



**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

# Secondary Curriculum

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## *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 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*

<b>SUBJECTS</b>	<b>PAGE NO</b>
English	4
Hindi	10
Mathematics	16
Science & Technology	28
Accountancy	43
Business Studies	52
Economics	63
Home Science & Human Ecology	73
Psychology	82

# 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:

- can read and write English.
- 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 punctuations.
- have a working vocabulary of at least 200-250 words.

## COURSE STRUCTURE

The current curriculum comprises of V Modules and 26 lessons. The study hours and marks allotted are as follows.

<b>Modules</b>	<b>No. of Lessons</b>	<b>Study Hours</b>	<b>Marks Allotted</b>
Module I	2	16	07
Module II	6	54	15
Module III	2	18	08
Module IV	9	78	25
Module V	7	74	25
Assignment			20
<b>Total*</b>	<b>26</b>	<b>240</b>	<b>100</b>

## **MODULE I: IDEA OF ENGLISH**

**Time: 16 hours**

**Marks: 07**

### **Lesson 1: Values, Knowledge and Wisdom: 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: Origin and Evolution of English**

**(Time allocation: 08 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: 54 hours**

**Marks: 15**

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

**(Time allocation: 09 hours)**

- Noun and its Types
- Pronoun and its Types
- Adjective: Forms and Types

**Lesson 4: Parts of Speech: Verb****(Time allocation: 09 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: 09 hours)**

- Adverb
- Preposition and Conjunction

**Lesson 6: Direct and Indirect Speech****(Time allocation: 09 hours)**

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

**Lesson 7: Active and Passive Voice****(Time allocation: 09 hours)**

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

**Lesson 8: Punctuation****(Time allocation: 09 hours)**

- Full stop
- Question Mark
- Use of Comma
- The Semicolon and the Colon
- Quotation Marks
- Apostrophe
- Hyphen



### **MODULE III: WRITING SKILLS**

**Time: 18 hours**

**Marks: 08**

#### **Lesson 9: Academic Writing**

**(Time allocation: 09 hours)**

- Note-making
- Summarizing
- Sub-titling

#### **Lesson 10: Letter and Application Writing**

**(Time allocation: 09 hours)**

- Writing of a Letter
- Writing of an Application

### **MODULE IV: PROSE**

**Time: 78 hours**

**Marks: 25**

### **MODULE V: POETRY**

**Time: 74 hours**

**Marks: 25**

## माध्यमिक

### हिन्दी

#### 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 हैं जैसे हिंदी में विज्ञापन हॉलीवुड फिल्मों की डबिंग, हिंदी समाचार चैनल, हिंदी फिल्म का लेखन, हिंदी गीत लेखन, हिंदी कॉल सेंटर और गूगल में हिंदी भाषा। भारत सरकार के सभी विभागों, बैंकों व एन0जी0ओ0 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 है जिस कारण भारत में आज हिंदी का बोलबाला बढ़ रहा है।

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

#### पूर्व अपेक्षाएँ

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

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

## पाठ्यर्या उद्देश्य

इस पाठ्यक्रम को पूरा कर लेने के बाद शिक्षार्थी:

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

## पाठ्यक्रम संरचना

इस विषय में V मॉड्यूल और 2 पाठ शामिल किए गए हैं। अध्ययन के घंटे और आवंटित अंक इस प्रकार हैं।

मॉड्यूल नम्बर	पाठों की संख्या	अध्ययन के घंटे	आवंटित अंक
I	3	26	08
II	4	34	12
III	3	26	10
IV	9	78	28
V	10	76	22
क्रियात्मक/परियोजना कार्य			20
कुल	29	240	100

### मॉड्यूल I: हिन्दी की अवधारणा

समय: 26 घंटे

अंक: 08

पाठ 1: मूल्य, बुद्धि और ज्ञान, शिक्षा का परम उद्देश्य

(आवंटित समय: 08 घंटे)

- 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: हिन्दी साहित्य का इतिहास (भाग-1)

(आवंटित समय: 09 घंटे)

- आधुनिक युग या गद्य काल
- भारतेंदु युग (1850-1900)

- द्विवेदी युग (1900–1920)
- छायावाद (1918–1936)
- प्रगतिवाद (1936–1943)
- प्रयोगवाद (1943)
- नयी कविता
- समकालीन कविता

**पाठ 3:हिंदी सहित्य का इतिहास (भाग-2)**

**(आवंटित समय: 09 घंटे)**

- हिंदी भाषा का विकास
- भारतीय आर्यभाषाओं का कालक्रमानुसार वर्गीकरण
- आदिकाल या वीरगाथा काल
- आदिकाल की प्रवृत्तियां
- वर्गीकरण
- पूर्व मध्यकाल या भक्ति काल
- ज्ञानमार्गी शाखा
- ज्ञानमार्गी शाखा की विशेषताएं
- प्रेम मार्गी शाखा
- रामभक्ति शाखा
- कृष्ण भक्ति शाखा
- पूर्व मध्यकाल या रीतिकाल

## मॉड्यूल II: व्याकरण

समय: 34 घंटे

अंक: 15

पाठ 4: संज्ञा, सर्वनाम, विशेषण

(आवंटित समय: 08 घंटे)

- संज्ञा के भेद
- सर्वनाम के भेद
- विशेषण के भेद

पाठ 5: क्रिया

(आवंटित समय: 08 घंटे)

- क्रिया की परिभाषा
- धातु के भेद
- क्रिया के भेद

पाठ 6: अव्यय

(आवंटित समय: 10 घंटे)

- क्रिया-विशेषण
- संबद्धबोधक
- समुच्चयबोधक
- विस्मयादिबोधक

पाठ 7: विराम चिन्ह

(आवंटित समय: 08 घंटे)

- विराम चिह्नों के नाम
- पूर्ण विराम
- प्रश्नवाचक
- अल्प विराम
- अर्द्ध विराम
- विस्मयादिबोधक

- उद्धरण
- योजक
- विवरण
- हंस पद
- लाघव
- तुल्यतासूचक
- लोप सूचक

### मॉड्यूल III: लेखन कौशल

समय: 26 घंटे

अंक: 10

पाठ 8 :निबंध लेखन

(आवंटित समय: 08 घंटे)

पाठ 9 :पत्र लेखन

(आवंटित समय: 08 घंटे)

पाठ 10:विज्ञापन लेखन,डायरी, संवाद, प्रसंग, लेखन

(आवंटित समय: 10 घंटे)

### मॉड्यूल IV :गद्य

समय: 78 घंटे

अंक: 28

पाठ: 11 से 19

### मॉड्यूल V:पद्य

समय: 76 घंटे

अंक: 22

पाठ: 20 से 28

# 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 learners:

- 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 VII Modules and 26 lessons. The study hours and marks allotted are as follows:

<b>Modules</b>	<b>No of Lessons</b>	<b>Study Hours</b>	<b>Marks Allotted</b>
Module I	05	40	15
Module II	06	50	18
Module III	08	65	18
Module IV	02	20	08
Module V	01	15	05
Module VI	03	30	08
Module VII	01	20	08
Assignment/Practical/ Project Work			20
<b>Total</b>	<b>26</b>	<b>240</b>	<b>100</b>

## **MODULE I: IDEA OF MATHEMATICS**

**Time: 40 hours**

**Marks: 15**

### **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 Mathematics (Time allocation: 08 hours)**

- Concept of Mathematics
- Various branches of Mathematics and their importance.
- Contribution of Mathematics in other disciplines.
- Scope of Mathematics.
- Sustainable Development and Mathematics.

### **Lesson 3: Origin and Glorious Evolution of Mathematics in India**

**(Time allocation: 08 hours)**

- Origin of Mathematics.
- Glorious History of Mathematics.
- Indian Mathematicians and their Contributions to the World
  - Ancient Indian Mathematicians,
  - Medieval Indian Mathematicians,
  - Modern Indian Mathematicians.
- Major landmarks in the Development of Mathematics and its Applied Branches.
- Achievements/Awards in the field of Mathematics.

