

## 2.6.1. Program Outcomes, Program Specific Outcomes and course outcomes for all program.

### ➤ Programme Outcome B.Sc.

- ✚ Student develop a strong foundation in the fundamental concepts of physical sciences, chemical sciences, life sciences and mathematical sciences
- ✚ Students can work skillfully in a laboratory and field setting.
- ✚ Students can employ the scientific method to generate new information.
- ✚ Students can synthesize a cogent argument in the language of science.
- ✚ Students can have enough knowledge to pursue further study.
- ✚ To develop the scientific temper and research attitude.
- ✚ To develop and to apply scientific attitude in day to day life.

### ➤ Programme Outcome B.Com.

- ✚ After completing three years for Bachelors in Commerce (B.Com) program, students would gain a thorough grounding in the fundamentals of Commerce and Finance.
- ✚ The commerce and finance focused curriculum offers a number of specializations and practical exposures which would equip the student to face the modern-day challenges in commerce and business.
- ✚ The programme offer a number of value based and job oriented courses ensures that students are trained into up-to-date. In advanced accounting courses beyond the introductory level, affective development will also progress to the valuing and organization levels.
- ✚ Having basic knowledge of important business laws, financial accounting and basic principles of economics.

### ➤ Programme Outcome B.A.

- ✚ After completing bachelors in arts (B.A.) program the students acquire knowledge in the field of social sciences, literature and humanities which make them sensitive and sensible enough.
- ✚ The B.A. graduates will be acquainted with the social, economic, historical, political and ideological thinking.
- ✚ The program also empowers the graduates to appear for various competitive examinations or choose the post graduate programme of their choice.
- ✚ The B. A. program enables the students to acquire the knowledge with human values, moral ethics framing the base to deal with various problems in life with courage and humanity.
- ✚ The students will be ignited enough to think and act over for the solution of various issues prevailed in the human life to make this world better than ever.
- ✚ Programme provides the base to be the responsible citizen.

## ➤ **Programme Specific Outcomes of B.A.**

- ✚ Use Received Pronunciation.
- ✚ Know about Standard English.
- ✚ Use Accent, intonation in speech.
- ✚ Know about modern English structure.
- ✚ Identify the word classes, clause elements, type of sentences, etc.
- ✚ Students will have knowledge of speech mechanism.
- ✚ Transcribe the words and sentences with appropriate accent in phonetic transcription.

## ➤ **Course Outcome**

After studying the course Reading Literature for semester I and semester II students will be able to

- 1) Understand the structure features of different poetical types such as sonnet, lyric, ode and ballad, elegy.
- 2) Understand the structure and features, and types of drama such as tragedy, comedy, tragicomedy.
- 3) The students will be able to understand various aspects themes, plots, characters of novel, drama, tragedy, comedy.
- 4) The students will develop their taste for literature and its judgment.
- 5) The students will be able to realize creative language and art.
- 6) To make the students aware of basic concepts of literature.

### **B.A II Year English (Optional)**

#### **Course (Paper No. V, VII) Literature in English**

**(1550-1750) semester III IV - (1750-1900) semester III IV**

- 1) Distinguish and analyze different literary forms like essay, mock epic, drama novel etc.
- 2) To introduce students' to appropriate literary strategies to read literature
- 3) Multiple interpretations of the texts.
- 4) To pinpoint how far literary language deviates from ordinary language.
- 5) To understand the literary forms of Poetry, Ballad, and Romantic Poetry, Dramatic Monologue, Prose, Play, Novel in 18<sup>th</sup> and 19<sup>th</sup> cent.

- 6) To understand the theme, style, characterization of Oscar Wilds play and to understand plot, setting characters country side background in the novels of Thomas Hardy.

### **B.A III Year (Optional English)**

#### **Semester V, VI The course of B.A III Year grouped into two sections.**

One is subsidiary and other is main. This subsidiary and main comprises of four papers to be studied in two semester.

#### **Paper No. IX and XIII Twentieth cent. English Literature Semester – V**

- 1) To understand how the literature of modern period relates to the important trends of 20<sup>th</sup> century.
- 2) To understand the students to Modern English Literature as production of the age.
- 3) To comment on the theme of G.B Shaw's plays, its subject matter characters plot and techniques.
- 4) To understand plot, setting, characters, techniques in the novels of D. H. Lawrence.
- 5) To explore the multiple interpretations from the prescribed texts.

