction to Print Media
- Brief History of Print Media
- Print Media in India
- What is News
- Reporting and Editing
- Language Press in India
- Content Analysis of Newspapers and Periodicals
- Print Media and Concentration.

Lesson 6: Radio **(Time allocation: 6 hrs)**

- Introduction to Radio
- Brief History of Radio
- Radio in India
- Characteristics of Radio
- The Radio Station
- Formats of Radio Programmes
- Radio Programme Production
- Content Analysis of Radio Programmes
- Community Radio

Lesson 7-Television **(Time allocation: 6 hrs)**

- Introduction to Television
- Brief History of Television
- Television in India
- Role of Television as a Mass Medium
- Television Channels
- Television Programme Production
- Analysis of TV Programmes
- Television: Formats, Production and Distribution.

  TRP: Television Rating and Marketing

Lesson 8: Film / Cinema **(Time allocation: 6 hrs)**

- Evolution of cinema
- DG Phalke and Silent Era
- Coming of Sound, Studio Era, Post Independent Era
- Satyajit Ray and Parallel Cinema
- Analysis of Films
  - The Concept of Mise en Scene
  - Short Film-Fiction, Short Film - Non Fiction
  - Feature Film
- Digital Filmmaking (With Mobile and Other Technologies)
- Digital Media and Independent Cinema
- Films and Social Change

MODULE III-MASS COMMUNICATION: DIGITAL MEDIA

Time: 12hrs **Marks: 05**

Lesson 9: Digital Media **(Time allocation: 6 hrs)**

- Digital Media- an Introduction
- Digital Media as a Form of Communication
- Digital Media and its Importance
- Types of Digital Media
- Characteristics of Digital Media
- Concept of Convergent Media
- Digital Media and Management

Lesson 10: Role of Digital Media in Social and Nation building (Time allocation: 6 hrs)

- Impact of Social media in Nation Building
- Strengthening of Democracy
- Digital Media and Social Transformation
- Digital Media as a Marketing Tool
- Digital Media and Cultural Change

Tools of Digital Media: Uses of Blogs, Articles, Captions, Hashtags, Infographics

MODULE IV

EDUCATIONAL MEDIA & TECHNOLOGY FOR NATION BUILDING

Time: 12hrs **Marks: 05**

Lesson 11: Educational Media: Concept and Practical Application

(Time allocation: 6 hrs)

- Evolution of Educational Media: Traditional & Modern
- Traditional Educational Media: Print; Audio; Visual (Projected/Non-Projected); Audio-Visual; Multi-Media
- Technology in Educational Media: Use of Computer and Internet
- Space Technology – Satellite Based Educational Media
- Content Writing and Publishing
- Developing Audio/Video Programmes
- Script Writing for Audio/Video
- Recording
- Editing

Lesson 12: Digital Educational Platforms (Time allocation: 6 hrs)

- Educational Radio
- Educational TV – Swayam Prabha Project of Govt. of India with 34 DTH Educational Channels
- Digitalisation of Knowledge: NCERT Diksha(Digital Infrastructure for Knowledge Sharing) in India,Wikipedia at Global Level
- Concept of OERs (Open Educational Resources) – Digital e-Library of India (collaborative project by 21 institutions in India Handled by IISc, Bangalore, National Digital Library of IIT Kharagpur, Shodhganga Repository of Research Thesis and

Dissertations; NPTEL (National Programme on Technology Enhanced Learning) Run by 7 IITs Sponsored by Ministry of Education, Govt. of India; NCERT; NIOS

- Concept of MOOC (Massive Online Open Course) – Swayam MOOC Portal of Govt. of India
- Concept of Learning APPs
- Some Popular Learning Apps – Vedantu, Udemy. Unacademy, Coursera, Simplilearn, Duolingo, TED, Khan Academy

Concept of Learning Management Systems – Canvas, Google Classroom, Schoology, Moodle

MODULE V-UNDERSTANDING ADVERTISING

Time: 18hrs **Marks: 08**

Lesson 13: Advertising: An Introduction **(Time allocation: 6 hrs)**

- Introduction to Advertising
- Concept & Process of Advertising
- History of Advertising Industry
- Functions of Advertising
- Marketing Mix
- Difference between Marketing and Advertising
- Brand and Brand Identity

Lesson 14: Traditional Advertising **(Time allocation: 6 hrs)**

- Types of Advertising
  - Print-Newspapers, Magazines, Brochures, Fliers, Posters
  - OOH-Billboards, Kiosks, Tradeshows Events
  - Broadcast Advertising - Radio, TV, Digital Internet + Mobile
  - In Film' Promos
  - Celebrity Endorsements
  - Merchandise

Lesson 15: Digital Advertising **(Time allocation: 6 hrs)**

- Games (Mobile and Computer)

(To be Assessed in Practicals Only. No Question to be Asked in Theory Examination from This Portion.)