#### **Lesson 4: Development of Mathematics in the West**

**(Time allocation: 08 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: 08 hours)**

- Introduction to the Father of *Vedic* Mathematics.
- History of *Vedic* Mathematics.
- Names of *Sutras* and *Up-Sutras*, and their Meaning.
- Aims and Objectives of *Vedic* Mathematics.
- Fundamental Operations such as Addition, Subtraction, Multiplication, Division.
- Computing Square, Square root, Cube, Cube root and their applications.

### **MODULE II: ALGEBRA**

**Time: 50 hrs.**

**Marks: 18**

#### **Lesson 6: Number System**

**(Time allocation: 10 hours)**

- Origin of numbers. (Numbers and Civilization)
- Types of Numbers and their Geometrical Representation.
- Decimal Expansion of Real Numbers.
- Definition of Exponents.
- Laws of Exponents for Real Numbers.
- Fundamental Operations on Rational Numbers.
- Expressing Decimal Expansion of a Rational Number in  $p/q$  form.

- Rational Numbers between two Rational Numbers.

### **Lesson 7: Rational Exponents**

**(Time allocation: 08 hours)**

- Prime Factorization.
- Radicals.
- Negative Integers as Exponents.
- Laws of Exponents.
- Meaning of  $a^{p/q}$ , where  $q \neq 0$
- Laws of Exponent for Integral Exponents.
- Pure and Mixed Radicals.
- Order of a Radical.
- Simplifying Radical Expression.
- Fundamental Operations of a Radical.
- Rationalization of Radicals.

### **Lesson 8: Algebraic Expressions and Polynomials**

**(Time allocation: 08 hours)**

- Introduction to Algebraic Expression.
- Algebraic Expression and Polynomials.
- Degree of Polynomials.
- Zeroes of a Polynomial.
- Factor Theorem.
- Remainder Theorem.
- Factorization of Polynomials, also using *Sutras/Up-Sutras* of *Vedic* Mathematics.
- Algebraic Identities.
- Addition, Subtraction, Multiplication and Division of Polynomials, also using *Sutras/Up-Sutras* of *Vedic* Mathematics.
- Square of Linear, Quadratic and Cubic expressions, also using *Sutras/Up-Sutras* of *Vedic*

Mathematics.

- Cube of Polynomials, also using *Sutras/Up-Sutras* of *Vedic-Mathematics*.
- LCM and HCF of Linear, Quadratic and Cubic polynomials, also using *Sutras/Up-Sutras* of *Vedic Mathematics*.
- Special Products using Identities.

**Lesson 9: Linear Equations in two Variables**

**(Time allocation: 08 hours)**

- Linear Equations.
- Graph of a Linear Equation in two Variables.
- Pair of linear equations in two Variables, using:
  - Algebraic method (elimination, cross-multiplication and substitution)
  - Graphical method.
- Solution of a pair of Linear Equations in two Variables, using *Sutras/Up-Sutras* of *Vedic Mathematics*.

**Lesson 10: Quadratic equations**

**(Time allocation: 08 hours)**

- Quadratic equations.
- Standard form of a quadratic equation.
- Solution of a quadratic equation.
- Nature and roots of the quadratic equations.
- Solution of quadratic equations, also using *Sutras/Up-Sutras* of *Vedic Mathematics*.

**Lesson 11: Arithmetic Progressions**

**(Time allocation: 08 hours)**

- Number Patterns.
- Arithmetic Progressions.
- General Term of an A.P.
- Sum of first  $n$  terms of an A.P.

## MODULE III: GEOMETRY

Time: 65 hrs.

Marks: 18

### Lesson 12: Lines and Angles

(Time allocation: 09 hours)

- Ray, Line and Angle.
- Pairs of Angles.
- Intersecting Lines and Non-intersecting lines.
- Concurrent Lines.
- Parallel Lines and Transversals.
- Lines Parallel to the Same Line.

### Lesson 13: Triangles

(Time allocation: 09 hours)

- Triangle, its Types and Properties.
- Angle-sum-property of a Triangle.
- Congruence of Triangles.
- Similarity of Triangles.
- *Baudhayana* Theorem (Pythagoras Theorem).
- Mid-point Theorem.

### Lesson 14: Quadrilaterals

(Time allocation: 08 hours)

- Quadrilaterals.
- Type of Quadrilaterals.
- Properties of Different type of Quadrilaterals.
- Diagonal of a parallelogram and relation to the area.
- Parallelograms and triangles between the same parallel.
- Triangles on the same base and between the same parallel.

**Lesson 15: Circles****(Time allocation: 06 hours)**

- Circle and its Related Terms.
- Measurement of an Arc of a Circle.
- Concentric Circles.
- Congruent Circles or Arcs.

**Lesson 16: Angles in a Circle and Cyclic quadrilateral****(Time allocation: 05 hours)**

- Angles in a Circle and Cyclic quadrilateral
- Some Important Properties.

**Lesson 17: Secants and Tangents****(Time allocation: 10 hours)**

- Secants and Tangents.
- Tangent as a Limiting Case.
- Tangent and Radius through the Point of Contact.
- Tangents from a point outside the circle.
- Intersecting Chords inside a Circle.
- Intersecting Secant and Tangent to a Circle.

**Lesson 18: Constructions****(Time allocation: 09 hours)**

- Division of a Line Segment in the given Ratio Internally.
- Construction of Triangles.
- To construct a Triangle similar to a given triangle, as per given scale factor.
- Construction of Tangents to a Circle:
  - At a point on the circle,
  - At a given point outside the circle.



**Lesson 19: Coordinate Geometry****(Time allocation: 09 hours)**

- Coordinate Plane.
- Coordinates of a Point.
- Quadrants.
- Plotting of a Point whose Coordinates are given.
- Distance Formulae.
- Section Formulae.
- Area of a Triangle, also using *Sutras/Up-Sutras* of *Vedic Mathematics*.
- Centroid of a Triangle.

**MODULE IV: MENSURATION****Time: 20 hrs.****Marks: 08****Lesson 20: Perimeter and Area of Triangles and Quadrilaterals****(Time allocation: 10 hours)**

- Perimeters and Areas of some specific Quadrilaterals and Triangles.
- *Brahmagupta's Sutra* (Heron's Formula).
- Areas of paths in rectilinear figures.
- Areas of circles and Circular paths.
- Perimeter and Area of a sector.
- Areas of combinations of figures involving Circles.

**Lesson 21: Surface Area and Volume****(Time allocation: 10 hours)**

- Meaning of Surface Area and Volume.
- Surface Area and Volume of Cuboids and Cubes.
- Surface Area and Volume of the Right-Circular Cylinder.
- Surface Area and Volume of the Right-Circular Cone.
- Surface Area and Volume of a Sphere.

## MODULE V: TRIGONOMETRY

**Time: 15 hrs.**

**Marks: 05**

### **Lesson 22: Trigonometry**

**(Time allocation: 20 hours)**

- Trigonometric ratios.
- Relationships between Trigonometric Ratios.
- Meaning of Identity.
- Trigonometric Identities.
- Trigonometric Ratios of Angles ( $45^\circ$ ,  $30^\circ$ ,  $60^\circ$ ,  $0^\circ$  and  $90^\circ$ ).
- Simple problems of Height and Distance.
- Trigonometric Identities and Problems of Heights and Distances will be solved, using *Sutras/Up-Sutras* of *Vedic* Mathematics.

## MODULE VI: STATISTICS

**Time: 30 hrs.**

**Marks: 08**

### **Lesson 23: Data and their Representation**

**(Time allocation: 10 hours)**

- Statistics and Statistical Data.
- Collection of Data.
- Presentation of Data.
- Cumulative Frequency Table.
- Graphical representation of Data.