#### **Paper X and XIV introduction to Literary Criticism and Terms.**

##### **Semester V, VI**

- 1) To understand the students with the literary terms and introduce them the various streams in literary criticism and develop the skills for literary evaluation.
- 2) To discuss the classical Greek critics of literature.
- 3) To understand the text, tragedy, poetry conception of literature with critical insight.
- 4) Learn the terms related to various genres of literature.
- 5) Cultivate an understanding of major critical and interpretive methods.

#### **Paper XI and XV Indian writing in English**

1. Help the students to approach and appreciate Indian Literature in English and make them see its place among world Literature in English.
2. Understand and to evaluate the theme, plot, characters in the plays of Girish Karand and Vijay Tendulkar.
3. Understand the background of Indian English Literature.
4. To understand the Indianness in the novels of Raja Rao, U.R. Anant murti.

## Paper XII and XVI Project work

### On history of English Literature

1. Make the students able to understand the background of English Literature and help them to write on its development.
2. Understand the background and development of English Literature.
3. Understand the aspects of Research Methodology
4. Students have to face Viva-voce examination related to project work.

## हिंदी विभाग

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### ➤ Program Outcomes Hindi

1. हिंदी भाषा के माध्यम से राष्ट्रीय एकता एवं सामाजिक प्रतिबद्धता की भावना विकसित करना.
2. राष्ट्रीय प्रेम, सामाजिक उत्तरदायित्व, वैज्ञानिकता आदि मूल्यों के प्रति ध्यान आकर्षित करना.
3. राष्ट्रीय मूल्य, नैतिक मूल्य तथा सामाजिक मूल्यों के प्रति आस्था का निर्माण करना.
4. राष्ट्रभाषा हिंदी का प्रचार-प्रसार करना.
5. छात्रों की सर्जनात्मक एवं अनुसंधानात्मक दृष्टि का विकास करना.

### ➤ Program Specific Outcomes Hindi

1. हिंदी भाषा तथा साहित्य के प्रति छात्रों की रूचि को बढ़ाना.
2. साहित्य के विविध विधाओं से परिचित कराना.
3. कविता, कहानी, एकांकी, साक्षात्कार, रेखाचित्र आदि विधाओं के माध्यम से छात्रों में भावात्मक विकास करना.
4. संक्षेपण, पल्लवन, पत्र लेखन, रिपोर्ट लेखन आदि लेखन कौशलों के विकास के माध्यम से छात्रों की विचार क्षमता तथा कल्पना शक्ति को बढ़ावा देना.
5. छात्रों में पारिभाषिक शब्दावली, मानक लिपि एवं मानक भाषा से संबंधित में महत्त्व को स्पष्ट करना.

## B.A. Hindi

## Course Outcomes

### ➤ सामान्य हिंदी (S.L. II) (बी.ए.,बी.कॉम.,बी.एस्सी.)

1. प्रस्तुत अध्ययन से मानवी संवेदनाओं का विकास होता है।
2. हिंदी के प्रमुख लेखकों का परिचय मिलता है।
3. हिंदी के कहानी साहित्य का परिचय मिलता है।
4. छात्रों के भाषा कौशल का विकास होता है।
5. छात्रों में हिंदी भाषा के महत्त्व के साथ ही व्याकरणिक सजगता का निर्माण होता है।

### ➤ प्रश्नपत्र १ उपन्यास साहित्य

1. छात्रों की साहित्यिक अभिरूचि का विकास होता है।
2. मानवीय जीवन मूल्यों का विकास और उनके प्रति आस्था का निर्माण होता है।
3. हिंदी उपन्यास साहित्य का परिचय होता है।
4. बाल मनोविज्ञान का परिचय होता है।
5. वाचन, लेखन और भाषा कौशलों का विकास होता है।

### ➤ प्रश्नपत्र २ नाटक साहित्य

1. हिंदी नाटक साहित्य और हिंदी की नाट्यपरंपरा का परिचय होता है।
2. छात्र व्यावसायिक नाटकों से परिचित होते हैं।
3. ऐतिहासिक चरित्रों का परिचय होता है।
4. छात्रों को युद्ध की अपेक्षा शांति महत्त्व का ज्ञान होता है।
5. भारतीय किसानों की समस्याएँ और नवयुवकों के कर्तव्यों का परिचय होता है।
6. शिक्षा के महत्त्व और आत्मनिर्भरता के संबंध में छात्रों को प्रेरणा मिलती है।

### ➤ प्रश्नपत्र ३ हिंदी गद्य साहित्य

1. हिंदी कहानी और व्यंग्य साहित्य का परिचय मिलता है।
2. मानवीय जीवन मूल्यों और संवेदनाओं का परिचय मिलता है।
3. साहित्य आस्वादन और मूल्यांकन क्षमता का विकास होता है।
4. हिंदी साहित्य की गद्य की विधाओं का परिचय होता है।