- Covert Advertising
- Forms of Advertising
- Product Advertising (Pay Per Click)
- Institutional Advertising (Corporate)
- Social Service – PSA Advocacy Advertising
- Comparative Advertising Cooperative
- Advertising Direct Mail.
- A Point-of-Purchase Advertising.
- Informational Advertising.
- Social Media Advertising
- Advertising and Personalization

MODULE VI

CORPORATE COMMUNICATION AND EVENT MANAGEMENT

Time: 18hrs **Marks: 08**

Lesson 16: Public Relations **(Time allocation: 6 hrs)**

- Concept of Public Relations
- Evolution of Public Relations in India
- Types of Public Relations
- Government Public Relations Structure
- Digital Tools of Public Relations as Digital Form.

Lesson 17: Corporate Communication **(Time allocation: 6 hrs)**

- Definition, Meaning and Importance of
- Corporate Communication
- Example of Corporate Communication
- Role of Corporate Communications
- Types of Corporate Communication
- Digital Media
- Objectives of Communication
- Components of Communication
  - Branding Awareness
  - Corporate Branding

- Corporate Reputation (Brand Credibility)
- Customer Communication
- Brand Talent
- Employee Engagement
- Employee Productivity

- Importance of Corporate Communication

Lesson 18: Event Management **(Time allocation: 6 hrs)**

- Concept of Event Management.
- Event Planning
- Event Risk Management
- Business Communication
- Event Advertisement and Marketing
- Event Cost Management and Budgeting
- Streaming

MODULE VII-CAREER AND ENTREPRENEURSHIP IN MEDIA

Lesson 19: Life Skills for Media Profession **(Time allocation: 6 hrs)**

- Life Skills
  - Communication skills
  - Self management skills
  - ICT skills
  - Entrepreneurial skills

Lesson 20: Employment Opportunities **(Time allocation: 6 hrs)**

- Print
- Radio
- Television
- Advertising and Public Relations
- Event Management
- Corporate Communications
- Photo Journalism
- Film/Cinema

Lesson 21: Career & Entrepreneurship in Media (Time allocation: 6 hrs)

Self Employment

Start Ups

Government Schemes

- Private Participation

Lesson 22: Media Literacy (Time allocation: 6 hrs)

- Defining Media Literacy, its Importance and Functions
- Understanding the Process of News Making: Sources, Framing, Ideology, Language, Representation
- Decoding and Understanding Framing and Meaning of Media Messages
- Emerging Platforms for News Consumption: Internet. Mobile, Social Media and Messaging Platforms
- How to Read Newspaper, Watch TV News Channel and Digital News Portals

Lesson 23: Media Ethics (Time allocation: 6 hrs)

- Defining Media Ethics: Social Responsibility of Press
- Legal Rights and Responsibilities of Journalists
- Code of Conduct by Press Council of India
- Prasar Bharati Code of Conduct
- Editor's Guild

Lesson 24: Media and Law (Time allocation: 6 hrs)

- Press Laws Before and After Independence: An Analysis
- Freedom of Press and Indian Constitution (Article 19 (1)a and Article 19 (2))
- Intellectual Property Rights and 7 Types of Intellectual Property Rights, Namely – copyright, Trademarks, Patents, Geographical Indications, Plant Varieties, Industrial Designs and Semiconductor Integrated Circuit Layout Designs.
- Acts and Laws: Press and Registration of Books Act 1867, Copyright Act 1957, Working Journalists Act 1955 and 1958, Young Persons Harmful Publications Act 1956, Prasar Bharati Act 1990 and Cinematograph Act 1952, Official Secrets Act 1923 and Right to Information Act 2005 (Case Studies), Defamation (Libel and Slander)

  Regulatory Bodies: TRAI, BCCC, News Broadcasters Association and their Functioning

PROJECT WORK

New Syllabus will be followed for all the above mentioned subjects.

For the remaining subjects, the syllabus of NIOS will be followed, which can be accessed through “Online Course Material" on the home page of the website (www.bosse.ac.in)