### **Lesson 24: Measures of Central tendency: Mean, Mode and median**

**(Time allocation: 10 hours)**

- Mean Median and Mode.

(Mean Median and Mode of ungrouped and grouped data.)

**Lesson 25: Probability (Time allocation: 10 hours)**

- Probability.
- Random Experiment and its Outcomes.
- Probability of an Event.

**MODULE VII: BUSINESS MATHEMATICS**

**Time: 20 hrs.**

**Marks: 08**

**Lesson 26: Percentage and its Application**

**(Time allocation: 20 hours)**

- Percent.
- Conversion of a Fraction into Percent and Vice-versa.
- Conversion of a Decimal into Percent and Vice-versa.
- Calculation of Percent of a Quantity or a Number.
- Simple and Compound Interest.
- Profit and Loss.

# SCIENCE & TECHNOLOGY

## RATIONALE

Science and Technology is an integral subject in the school curriculum. It provides the basis for the creative inquisitiveness and paves the road for analytical thinking. Observation and experimentation forms the basis of the subject. Needless to say that the laws and principles of science find application in every walk of life. As a result Science and Technology have become an integral part of human life and culture. The curriculum of Secondary class gives an insight about origin of life, cells, various life processes ( both in plants and animals), environment, health hygiene, general chemistry, various aspects related with physics , electricity and magnetism etc .

The chapters on glorious past of India, eminent scientists, have been added to develop a sense of pride and accomplishment in young minds. Concept of Sustainable Development has been introduced to create awareness among young minds to ensure immediate and long-term benefits for our planet and all living beings.

Interdisciplinary approach adds to the value of the subject regarding overall development of the learner.

## CURRICULUM OBJECTIVES

This course will enable learner 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 origin of life and Life Processes associated with animals and plants.
- Become aware about various aspects of Environment and Sustainable Development

- Get familiarize with food resources, general health and hygiene.
- Formulate simple equations.
- Apply some of the Concepts of Physics in day to day life.
- Pursue Science as a carrier option.

### **COURSE STRUCTURE**

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

Modules	No of Lessons	Study Hours	Marks allotted
Module 1	3	15	10
Module 2	8	50	15
Module 3	4	20	08
Module 4	2	15	05
Module 5	9	60	18
Module 6	3	20	06
Module 7	8	60	18
Assignment			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 SCIENCE & TECHNOLOGY**

**Time: 15 hrs**

**Marks:-10**

### **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 Science**

**(Time allocation: 05 hours)**

- What is enquiry? How does it lead to scientific temperament?
- What are Science processes?
- Relationship of Science with other subjects
- Applications of enquiry to things around us

### **Lesson 3: Origin and Evolution of Science in Ancient India. (Time allocation: 05 hours)**

- Glorious History of Science in Ancient India
- Ancient/ Medieval / Modern Indian Scientists and their contributions to the world.
- Achievements / awards in the field of Science (National and International)

## **MODULE – II: ORIGIN OF LIFE AND THE LIVING WORLD**

**Time: 50 hrs**

**Marks:-15**

### **Lesson 4: Origin of life and Evolution on Earth**

**(Time allocation: 06 hours)**

- Dash Avatar as the Indian Theory of Evolution
- (Darwinism to be incorporated within it)

- Physical condition of primitive earth and Solar system.
- Theories (Big Bang Theory & other theories).
- Major events in history of life.
- Predictions of Ancient Indian Scientists
- Darwinism, Neo Darwinism
- How evolution took place?
- Tracing the evolutionary relationship
- Progress cannot be equated with evolution

**Lesson 5: Cell: Fundamental Unit of life**

**(Time allocation: 06 hours)**

- Origin and Structure of plant and animal cells
- Various internal organelles & their functions

**Lesson 6: Tissue**

**(Time allocation: 06 hours)**

- Various types of plants and animal tissues
- Their structure and function

**Lesson 7: Diversity in Living World**

**(Time allocation: 06 hours)**

- Various basis of classification
- Description of various Phylum and Classes

**Lesson 8: Life Processes**

**(Time allocation: 06 hours)**

- Life Processes in Plants and Animals
  - a) Respiration
  - b) Transportation
  - c) Excretion

**Lesson 9: Control & Coordination****(Time allocation: 07 hours)**

- Structure of brain
- Spinal cord
- Nervous system
- Hormonal system

**Lesson 10: Reproduction in plants and animals****(Time allocation: 07 hours)**

- Asexual & sexual mode of reproduction.
- Importance and need
- Reproductive health
- STD'S

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

- All about Variation
- Chromo
- Sex determination
- Inheritance of genes
- Mendel's Laws
- Diseases related with chromosomal defects

**MODULE – III: ENVIRONMENT AND SUSTAINABLE DEVELOPMENT****Time: 20 hrs****Marks:-08****Lesson 12: The Environment We Live In.****(Time allocation: 06 hours)**

- Biotic & Abiotic component
- Producers
- Consumers
- Food chain and food web
- Energy flow



- Energy pyramid
- 10 % law
- Biogeochemical cycles

### **Lesson 13: Environmental Issues**

**(Time allocation: 06 hours)**

- Environmental issues
- Human Made - Pollution (air, water, noise, soil), plastic and garbage production and its disposal, Deforestation, Urbanisation, depletion of fossil fuel, biomagnification, greenhouse effect, Ozone layer depletion, Global warming, urbanisation, radiation
- Natural – flood, cyclone, earthquake, forest fire, Tsunami, Land slide
- Sustainable Development

### **Lesson 14: Sustainable Development**

**(Time allocation: 04 hours)**

- Introduction
- Need and importance
- Examples of traditional technologies.
- History and efforts of Environmentalists

### **Lesson 15: Protecting the Environment (Time allocation: 04 hours)**

- Goals
- Efforts towards attaining these goals
- Role of various stake holders
- Cultural Scientific Practises
- Various agencies working for protection of environment
- IMD
- CPCB
- NGT
- NSDG
- Ministry of Environment

## **MODULE – IV: FOOD RESOURCES, HEALTH & HYGIENE**

**Time: 15 hrs**

**Marks:-05**

### **Lesson 16: Health and hygiene**

**(Time allocation: 09 hours)**

- Definition of Health as per WHO
- Signs of Social, mental and physical health
- Hygiene – personal & community
- Domestic Hygiene
- Balanced Diet
- Community health
- Advantages of Yoga
- Diseases
- Communicable and non-communicable
- Immunity
- Immunization

### **Lesson 17: Our Food Resources and Animal Wealth**

**(Time allocation: 06 Hours)**

- Development Of Agriculture
- Green, Blue and White Revolution
- The Principles and Methods of Crop Production
- Crop rotation /Mixed/ Multi cropping
- Improved agricultural practices
- Biofertilizers
- Protection and storage of the harvest
- Animal husbandry – milch, poultry, fishes (Marine, inland), aquaculture
- Tissue culture
- Genetic Engineering
- Food security
- Organic Farming

## **MODULE – V: MATTER AND MATERIAL**

**Time: 60 hrs**

**Marks:-18**

### **Lesson 18: Structure of Atom**

**(Time allocation: 06 Hours)**

- Discovery of electrons/ protons
- Daltons Atomic Theory
- Thomson’s Model and its drawbacks
- Rutherford’s model: Alpha ray scattering experiment
- Bohr’s Atomic Model
- Discovery of Neutrons
- Atomic mass & Mass number, Isotopes, Isobars
- Distribution of electrons in different shells
- Concept of Valency, Valence electron

### **Lesson 19: Matter in our surroundings**

**(Time allocation: 06 Hours)**

- State of matter- general idea about solid, liquid and gas
- Effect of temperature & pressure on state of matter
- Elements, compounds and mixtures