### ➤ प्रश्नपत्र ४ एकांकी साहित्य

1. एकांकी और नाटक साहित्य के भेद का ज्ञान मिलता है।
2. हिंदी एकांकी साहित्य के उद्भव और विकास से छात्र परिचित होते हैं।
3. मानवीय संवेदनाओं और मूल्यों की समझ विकसित होती है।
4. ऐतिहासिक और समस्यामूलक एकांकीओं से परिचय होता है।
5. छात्र महिला लेखन और महिला लेखिकाओं से परिचित होते हैं।

### ➤ सामान्य हिंदी (S.L. III & IV) (बी.ए., बी.कॉम., बी.एस्सी.)

1. हिंदी के आधुनिक गद्य साहित्य के प्रातिनिधिक रचनाओं से परिचय होता है।
2. अत्याधुनिक इलेक्ट्रॉनिक माध्यमों का परिचय होता है।
3. व्यावहारिक प्रयोजनमूलक तथा संप्रेषणमूलक व्यावसायिक हिंदी भाषा से परिचय होता है।
4. आम जीवन में हिंदी भाषा के व्यावहारिकता को छात्रों को ज्ञान मिलता है।
5. हिंदी साहित्य की विविध विधाओं से परिचय होता है।
6. कार्यालयीन हिंदी का ज्ञान मिलता है।
7. रेडियोवार्ता लेखन, समाचार लेखन, मीडिया के विविध आयाम, हिंदी भाषा की व्यावसायिक उपयोगिता, बैंकों में हिंदी वैश्वीकरण के परिप्रेक्ष्य में हिंदी भाषा का महत्त्व का परिचय मिलता है।

### ➤ प्रश्नपत्र ५ कथेत्तर गद्य साहित्य

1. हिंदी साहित्य के कथेत्तर गद्य साहित्य के विभिन्न विधाओं का परिचय होता है।
2. हिंदी साहित्य के कथेत्तर गद्य विधाओं के लेखकों का परिचय होता है।
3. मानवीय मूल्य एवं जीवन मूल्यों के प्रति आस्था का निर्माण होता है।

### ➤ प्रश्नपत्र ६ प्रयोजनमूलक हिंदी

1. हिंदी भाषा के प्रयोजनमूलक रूप का परिचय होता है।
2. हिंदी भाषा की व्यावहारिकता का ज्ञान मिलता है।
3. हिंदी भाषा का महत्त्वता की जानकारी मिलती है।
4. हिंदी के राष्ट्रीय और आंतरराष्ट्रीय स्वरूप का ज्ञान होता है।
5. आधुनिक विज्ञान में हिंदी की उपयोगिता और व्यावहारिकता का ज्ञान मिलता है।

### ➤ प्रश्नपत्र ७ आधुनिक हिंदी कविता

1. हिंदी पद्य साहित्य के उद्भव और विकास का ज्ञान मिलता है।
2. हिंदी कविता के प्रति अभिरूचि निर्माण होती है।
3. मानवीय संवेदनाओं का विकास में सहायता मिलती है।

4. नारी जीवन की संवेदनाओं का परिचय मिलता है।
5. आधुनिक जीवन का बाजारीकरण, अर्थसत्ता, समस्याओं से छात्र परिचित होते हैं।

### ➤ प्रश्नपत्र ८ प्रयोजनमूलक हिंदी

1. हिंदी भाषा तथा राजभाषा हिंदी के विविध रूपों का परिचय होता है।
2. प्रयोजनमूलक भाषा तथा अनुवाद की भूमिका का परिचय होता है।
3. हिंदी भाषा के प्रयोजनमूलक और व्यावहारिक रूप का परिचय होता है।
4. आधुनिक तंत्र में हिंदी की उपयोगिता का आकलन होता है।

### ➤ प्रश्नपत्र ९ प्रादेशिक साहित्य

1. प्रादेशिक भाषाओं के साहित्य का परिचय मिलता है।
2. प्रादेशिक भाषाओं के लेखकों का परिचय मिलता है।
3. भारतीय साहित्य से छात्र परिचित होते हैं।
4. भारतीय समाज व्यवस्था और साहित्य से छात्र परिचित होते हैं।