### **Lesson 20: Classification of Elements**

**(Time allocation: 07 Hours)**

- Need of classification.
- Kanad’s predictions
- Dobereiner’s triads
- Newland’s law of Octave
- Achievement & limitations of Mendeleev’s Periodic Table
- Modern Periodic Table
- Position of elements in M.P. T
- Trends in M.P.T (Valency, atomic size, metallic & non-metallic properties, electronegativity)

### **Lesson 21: Matter: Mixtures and Solutions**

**(Time allocation: 06 Hours)**

- Types of mixtures – Homogeneous and Heterogeneous  
What is a solution?
- Concentration of a solution
- Solutions (Preparation & Properties)
  - a) True Solution
  - b) Colloids
  - c) Suspension
- Separating the components of mixtures
- Physical and chemical changes

### **Lesson 22: Basics of Chemical Combination**

**(Time allocation: 07 Hours)**

- Law of Chemical Combinations:
  - a) Law of conservation of Mass
  - b) Law of constant proportion
- Writing a chemical formula
- Mole concept
- Molecular Mass
- Molar mass

### **Lesson 23: Chemical Reactions and Equations**

**(Time allocation: 07 Hours)**

- Chemical Equations (Writing and balancing)
- Types of Chemical Reactions
  - a) Decomposition
  - b) Displacement
  - c) Double displacement
  - d) Redox Reaction
- Corrosion
- Rancidity

## **Lesson 24: Acids, Bases and Salts**

**(Time allocation: 07 Hours)**

- Indicators
- The chemical properties of acids and bases.
- Reaction with Metals
- Reaction with Metal carbonates and Metal
- Reaction with Metallic oxides
- Behaviour of acids and bases in water
- Strength of acids and bases (pH)
- Importance of pH in everyday life (Acid rain, digestive system, tooth decay, self-defence by animals and plants)
- Electrolysis of brine
- Common salts in everyday life
- a) Sodium Hydroxide
- b) Bleaching Powder
- c) Baking Soda
- d) Sodium Hydrogencarbonate
- e) Washing Soda
- f) Plaster of Paris

## **Lesson 25: Metals and Non-metals**

**(Time allocation: 07 Hours)**

- Physical properties of Metals and Non-Metals
- Chemical properties of Metals and Non-Metals
- a) Reaction of Metals with water
- b) Reaction of Metals with Acids
  
- Properties of Ionic compounds
- Occurrence of Metals
- Extraction of Metals from their ores (in low, middle and top activity series)
- Refining of metals (Electrolytic refining)

## **Lesson 26: Carbon and its compounds**

**(Time allocation: 07 Hours)**

- Bonding in carbon- covalent bond (e.g., of Hydrogen, Oxygen and Nitrogen)
- Versatile nature of Carbon (catenation and tetravalency)
- Allotropes of carbon
- Saturated and unsaturated (Alkene, Alkyne) carbon compounds (chain, branches and ring)
- Homologous series
- Nomenclature
- Chemical properties of carbon compound  
(Combustion, oxidation, addition, substitution)
- Isomerism
- Properties of ethanol, ethanoic acid
- Soaps and detergents

## **MODULE –VI: MOTION AND FORCE**

**Time: 20 hrs**

**Marks:-06**

## **Lesson 27: Motion**

**(Time allocation: 08 Hours)**

- Motion
- Describing motion
- Motion along a straight line
- Distance and Displacement along with Graphical representation
- Uniform and non-uniform motion
- Speed and Velocity
- Average speed and average velocity
- Acceleration
- Graphical representation of motion
- Velocity -Time Graph
- Equations of Motion through graphical presentation
- Uniform Circular motion

**Lesson 28: Laws of Motion****(Time allocation: 06 hours)**

- Balanced and unbalanced forces
- Laws of Motion
- Inertia and Mass
- Conservation of Momentum

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

- Gravitation
- Universal law of Gravitation
- Importance of Universal law of Gravitation
- Motion of an object under gravity
- Mass, Weight
- Thrust, pressure, buoyancy
- Relative Density
- Archimedes' Principle

**MODULE –VII: ENERGY AROUND US****Time: 60 hrs****Marks:-18****Lesson 30: Sources of energy****(Time allocation: 07 hours)**

- What is energy?
- Sources of energy and their nature
- a) Fossil Fuels – coal, petroleum, Thermal power plant
- b) Hydro energy and Hydro power plant
- c) Wind energy and wind mill / park
- d) Solar Energy
- e) Tidal and wave energy
- f) Geothermal energy
- g) Nuclear energy
- h) Improvement in the technology for using conventional sources of energy (bio mass)

### **Lesson 31: Work and Energy**

**(Time allocation: 08 hours)**

- Work
- Scientific conception of work
- Work done by constant force

Different forms of Energy (Gravitational, electrical, magnetic, electromagnetic ,nuclear, chemical, sound,light)

- Mechanical (Potential and kinetic)
- Energy transformation and conservation
- Power: rate of doing work
- Commercial unit of energy

### **Lesson 32: Sound Energy**

**(Time allocation: 07 hours)**

- Production of sound
- Propagation of sound
- Amplitude, Wavelength, time period, frequency, speed, velocity
- Velocity of sound in different materials
- Structure of human Ear
- Range of hearing
- Noise Pollution
- Reflection of sound, ECHO, Reverberation
- Application of ultrasound, SONAR, RADAR

### **Lesson 33: Light & Its Reflection**

**(Time allocation: 08 hours)**

- What is light? (Brief intro in 1 or 2 lines)
- Reflection of light
- Terminology
- Spherical Mirrors
- Image formation and ray diagram
- Images formed by concave and convex mirrors
- Uses of Concave and convex Mirrors



- Sign convention for reflection by Spherical Mirrors
- Mirror formula and Magnification

### **Lesson 34: Refraction of Light**

**(Time allocation: 12 hours)**

- Refraction through rectangular glass slab
- The Refractive Index
- Atmospheric reflection
- Twinkling of stars
- Advanced sunrise and delayed sunset
- Refraction of light through Prism
- Dispersion of white light through glass Prism
- Scattering of light
  - a) Tyndall Effect
  - b) Blue colour of Sky
  - c) Colours at Sunset and Sunrise
- Refraction by spherical lenses
- Terminology
- Images formed by lenses using Ray diagram
- Sign Convention for Spherical lenses
- Lens formula and Magnification
- Power of a lens

### **Lesson 35: Human Eye**

**(Time allocation: 04 hours)**

- The human eye structure in detail
- Power of Accommodation
- Defects of vision and their correction (Myopia, Presbyopia, hypermetropia)

### **Lesson 36: Electrical Energy**

**(Time allocation: 07 hours)**

- Electric current and circuit
- Electric potential and potential difference
- Table for symbols
- Circuit diagram
- OHM'S Law
- Factors on which resistance of a conductor depends

- Resistance of a system of resistors
  - a) Series
  - b) Parallel combinations
- Heating effect of an electric current
- Practical Applications of heating effect of electric current
- Electric power

**Lesson 37: Magnetic Effects of Electric Current**

**(Time allocation: 07 hours)**

- Magnetic field and field lines
- Magnetic field due to current carrying conductor
  - straight
  - circular loop conductor
- Right hand thumb rule
- Magnetic field due to current in a solenoid
- Force on a current carrying conductor in a magnetic field
- Electric Motor
- Electromagnetic Induction
- Electric Generator
- Domestic Electric Circuit

# 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 aftereffects 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.

## **CURRICULUM 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.
- 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.
- Run through the chapters and make the project an interesting process. The amounts should emerge as more realistic and closer to reality.

## COURSE STRUCTURE

<b>Modules</b>	<b>No of Lessons</b>	<b>Study Hours</b>	<b>Marks allotted</b>
Module I	3	35	12
Module II	4	48	16
Module III	4	48	16
Module IV	2	28	09
Module V	2	28	09
Module VI	2	28	09
Module VII	2	25	09
Assignment			20
<b>Total*</b>	<b>19</b>	<b>240</b>	<b>100</b>

## **MODULE I: IDEA OF ACCOUNTANCY**

**Time: 35 hours**

**Marks:12**

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

**(Time allocation: 12 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 Accountancy**

**(Time allocation: 12 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 Accountancy**

**(Time allocation: 11 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 INTRODUCTIONAND BASIC CONCEPTS OF ACCOUNTANCY**

**Time: 48hours**

**Marks: 16**

### **Lesson4: Introduction to Accounting**

**(Time allocation: 12 hours)**

- Business Transactions
- Book-Keeping

- Meaning of Accounting and Accountancy
- Difference between Book-Keeping and Accounting
- Objectives and Importance of Accounting
- Branches of Accounting
- Basis of Accounting
- Users of Accounting Information
- Various Accounting Terms

### **Lesson 5: Accounting Concepts and Conventions**

**(Time allocation: 12 hours)**

- Accounting Concepts
- Business Entity Concept
- Money Measurement Concept
- Going Concern Concept
- Dual Aspect Concept
- Expense Recognition Concept
- Revenue Realization concept
- Meaning of Accounting Conventions
- Convention of Consistency
- Convention of Materiality
- Convention of Conservatism
- Convention of Full disclosure

### **Lesson 6: Accounting Equation**

**(Time allocation: 12 hours)**

- Accounting Equation
- Effect of Transactions on Accounting Equation
- Preparation of Accounting Equation

### **Lesson7: Double Entry System**

**(Time allocation: 12 hours)**

- Meaning of Double Entry System of Book-Keeping
- Advantages & Limitations of Double Entry System

- Meaning and Classification of Accounts
- Rules of Accounting (Debit and Credit)
- Source Documents
- Types of Accounting Vouchers

### **MODULE III: JOURNAL AND OTHER SUBSIDIARY BOOKS**

**Time: 48hours**

**Marks: 16**

#### **Lesson8: Journal**

**(Time allocation: 12 hours)**

- Meaning And Importance of Journal
- Process of Journalizing
- Classification of Journal

#### **Lesson9: Cash Book (Time Allocation: 12hours)**

- Meaning of Cash Book
- Cash Book: Types and its Preparation
- Bank Column Cash Book
- Petty Cash Book

#### **Lesson10: Ledger**

**(Time Allocation: 12 Hours)**

- Meaning And Purpose of Ledger
- Difference Between Journal and Ledger
- Posting of the Journal Entries into Ledger
- Balancing of Ledger and Accounts

#### **Lesson11: Purchase and Sales Book**

**(Time Allocation: 12 Hours)**

- Meaning of Purchases Book and Purchases Returns Book
- Meaning of Sales Book and Sales Return Book
- Preparation of Subsidiary Books
- Preparation of Journal Books



## **MODULE IV: BANK RECONCILIATION STATEMENT AND TRIAL BALANCE**

**Time: 28hours**

**Marks: 9**

### **Lesson12: Bank Reconciliation Statement**

**(Time allocation: 14 hours)**

- Bank Reconciliation Statement- Meaning and Need
- Causes of Differences Between Balance of Cash Book and Pass Book
- Preparation of Bank Reconciliation Statement

### **Lesson 13: Trial Balance and Accounting Errors**

**(Time Allocation: 14 Hours)**

- Meaning of Trial Balance
- Objectives of Preparing A Trial Balance
- Preparation of A Trial Balance
- Causes for the Disagreement of A Trial Balance
- Errors Disclosed by Trial Balance
- Errors not Disclosed by Trial Balance
- Process of Locating The Errors
- Limitations of A Trial Balance
- Suspense Account

## **MODULE V: DEPRECIATION, PROVISIONS AND RESERVES**

**Time: 28 hours**

**Marks: 9**

### **Lesson 14: Depreciation**

**(Time allocation: 14hours)**

- Meaning of Depreciation
- Causes of Depreciation
- Objectives of Depreciation
- Factors Affecting the amount of Depreciation
- Method of Charging Depreciation

- Merits and Limitations of Straight Line Method
- Diminishing Balance Method: Merits and Demerits
- Difference between Straight Line method and Diminishing Balance Method

**Lesson 15: Provisions and Reserves**

**(Time allocation: 14hours)**

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

**MODULE VI: PREPARATION OF FINANCIAL STATEMENTS**

**Time: 28 hours**

**Marks: 09**

**Lesson 16: Financial Statements (Without Adjustment)**

**(Time Allocation: 14 hours)**

- Meaning of Financial Statement
- Objectives of Financial Statements
- Classification of Financial Statements: Income Statement and Balance Sheet
- Preparation of Financial Statements

**Lesson 17: Financial Statements (With Adjustments)**

**(Time Allocation:14 Hours)**

- Need for Accounting Adjustments
- Types of Adjustments
- Preparation of Financial Statements

**MODULE VII: DIGITAL ACCOUNTING**

**Time: 25 hours**

**Marks:09**

**Lesson 18: Computers in Accounting**

**(Time Allocation: 12 Hours)**

- Computerized Accounting
- Need for Computerized Accounting
- Applications of Computer in Accounting
- Difference Between Manual Accounting and Computerized Accounting

**Lesson19: Accounting Software****(Time Allocation: 13 hours)**

- Accounting Software and Its Usage
- Commonly Used Accounting Software / Apps in business: Tally, Quick Book, Busy, Zoho Books, Margerp-9, Vyapar, My Book, Busy Accounting, Khata Book, My Bill book

# **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 fulfill 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 learner logical reasoning and careful analysis.

## **COURSE STRUCTURE**

<b>Modules</b>	<b>No of Lessons</b>	<b>Study Hours</b>	<b>Marks allotted</b>
Module I	3	34	12
Module II	2	25	10
Module III	2	25	10
Module IV	6	55	15
Module V	5	54	15
Module VI	2	25	10
Module VII	2	22	08
Assignment			20
<b>Total*</b>	<b>22</b>	<b>240</b>	<b>100</b>

## **MODULE I: IDEA OF BUSINESS STUDIES**

**Time: 34hours.**

**Marks: 12**

### **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: Knowledge and Wisdom in Business Studies**

**(Time Allocation: 10 hours)**

- What Business Studies is all About?
- Its Various Branches / Components and their Importance.
- Its Relationship with Other Subjects
- Scope

### **Lesson 3: Origin and Evolution of Business Studies**

**(Time Allocation: 12 Hours)**

- Trade and Commerce in India Starting from Barter System to Current 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)

## **MODULE II: INTRODUCTION TO BUSINESS**

**Time: 25hours.**

**Marks: 10**

### **Lesson4: Nature and Scope of Business**

**(Time allocation: 12 hours)**

- Human Activities
- Types of Economic Activities
- Meaning of Business
- Characteristics of Business

- Objectives of Business
- Responsibility towards Different Interest Groups (Stakeholders)
- Social Responsibility of Business
- Business Ethics
- Business and Environmental Pollution

**Lesson 5: Industry and Commerce**

**(Time Allocation: 13hours)**

- Classification of Business Activities
- Classification of Industries
- Commerce
- Aids to Trade
- Meaning of E-commerce
- Types of E-commerce
- Advantages and Limitations of E-commerce

**MODULE III: FORMS OF BUSINESS ORGANIZATION**

**Time: 25 hours.**

**Marks: 10**

**Lesson 6: Sole Proprietorship, Partnership & Hindu Undivided Family**

**(Time Allocation: 12 hours)**

- Meaning, Characteristics, Advantages and Limitations of Sole Proprietorship
- Meaning, Characteristics, Advantages and Limitations of Partnership Form of Business Organization
- Limited Liability Partnership (LLP)
- Meaning, Characteristics, Advantages and Limitations of Hindu Undivided Family Business