### ➤ प्रश्नपत्र १० आदि तथा मध्यकालीन हिंदी साहित्य का इतिहास

1. हिंदी साहित्य के इतिहास तथा आरंभिक काल का परिचय मिलता है।
2. हिंदी साहित्य के लेखन स्रोत एवं परंपरा का परिचय मिलता है।
3. हिंदी साहित्य के आदिकाल, भक्तिकाल तथा रीतिकाल की सामाजिक, सांस्कृतिक तथा राजनीतिक पृष्ठभूमि का परिचय मिलता है।
4. आदिकाल तथा भक्तिकाल और रीतिकाल के साहित्यकारों का परिचय छात्रों को होता है।
5. छात्र साहित्य आस्वादन और अभिरूचि से परिचित होता है।
6. छात्रों में जीवनमूल्यों के प्रति आस्था निर्माण होती है।

### ➤ प्रश्नपत्र ११ साहित्यशास्त्र

1. छात्र को साहित्य चिंतन परम्परा का ज्ञान होता है।
2. साहित्यालोचन के संबंध में जानकारी मिलती है।
3. छात्र में साहित्य सृजन के संस्कार होते हैं।
4. साहित्यसृजन के लिए छात्र प्रेरित होता है।
5. छात्र साहित्य का शास्त्र की तरह चिंतन, आकलन एवं मूल्यांकन करता है।
6. छात्र में साहित्य पठन की प्रेरणा वृद्धिगत होती है।
7. साहित्य के तत्त्व, हेतु तथा प्रयोजन से छात्र का परिचय होता है।
8. शब्दशक्ति, रस, छंद तथा विविध अलंकारों का परिचय होता है।

9. छात्रों को साहित्य की विभिन्न विधाओं का ज्ञान होता है।
10. छात्र का परिपूर्ण रूप से विकास होता है। मानवीय मूल्यों के प्रति जागरूकता निर्माण होती है।

### ➤ प्रश्नपत्र 92 एवं 96 प्रकल्पकार्य

1. छात्र में पठन-पाठन और लेखन कौशल का विकास होता है।
2. छात्रों के आलोचनात्मक क्षमता का विकास होता है।
3. अनुसंधानात्मक दृष्टि का विकास होता है।
4. छात्र को प्रकल्प लेखन एवं प्रस्तुतीकरण का दृष्टि होता है।

### ➤ प्रश्नपत्र 93 मध्यकालीन काव्य

1. छात्र भक्ति आंदोलन का परिचय होता है।
2. रीतिकालीन साहित्य एवं उनकी संवेदनाओं से छात्र अवगत होता है।
3. कविता के माध्यम से उस काल की सांस्कृतिक संवेदना तथा स्थिति का ज्ञान होता है।
4. भक्तिकालीन तथा रीतिकालीन सामाजिक, सांस्कृतिक पृष्ठभूमि का ज्ञान होता है।
5. छात्र में चिंतन, आकलन, मूल्यांकन आदि की क्षमता का विकास होता है।

### ➤ प्रश्नपत्र 98 आधुनिक हिंदी साहित्य का इतिहास

1. हिंदी साहित्य के आधुनिक काल से छात्र परिचित होता है।
2. आधुनिक काल की सामाजिक, सांस्कृतिक पृष्ठभूमि तथा साहित्यिक प्रवृत्ति से छात्र को परिचित कराया जाता है।
3. आधुनिक काल के गद्य तथा पद्य लेखन से छात्र को अवगत कराया जाता है।
4. हिंदी साहित्य में जो नए-नए प्रयोग हुए हैं उनसे परिचय तथा उनका मूल्यांकन करना छात्र को अवगत होता है।
5. हिंदी साहित्यकारों की भारतीय स्वतंत्रता आंदोलन में जो भूमिका रही है उससे तथा क्रांतीकारी साहित्य के छात्र प्रेरित होती है।

### ➤ प्रश्नपत्र 99 साहित्यशास्त्र

1. साहित्य चिंतन तथा परम्परा से छात्र परिचित होता है।
2. छात्र में सृजन क्षमता का विकास होता है।
3. साहित्य की विविध विधा, रस, अलंकार, छंद, आलोचना आदि विविध साहित्यिक अंगों से छात्र का परिचय होता है।
4. साहित्य के कला पक्ष से छात्र अवगत होता है।
5. छात्र में साहित्यलोचना की दृष्टि विकसित होती है।

**मराठी विभाग**



## ➤ Course Outcome

### बी.ए./बी.कॉम./बी.एस्सी.प्रथम वर्ष

#### ➤ गद्य - पद्य व उपयोजित मराठी (S.L.)

- विद्यार्थ्यांना साहित्य प्रकाराची माहिती होते.
- विद्यार्थी मराठी उपयोजना च्या एकूण प्रकाराविषयी जिज्ञासू वृत्तीने जाणून घेतात.
- विद्यार्थ्यांना गद्य-पद्य अंतरातील ओळख होते.
- विद्यार्थ्यांमध्ये साहित्यविषयक अभिरुची निर्माण होते.
- विद्यार्थ्यांना मराठी शुद्धलेखनाच्या नियमांची माहिती होते.