**Lesson7: Cooperative Societies and Joint Stock Companies**

**(Time Allocation: 13hours)**

- Meaning Characteristics, Types, Advantages and Limitations of Co-operative Society
- Meaning Characteristics, Types, Advantages and Limitations of Joint Stock Company



- Types of companies
- Difference between Private and Public Companies
- Government Company
- Multinational Companies
- Advantages of Multi National Companies
- Limitations of Multi National Companies

## **MODULE IV: SERVICE SECTOR**

**Time: 55hours**

**Marks: 15**

### **Lesson8:Transport Services**

**(Time allocation: 11 hours)**

- Meaning of Transportation
- Importance of Transport
- Modes and Means of Transport
- Land Transport
- National Highway Authority (NHAI)
- Road Transport
- Advantages of Road Transport
- Limitations of Road Transport
- Rail Transport
- Advantages of Rail Transport
- Limitations of Railway Transport
- Pipelines Transport
- Ropeway transport
- Water transport
- Air Transport
- Suitability of Modes of Transportation

### **Lesson9: Warehousing**

**(Time allocation: 08 hours)**

- Meaning of Warehousing
- Need for Warehousing

- Types of Warehousing
- Characteristics of Ideal Warehouse
- Functions of Warehouses
- Advantages of Warehousing

**Lesson 10: Communication Services**

**(Time allocation: 08 hours)**

- Meaning of Communication
- Importance of Communication
- Types of Communication
- Social Networking Sites
- Means of Communication
- Barriers to Effective Communication

**Lesson11:Postal and Courier Services**

**(Time allocation: 10 hours)**

- Meaning of Postal Services
- Nature of Postal Services
- Types of Postal Services (Mail Services, Remittance services, Banking Services, Insurance Services Other Postal Services, Specialized Mail Services, Mail Transmission, Postage for Mail Service)
- How Does Post Office Facilitate Business Transactions
- Importance of Postal Services
- Private Courier Services

**Lesson12: Banking Services**

**(Time allocation: 10 hours)**

- Meaning of Bank
- Difference between Banks and Money Lenders
- Types of Banks
- Functions of Commercial Banks
- Central Bank
- Bank Deposit Account

- Procedure for Operating Savings Bank Account
- Electronic Banking

(For project work)

- Types of Bank Deposit Accounts
- How to Open a Saving Bank Account

**Lesson13: Insurance Services**

**(Time allocation: 08hours)**

- Nature of Business Risks
- Meaning of Insurance
- Importance of Insurance
- Types of Insurance
- Principles of Insurance

**MODULE V: BUYING, SELLING AND DISTRIBUTION**

**Time: 54 hours**

**Marks: 15**

**Lesson14: Purchase and Sale**

**(Time allocation: 10 hours)**

- Meaning of Purchase and Sale
- Purchase and Sale on Cash and Credit Basis
- Methods of Sale ( on Line, off Line )
- Modes of Payment
- Modes – ATM etc )

**Lesson 15: Channels of Distribution**

**(Time allocation: 08hours)**

- Meaning of Channels of Distribution
- Types of Channels of Distribution
- Wholesalers and Retailers
- Selection of Distribution

**Lesson 16: Retail Trade****(Time allocation: 14 hours)**

- Meaning of Retail Trade
- Types of Retail Trade
- Meaning of Large Scale Retail Trade
- Forms of Large Scale Retail Trades
- Departmental Stores
- Super Bazaar
- Difference between Departmental Store and Super Bazaar
- Multiple Shops
- Malls
- Outlets
- Non Store Retailing

**Lesson17: Advertising****(Time allocation: 10 hours)**

- Meaning of Advertising
- Importance Advertising
- Modes of Advertising ( Print, Electronic, Social, You Tube )
- Suitability of Modes of Advertising

**Lesson18: Sales Promotion and Personal Selling****(Time allocation:12 hours)**

- Meaning of Sales Promotion
- Importance
- Tools of Sales Promotion
- Personal Selling
- Meaning of Personal Selling
- Essential Elements of Personal Selling
- Importance of Personal Selling
- ( Project work : Qualities of sales person)

## **MODULE VI: CONSUMER AWARENESS**

**Time: 25 hours**

**Marks: 10**

### **Lesson19:Rights and Responsibilities of Consumers**

**(Time allocation: 10 hours)**

- Who is a Consumer
- Meaning of Consumerism
- Rights of Consumers
- Responsibilities of Consumers (Precautions to be Taken by Consumers for E Business )

### **Lesson20: Consumer protection**

**(Time allocation: 15hours)**

- Meaning of Consumer Protection
- Problems Faced by Consumers
- Need for Consumer Protection
- Parties to Consumer Protection
- Legal Protection to Consumers
- Jurisdiction of Consumer Courts
- Procedure forRedressal of Consumer Grievances
- Role of NGOs

## **MODULE VII: CAREER OPPORTUNITIES IN BUSINESS**

**Time: 22 hours**

**Marks: 08**

### **Lesson 21: Choosing a Career**

**(Time allocation: 12 hours)**

- Concept of Career
- Importance of Choosing a Career
- Career Avenues in Business
- Wage Employment
- Self Employment
- Difference between Wage Employment and Self Employment
- Possible Areas of Self Employment
- Preference for Self Employment over Wage Employment
- Qualities Required for Success in Self Employment

## **Lesson22: Entrepreneurship**

**(Time allocation:10 hours)**

- Meaning
- Importance of Being an Entrepreneur
- Qualities of a Successful Entrepreneur
- Functions of Entrepreneur
- Setting up of a Small Business Enterprise
- Initiatives of Government for Entrepreneurial Development)

# ECONOMICS

## RATIONALE

Economic education is significant 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. Economics is a widely respected field of study and is complementary to Accounting and Finance subjects as it offers similar career opportunities for learners. The subject plays a significant role in the international affairs.

It plays a vital role in our everyday life. 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.

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.

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

Considered a social science, economics uses scientific methods to understand how scarce resources are exchanged within society. An economics course will give 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.

## **CURRICULUM OBJECTIVES**

The aims of teaching economics at the 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 that subject and encourage them to pursue it as a career.
- Make students understand some basic economic concepts and develop economic reasoning that learners can apply to their daily life as citizens, workers and consumers;
- Enable learners to realize their role in the country building and sensitize them to the national issues;
- Impart knowledge and thought of India for developing national pride;
- 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;
- Enhance the ability to communicate with others and express their views clearly and logically in the terms used in economics ;
- Be able to understand and analyze the data
- Develop a positive attitude towards the learning of economics



## COURSE STRUCTURE

Modules	No of Lessons	Study Hours	Marks allotted
Module I	3	45	15
Module II	5	55	20
Module III	6	50	15
Module IV	6	55	20
Module V	2	35	10
Assignment			20
Total*	22	240	100

### MODULE I: IDEA OF ECONOMICS

**Time: 45hours**

**Marks: 15**

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

**(Time allocation: 15 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: 15hours)**
- 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: 15 hours)**

- 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: INTRODUCTION OF STATISTICS IN ECONOMICS**

**Time: 35hours**

**Marks:-10**

- **Lesson 4: Collection and Presentation of Data** **(Time allocation: 15 hours)**
  - What is Statistics and its Application in Economics (Meaning And Features Of Data)
  - Importance of Data In Economics
  - Methods of Data Collection
  - Presentation of Data

### **Lesson 5: Analysis Of Data: Measures of Central Tendency** **(Timeallocation: 20hours)**

- Meaning of Central Tendency
- Purpose and Functions of Averages
- Arithmetic Mean, Median and Mode as Measure of Central Tendency
- Calculation of Arithmetic Mean, Median and Mode in Different Types of Series
- Precautions in Using Central Tendency