### बी.ए.प्रथम वर्ष ऐच्छिक

#### ➤ काव्यात साहित्य-I (Opt.)

- विद्यार्थ्यांना साहित्यातील निरनिराळ्या साहित्य प्रकारांची माहिती होते.
- विद्यार्थ्यांमध्ये काव्य साहित्याविषयी अभिरुची निर्माण होते.
- काव्य साहित्याविषयी विद्यार्थ्यांना ओळख होते.

#### ➤ नाट्यात्म साहित्य-II (Opt.)

- विद्यार्थ्यांना नाट्य साहित्याची ओळख होते.
- नाट्य साहित्य विषयी विद्यार्थ्यांमध्ये अभिरुची निर्माण होते.
- विद्यार्थ्यांना नाट्य प्रकाराविषयी चे ज्ञान होते.

#### ➤ कथात्म साहित्य-III (Opt.)

- कथा या वाङ्मय प्रकाराविषयी विद्यार्थ्यांना ओळख होते.
- कथा साहित्याच्या प्रकाराविषयी चे ज्ञान विद्यार्थ्यांना होते.
- विद्यार्थ्यांना कथेतील मतितार्थ समजण्यास मदत होते.

#### ➤ मुद्रित माध्यमांसाठी लेखन कौशल्य-IV (Opt.)

- विद्यार्थ्यांमध्ये माध्यमाविषयी जिज्ञासा निर्माण होते.

- विद्यार्थी विविध माध्यमाविषयी माहिती घेऊन समृद्ध होतात.
- वृत्तपत्रे आणि त्यांचे स्वरूप विद्यार्थ्यांच्या लक्षात येते.
- विद्यार्थ्यांना बातमी लेखन, स्तंभलेखन, मुलाखत लेखन, संवाद लेखन, जाहिरात लेखन या लेखन प्रकारांची माहिती होते.

### बी.ए./बी.कॉम./बी.एस्सी.द्वितीय वर्ष

#### ➤ गद्य पद्य व उपयोजित मराठी (S.L.)

- विद्यार्थ्यांना गद्य-पद्य साहित्यप्रकाराविषयी माहिती होते.
- विद्यार्थ्यांमध्ये साहित्यविषयक अभिरुची निर्माण होते.
- विद्यार्थी संगणक आणि इंटरनेटच्या माहितीमुळे जागृत होतो.

### बी.ए.द्वितीय वर्ष (ऐच्छिक)

#### ➤ आधुनिक मराठी वाङ्मयाचा इतिहास( इ.स. 1800 ते इ.स.1920) -V (Opt.)

- मराठी वाङ्मयाच्या इतिहासाचे कालखंड विद्यार्थी समजून घेऊन तयार होतो.
- आधुनिक मराठी वाङ्मयाची पार्श्वभूमी विद्यार्थ्यांना माहिती होते.
- विद्यार्थ्यांना आधुनिक वाङ्मयातील विविध साहित्य आणि सामाजिक दृष्टी प्राप्त होते.
- विद्यार्थ्यांना विविध धार्मिक चळवळी माहिती होण्यास मदत होते.
- विद्यार्थ्यांना आधुनिक वाङ्मयातील कादंबरी वाङ्मयाच्या कालखंडातील विकासाच्या टप्प्याविषयी विषयी माहिती होते.

#### ➤ दृकश्राव्य माध्यमांसाठी लेखन कौशल्य-VI (Opt.)

- विद्यार्थी दृक-श्राव्य माध्यमासाठी लागणाऱ्या लेखन कौशल्य चा अभ्यास करतो.
- दृक-श्राव्य या दोन वेगवेगळ्या माध्यमांचे निराळेपण विद्यार्थी समजून घेतो. इलेक्ट्रॉनिक मीडियातील दूरचित्र वाहिन्या, नभोवाणी, संगणक हे घटक विद्यार्थी ज्ञात करून घेतात.
- साहित्याच्या विविध प्रकाराविषयी माहिती विद्यार्थ्यांना होते.
- विद्यार्थी माध्यमांचे महत्त्व लक्षात घेतो.
- साहित्याचे मध्यांतर करण्यासाठीचे लेखन कौशल्य विद्यार्थ्यांमध्ये निर्माण होते.

### बी.ए.तृतीय वर्ष

#### ➤ भारतीय साहित्य विचार

- विद्यार्थ्यांना साहित्याच्या स्वरूपा विषयाचे आकलन होते.
- विद्यार्थी साहित्य प्रयोजने माहिती करून घेतो.
- साहित्याच्या निर्मिती प्रक्रियेविषयी विद्यार्थ्यांना माहिती होते.
- साहित्यातील शब्द शक्ति विषयी विद्यार्थी ज्ञात होतो.
- **भाषाविज्ञान**
- विद्यार्थ्यांना भाषेचे विज्ञान असते हे माहित होते.
- विद्यार्थी भाषेचे स्वरूप समजून घेतो.
- भाषेतील स्वन व स्वनिम विचार ह्या संकल्पना विद्यार्थी समजून घेतात.
- भाषे बाबतचे समज-गैरसमज विद्यार्थ्यांना कळू लागतात.
- **मध्ययुगीन मराठी वाङ्मयाचा इतिहास( प्रारंभ ते 1600)**
- वाङ्मयाच्या इतिहासाचे कालखंड विद्यार्थ्यांना ज्ञात होतात.
- तत्कालीन सामाजिक,सांस्कृतिक स्थितीगती विषयी माहिती विद्यार्थ्यांना होते.
- महानुभाव,वारकरी संप्रदायाची ओळख विद्यार्थ्यांना होते.
- विद्यार्थ्यांना बहमनी कालखंडातील साहित्याविषयी माहिती होते.
- **प्रकल्प कार्य**
- विद्यार्थ्यांच्या वाचन,लेखन कौशल्याचा विकास होतो.
- विद्यार्थ्यांची समीक्षणात्मक दृष्टी विकसित होते.
- विद्यार्थ्यांच्या संशोधनात्मक वृत्तीला चालना मिळते.
- विद्यार्थी चौफेर वाचन करण्यास प्रवृत्त होतो.

## **Department of Sociology (B.A)**

### ➤ **Program outcomes.**

1. Student will demonstrate knowledge of core sociology concepts.

2. Student will demonstrate knowledge of how to use theory to conceptualize a sociological problem.
3. Student will demonstrate the ability to communicate sociological knowledge to others.
4. Student will develop an ability to use social scientific research methods to address sociological questions.
5. Student will develop the knowledge, skill and attitude necessary to be engaged member of the community.
6. Student will possess analytical skills in areas such as policy analysis, administration analysis and problem solving.

➤ **Course Outcome.**

1. Identify and apply sociological concepts and theories to understand social phenomena.
2. Critically evaluate explanations of human behaviour, social phenomena and social processes locally and globally.
3. Apply social scientific Principles to understand the social world.
4. Evaluate the quality of social scientific data.
5. Rigorously analyse social scientific data Demonstrate the ability to understand, interpret and analyse qualitative and quantitative data.
6. Communicate in a clear and coherent manner in both written and oral communication.
7. Use sociological knowledge to inform public understanding and social debates.

## **Department of Political Science**

### **CO. PSO**

➤ **Pol-101 basic concept of political science**

- To help the students know the concept of state and its organic state divine theory and nature of elements.
- To study the development of the concept of rights state background ` ` of political history.
- To enable students to understand basic concept in political science.
- To analyze transitions in societal system the structure and order of the system

➤ **Pol-102 government and politics of Maharashtra**

- To examine the government and non-government response
- Establish pattern of the Maharashtra state

- To explain structure and function of state government in India

➤ **Pol-103 Basic concept of political science**

- to create awareness among students about democracy
- to understand the concept of welfare state
- help the students Know direct and indirect democracy

➤ **Pol- 104 governments and politics of Maharashtra**

- To provide solution to social problems
- To help the student to know the history of Panchayat Raj system and their function
- To orient the student about ideology and program of political parties in Maharashtra

➤ **Pol-105 Indian government of politics**

- to understand basic principles of India constitution their sources and constitutional provisions
- To study various constitutional instruction in India

➤ **Pol-106 international relations**

- to explain the behavior of individual entrepreneurs and firms rather than world politics
- to understand basic principles of India foreign policy national power and national interest
- the study has important implications for international law and international relation generally

➤ **Pol-107 Indian government and politics**

- explain structure of union government and process in India
- to every well now students about party system and electoral reform in India
- to understand the framework of India supreme Court.