## **MODULE III: MICRO ECONOMIC THEORY**

**Time: 50hours**

**Marks: 15**

### **Lesson 6: Economic Activities**

**(Time allocation: 06hours)**

- Production
- Consumption
- Capital Formation
- Circular Flow of Income

### **Lesson 7: Central Problems of an Economy and Solutions**

**(Time allocation: 08 hours)**

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 8: Demand by Consumers in The Market (Time allocation: 09 hours)**

- Meaning of Demand
- Difference between Demand and Desire
- Individual and Market Demand
- Factors Affecting Market Demand

**Lesson 9: Supply by Producers in the Market**

**(Time allocation: 09hours)**

- Meaning of Supply
- Stock and Supply
- Factors Affecting Individual Supply
- Individual Supply Schedule of a Commodity
- Law of supply and Supply Curve
- Market supply of a Commodity
- Market Supply Schedule of a Commodity
- Factors Determining Market Supply

**Lesson 10: Cost, Revenue and Profit**

**(Time allocation: 09 hours)**

- Concept of Production Function
- Different Technologies of Production
- Total Product, Average Product and Marginal Product
- Law of Diminishing Marginal Product of Labor
- Production Process
- Meaning and Types of Cost (Total, Average and Marginal)
- Concept of Revenue and Cost (Total, Average and Marginal)
- Need to Calculate Cost and Revenue in Production

**Lesson 11: Price Determination in the Market (Time allocation: 09hours)**

- Meaning of Equilibrium Price of a Good
- Determination of Equilibrium Price in the Market
- Role of Government in Price Determination

**MODULE IV: THE INDIAN ECONOMIC DEVELOPMENT**

**Time: 55 hours**

**Marks: 20**

**Lesson 12: Economic Resources of India**

**(Time allocation: 10 hours)**

Natural Resources

- Types of Natural Resources

Human Resources

- Quality of Human Resources

(Concept of Human Capital, Education, Health, Demographic Dividend)

**Lesson 13: Sectors of the Indian Economy (Time allocation: 10hours)**

- Sectors by Economic Activities (Primary, Secondary and Tertiary Sectors in India)
- Organized and Unorganized sectors
- Public and Private Sectors

**Lesson 14: History of Indian Economic Development**

**Indian Economy before 1950**

**(Time allocation: 08 hours)**

- Ancient, Medieval and during British Rule
- Features of Indian Economy at the Time of Independence

**Lesson 15: Indian Economy: 1950 – 2014 (Time allocation: 08 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 16: Indian Economy Since 2014 (Time allocation: 12hours)**

Special Mention of the Popular Reforms:

- Niti Aayog
- Demonetization
- Goods and Services Tax (GST)
- Aatm Nirbhar Bharat
- Make in India
- Digital India
- Skill India
- Smart India
- Swatch Bharat Abhiyan
- PM Jan Dhan Yojana
- Mudra Bank Yojana
- Kisan Vikas Patra
- Stand Up India Scheme etc

## **MODULE V: ECONOMIC ISSUES AND CHALLENGES**

**Time: 55hours**

**Marks:20**

### **Lesson 17: Impact of Poverty and Unemployment on the Economy**

**(Time allocation: 09 hours)**

- Meaning and Causes of Poverty and Unemployment

- Anti-Poverty Measures or Employment Generation Programmes

**Lesson 18: Food Security in India (Time allocation: 09 hours)**

- Meaning of Food Security (Availability, Affordability, Accessibility and Safety of Food for all People)
- Role of Public Distribution System

**Lesson 19: Personal Finance and Entrepreneurship in India (Time allocation: 10 hours)**

- Importance of Personal Finance
- Sources of Personal Finance
- Role of Banking and Insurance
- Entrepreneurship Development
- Government Efforts Towards Skill Development
- Government Efforts Towards Skill Development

**Lesson 20: Infrastructural Development (Time allocation: 09 hours)**

- Education
- Health
- Energy
- Information and Communication (Digital India)

**Lesson 21: Environment and Sustainable Development (Time allocation: 09 hours)**

- Need for Environmental Protection, Preservation and Conservation (Relate with Economic Development)
- Environmental Problems
- Meaning of Sustainable Development and List of Sustainable Development Goals
- How Can We Achieve Sustainable Development?

**Lesson 22: Blue Economy (Time allotted: 09 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



# HOME SCIENCE & HUMAN ECOLOGY

## RATIONALE

Home Science & Human Ecology is a vibrant field of study that covers home economics as well as other aspects such as sociology, psychology, community living, nutrition, and textiles. Home Science 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. Home Science will equip learners with the ability to tackle these difficult life situations.

Home Science & Human Ecology 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 Home Science & Human Ecology. 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.

Home Science & Human Ecology 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 Home Science & Human Ecology Education are to develop in learners:

- an understanding of the scope and significance of Home Science & Human Ecology;
- 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 V Modules and 19 lessons. The study hours and marks allotted are as follows.

<b>Module</b>	<b>No of Lessons</b>	<b>Study Hours</b>	<b>Marks allotted</b>
Module I	3	45	16
Module II	4	45	16
Module III	5	60	16
Module IV	2	45	16
Module V	5	45	16
Assignment			20
<b>Total*</b>	<b>19</b>	<b>240</b>	<b>100</b>

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

## **MODULE I: IDEA OF HOME SCIENCE & HUMAN ECOLOGY**

**Time: 45 hours**

**Marks: 16**

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

**(Time allocation: 15 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 Home Science & Human Ecology**

**(Time allocation: 15 hours)**

- Concept of Home Science & Human Ecology.
- Various Branches of Home Science and Human Ecology and their importance.
- Relationship of Home Science and Human Ecology with other disciplines.
- Contribution of Home Science and Human Ecology in other disciplines.
- Scope of Home Science and Human Ecology.
- Home Scientists as the agents of change.

### **Lesson 3: Origin and Evolution of Home Science & Human Ecology**

**(Time allocation: 15 hours)**

- Introduction to Home Science & Human Ecology.
- Origin and Evolution of Home Science in India.
- Home Science & Human Ecology in different Countries.
- Fields of Home Science.
- Mis-concepts associated with Home Science.
- Some myths and facts.

## **MODULE II: HUMAN GROWTH & DEVELOPMENT**

**Time: 45 hours**

**Marks: 16**

### **Lesson 4: Concept of Growth & Development**

**(Time allocation: 10 hours)**

- Meaning of Development.
- Growth and Development.
- Principle of Growth and Development.
- Hereditary and Environment.
- Environmental Factors.

### **Lesson 5: Development during Prenatal to Childhood**

**(Time allocation: 12 hours)**

- Stages in Human Life Span.
- Maturation and Learning.
- Development during Infancy.
- Early Childhood (2-6 years).
- Late Childhood (6-12 years).

### **Lesson 6: Development during Adolescence**

**(Time allocation: 13 hours)**

- Puberty and Adolescence.
- Changes in Different Areas of Development.
- Physical and Motor Development.
- Cognitive Development.
- Language Development.
- Issues and Concerns of Adolescents.
- Life Skills for Adolescents.

## **Lesson 7: Care Needs of the Family and their Inter-relationships**

**(Time allocation: 10 hours)**

- Typical Characteristics of members in the Family and Care Needed.
- An Infant and the Care it Needs.
- A 2–6-year Child and the Care S/He needs.
- Role of Television, Movies, Books, Music, Computer, Toys, etc.
- Child training method or parenting style.
- A School going Child and the Care S/He needs.
- Adolescents and the Care they need.
- Elderly in the Family and the care they need.
- Factors that Influence the Growth of Healthy Relationships in Family.

## **MODULE III: FOOD AND BALANCED MEAL**

**Time: 60 hours**

**Marks: 16**

### **Lesson 8: Food and its Constituents**

**(Time allocation: 15 hours)**

- Nutrients and Nutrition.
- Definition of Nutrition.
- Nutrients: Functions and sources.
- Water.
- Roughage.
- Deficiency Diseases.
- Deficiency of Proteins and Carbohydrates.
- Deficiency of Fat.
- Vitamins.
- Iron Deficiency.
- Need for eating a variety of foods.

- Conservation of Nutrients.

### **Lesson 9: Meal Planning**

**(Time allocation: 15 hours)**

- Balanced Diet.
- Meal Planning: Meaning and Importance.
- Factors affecting Meal Planning.
- Common Fads and Fallacies about Foods.
- Points to be kept in mind while Planning Meals.
- Modification of Family Meals.

### **Lesson 10: Food Preservation**

**(Time allocation: 10 hours)**

- Causes of Food Spoilage.
- Meaning and Importance of Preservation.
- Hygienic Handling of Foods in a clean kitchen.
- Principles of Food Preservation.
- Storage of Food.
- Methods of Preserving Foods at Home.

### **Lesson 11: Health**

**(Time allocation: 10 hours)**

- Concept of Health.
- Aspects of Health.
- Rules for Maintaining a Good Health.

### **Lesson 12: Childhood Diseases**

**(Time allocation: 10 hours)**

- Definition of term 'disease'
- Mode of Transmission of Communicable disease
- Immunity
- Immunization

- Other ways of Prevention of Diseases
- Common Communicable Diseases Children Suffer from
- Common Childhood Diseases
- Minor Recurring Ailments in Children
- Care given to Children for Minor Ailments

## **MODULE IV: CLOTHING FOR THE FAMILY**

**Time: 45 hours**

**Marks: 16**

### **Lesson 13: Care and Maintenance of Fabric**

**(Time allocation: 25 hours)**

- Meaning and Need for Laundering.
- General Principles of laundering.
- Selection of Proper Laundry Methods.
- Stain Removal.
- Methods of Stain Removal.
- Storing of Different Fabrics.
- Finishes given to the Fabrics.
- Finishes given with Color.
- Let's Learn to Dye.

### **Lesson 14: Quality Check of Apparel and Linen**

**(Time allocation: 20 hours)**

- Meaning and Need for Quality in Apparel and in Household Textile Items.
- Indicators that decide Quality in Apparel and in other textile Items.
- Points to be considered in selection of textiles for household Use.
- Selection of Readymade clothes and tailor-made clothes.
- Reading of Labels on Clothes and Linen.

## **MODULE V: RESOURCES AVAILABLE TO THE FAMILY & RIGHTS OF A CONSUMER**

**Time: 45 hours**

**Marks: 16**

### **Lesson 15: Resources Management**

**(Time allocation: 09 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 16: Management of Time and Energy**

**(Time allocation: 09 hours)**

- Making of Time plan.
- Sample Time Plan.
- Advantages of making a Time Plan.
- Ways to Save Time.
- Dovetailing.
- Management of Energy.

### **Lesson 17: Managing Income**

**(Time allocation: 09 hours)**

- Family Income and its Sources.
- Expenditure and Recording Expenditure.
- Need for Managing Income.
- Spending Plan.



- Recording Expenditure.
- Saving and Investment.
- Savings.
- Need to Save Money.
- Investment.
- Investing Money.
- Basis for Selection of Institutions for Investing.

**Lesson 18: Rights & Responsibilities of Consumer** (Time allocation: 09 hours)

- Consumer.
- Malpractices of Manufacturers and Traders.
- Problems faced by a Consumer.
- Consumer Education.
- Wise Buying.
- Consumer Rights and Responsibilities.
- Consumer Aids.

**Lesson 19: Housing and Household Equipment** (Time allocation: 09 hours)

- Importance of Home.
- Functions of a Home.
- Activities and Need for Specific Space.
- Space Organization.
- Home Environment.
- Care and Maintenance of House.
- Cleaning different Surfaces.
- Role of Color and Accessories.
- Household Equipment

# **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:

- To impart knowledge on theoretical, and practical implication of psychology.
- To enlighten the significance of psychology in course of life development.
- To build the awareness on relationship between health and environment.
- To develop the insight on psychology in relation to social perspective.
- To acquaint the research concept and significance in social sciences.

## COURSE STRUCTURE

The current curriculum comprises of V Modules and 23 lessons. The study hours and marks allotted are as follows:

Module	No. of Lessons	Study Hours	Marks allotted
Module 1	5	55	15
Module 2	8	80	28
Module 3	5	51	15
Module 4	4	44	18
Module 5	1	10	04
(Assignment/Practical/Project Work) *			20
<b>Total</b>	<b>23</b>	<b>240</b>	<b>100</b>

### MODULE I: IDEA OF PSYCHOLOGY

**Time: 55 hrs.**

**Marks: 15**

**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

## **Lesson 2: Knowledge and Wisdom in Psychology**

**(Time allocation: 11 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**

**(Time Allocation: 11 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: 11 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 *PanchKosha* Theory,
- Psychology, Inwardness and *Sadhana*
- Types of Ancient Indian *Vedic* and *Non-VedicSadhna*
- Psychology and *Darshan*
- Psychology and the Concept of *Purushartha* and three *Gunas*
- Psychology and *Dharma*

**Lesson 5: Psychological Methods and Research****(Time Allocation: 11 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: 80 hrs.****Marks: 28****Lesson 6: Human Growth and Development****(Time allocation: 10 hours)**

- What is Developmental Psychology
- Goals and Objectives of Developmental Psychology
- Concept of Growth and Development
- Characteristics of Growth and Development
- Classification of growth and development

- Principles of development
- Factors Affecting Human Growth and Development
- Role of heredity and environment in the process of Growth and Development
- Nature vs. Nurture

**Lesson 7: Biological Perspective in Psychology**

**(Time allocation: 10 hours)**

- Behaviour and the Biological Basis
- Development of the Brain
- Neuron
- Nerve Impulse
- Nervous System
- Endocrine System
- Heredity and Genes

**Lesson 8: Understanding Human Life Span**

**(Time allocation: 10 hours)**

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

**Lesson 9: Growth and Development from Prenatal to Childhood**

**(TimeAllocation: 10 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** (TimeAllocation: 10 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**

(TimeAllocation: 10 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: 10 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 *Nishkama Karma* and *Karma Yoga* 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; *Bhakti Yoga* in the *Gita*

### **Lesson 13: Moral and Spiritual Development**

**(Time Allocation: 10 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: 51 hrs.**

**Marks: 15**

### **Lesson 14: Environment**

**(Time allocation: 10 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: 10 hours)**

- Functions of the Mind - Thinking, Feeling and Willing
- Sensation (with details on Sensory organs), Perception, Intuition, Attention, Visualisation
- 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: 10 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: Learning**

**(Time allocation: 10 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 *Bhagavad Gita*, the Buddhist concept of Learning,

- Learning and Performance

**Lesson 18: Differently abled Children**

**(Time allocation: 11 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: 44 hrs.**

**Marks: 18**

**Lesson 19: *Yoga* for Health and Well Being**

**(Time Allocation: 11 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 20: Ramifications of Mental Health**

**(Time Allocation: 11**

**hours)**

- Mental Health – Concept and Importance
- Intellectual Health
- Emotional Health
- Social Health

- Moral Health
- Spiritual Health

**Lesson 21: Meditation for Health and Well Being (Time Allocation: 11 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 22: Positive Psychology and Well Being (Time allocation: 11 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: 10 hrs.**

**Marks: 04**

**Lesson 23: Personality – An Introduction (Time Allocation: 10 hours)**

- What is Personality; Nature of Personality; Types of Personality
- Vedic and Buddhist Perspective of Personality
- Issues in Personality – Nature vs. Nurture; Heredity vs. Environment; Stability and Change; Connections with Health and Work; Self-concept; Influence of Cultural Perspectives
- Personality Assessment Techniques – Projective and Objective

**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](http://www.bosse.ac.in)**