➤ **Pol-108 international relations**

- explain the role of United Nation in collective secretary
- to aware about some major issues in internationalism
- to study the various international and regional organization

➤ **Pol-109 Indian political thinkers**

- To understand the contribution of modern political thinkers
- To study the religious political social and cultural thoughts of Indian political thinkers
- It has been a problem in cultural transformation how best the cultural transformation of Indians into non-Indians

➤ **Pol-110 Western political thinkers**

- To understand the ideas of Western political thinkers and its relevance
- To understand the views of Western political thinkers
- To explain the views of Plato Aristotle on various political concept and how he is father of political science

➤ **Pol-111 political ideologies**

- To study the development and features and critically examine of the political ideologies
- To relate the theoretical discussion and analysis of ideologies to the transformation introductions ideology and crisis of modernity
- To understand relevance of political ideology in contemporary period.

➤ **Pol-112 Indian political thinkers**

- To know the contribution of modern political thinkers
- To know of ideas of Maulana Azad views on religion and politics
- To critically evaluate MN Roy radical humanism
- To understand BR Ambedkar thoughts on democracy economy and society.

➤ **Pol-113 Western political thinkers**

- To understand theory of utilitarianism
- To study the thoughts of JS mil I
- To know ideas of social contract theory.

➤ **Pol-114 political ideologies**

- To study the development and features and critically examine of the political ideologies.
- To study the ideology of fascism
- To study the development and features of the anarchism

- To explain the ideology of feminism and environmentalism

## Department Of History

### Course Outcomes

#### ➤ Paper 1-Shivaji & his time (1630-1707)

- 1) Student able to understand between the meaning of local history, National history and international history.
- 2) Understand the background and the inspiration behind the establishment of Swarajya.
- 3) Explain the reasons behind Chhatrapati Shivaji's early conflicts with the regional's and outsiders.
- 4) Know about the importance of grand condition of Chhatrapati Shivaji.

#### ➤ Paper 2 History of modern Maharashtra (1818-1905)

- 1) Identify the importance and the legally of freedom movement.
- 2) Distinguish the detail account of British raj as well as its cover all impacts on the Indian society.
- 3) Evaluate renalsance and Religious and social reforms movement in India.
- 4) Students have understood institutional experiments in socio-religious reformism

#### ➤ paper 3) History of Marathas (1707--1818)

- 1) Understand the formation of welfare state during the Maratha's rule.
- 2) Students will be able to examine the difference between fact and fiction of Maratha India.
- 3) To introduce the students to the regional history of Marathas.
- 4) Understand the central and provincial administration of Marathas under the few peshwas.

#### ➤ Paper 4) Twentieth century Maharashtra (1905-1960)

- 1) Understand the contribution of Maharashtra in India national movement.
- 2) Understand the importance of sanyukt Maharashtra Movement.
- 3) Understand early political awakening in India freedom struggle.

4) Identify the social institutions of late 19th century

➤ **Paper 5) History of early India (up to 300 BC)**

1) Identify the various types of sources of ancient India history.

2) Identify the importance and the legacy of Vedic period.

3) know about the political development in India during Maurya Empire

➤ **Paper 6) History of Delhi Sultanate (1200-1526).**

1) Understand early difficulties of sultan's in India.

2) Know about the political and administration of the sultanat rul.

3) Identify the development and unique legacy of art and architecture during the sultanat period.

4) Understand the aspects of fiscals and monetary system under the sultanate.

➤ **Paper 7) History of India (300BC--650)**

1) Perceive about the political development in India during saks, Kushans, Satvahan and Gupta Empire.

2) Understand about the political development in India during Vardhan, Dynasty and Vakatak Empire.

3) Understand about the caves, temples, painting and fabric that period.

4) Understand about sources material for the study literary and Archaeological

➤ **Paper 8) History of Mughal India**

1) Understand the administrative set up to Mughals.

2) Grasp the some aspects of fiscals and monetary system of Mughals.

3) Understand about Establishment of Mughals Empire in Indian under the leadership of Babare.

4) Understand about the importance and development in administrative system during the Mughal period

➤ **Paper 9) Hisroriography**

1) Identify the meaning, Nature and scope of history.

2) Grasp the details of various types of sources and its importance in history writing.

3) Understand about the Research process in histological research.



4) Critically analyze the process of Development of historiography since ancient times to modern times.

➤ **Paper 10) History of Indian National movement (1885--1947)**

1) Identify the Indian National movement to modern Indian time.

2) Understand the events which lead to the growth of Nationalism in India.

3) Acquaint himself with major events of the freedom struggle under the leadership of Mahatma Gandhi.

4) Explain the contribution of Revolutionaries, left movement, and Indian National Army.

➤ **paper 11 Women's struggle in modern India**

1) Identify the major issues and conception of women's problems in 19th century in India.

2) Identify the child marriage, Sati tradition in India.

3) Understand the struggle for women's education in India.

4) Understand the women's and social struggle in India.

5) Understand women's law in India

➤ **Paper 12 project work**

1) Students get information about forts.

2) Students gets information about caves.

3) Student understand local history.

4) Student get information about historical coins.

5) Students get information about museums, saints, social workers, inscriptions, Peasant movement, Hyderabad freedom struggle etc.

➤ **Paper 13. Field of History**

1) Know about the meaning and object Archaeology and material science a brief history of Indian.

2) Apply the theory of Historicism as a professional skills in various fields of intellect.

3) Acquire basic knowledge of history in various carriers that is Museum, historical tourism, conservation and preservation.

4) Understand about the historical tourism and its importance in grasping historical facts

➤ **Paper-14 Landmark of the History of modern World.**

1) Understand about the new imperialism of world countries.

2) Grasp about the French revolution in France.

3) Grasp about the industrial revolution in England.

4) Grasp about the Second World War.

➤ **Paper15 Glimpses of the history of Marathwada (up to 1948 AD).**

1) Understand political history of Marathwada a brief survey.

2) Understand art and architecture of temple architecture of forts in Marathwada.

3) Socio -Economical and cultural history of under the Nizamstatein in Marathwada.

4) Understand Hyderabad freedom struggle. Role of all India schedule cast federation in Hyderabad freedom struggle.

➤ **Paper 16) Project work.**

1) Students get information about Forts.

2) Students acquire knowledge about historical monuments.

3) Students get information about historical coins.

4) Students understand local history.

## **DEPARTMENT OF ECONOMICS**

### **COURSE OUTCOME**

The study of Economics provide valuable knowledge for making decision in everyday life. Economics is the study of how societies, governments, businesses, households and individuals allocate the scarce resources. Economics also looks at production, investment, taxation and how people spend and save money. It also study of how people decide to use resources on an individual and a collective basis.

➤ **Micro Economics:**

This paper is essential for students to understand the meaning and scope of micro economics, demand and supply function of market, the theory of consumer behaviour and analysis of market equilibrium.

➤ **Indian Economy:**

- ❖ This paper provides knowledge about Indian Economy.
- ❖ Student able to understand current problems in Indian Economy. Poverty, unemployment, inequality, population etc.
- ❖ This paper is beneficial for various competitive Exams.

➤ **Price Theory:**

- ❖ Student knows about theory of production, cost and revenue analysis, forms of market and factor pricing theory.
- ❖ It helps to understanding various components regarding price determination under various types of market.

➤ **Money and Banking in India:**

- ❖ It gives the knowledge of banking structure, money and capital market in India.
- ❖ It's also essential for student to understand the function and methods of credit control of RBI.

➤ **Macro Economics:**

- ❖ It helps understand the basic theoretical framework underlying the field of Macro Economics
- ❖ It's helps us understand the functioning. of a complicated modern Economic system.

➤ **Economics of Development:**

- ❖ The Paper provides knowledge about concept of economic development and various theory of economic development.
- ❖ Student know about sectoral view of development and planning.

➤ **Public Finance:**

- ❖ Learn the nature, meaning and scope of public finance.
- ❖ This paper it provide detailed information to student about the fiscal police, revenue and public expenditure.

➤ **Statistical Method:**

- ❖ This paper is to train to student to use the techniques of statistical analysis.

- ❖ Student get knowledge data collection presentation and analysis.
- ❖ It helps student to get job in research institutes, statistics department etc.
- **International Economics:**
  - ❖ Student will be able to analyse and apply the trade theories and theories of tariff, and different policies for balance of payment.
  - ❖ The paper give knowledge of national and international trade.
- **Agricultural Economics:**
  - ❖ It providing knowledge of role and importance of agriculture in economic development and technology in agriculture.
  - ❖ It provides detail views of the process of agricultural development in country since independence
- **History of Economic Thought:**
  - ❖ This paper is related to basic ideas of classical, new classical marginalist Economist.
  - ❖ Student understand the basic Economic ideas of various economic thinker of the world.
  - ❖ It develop the skill in students to develop new economic theory.
- **Research methodology:**
  - ❖ This paper provide knowledge about social Science research and importance of social research, research design, data collection and presentation of data.
  - ❖ It helps to develop research oriented mind of the student.
- **Industrial Economics:**
  - ❖ Student awares about need and importance of industry and industrial development.
  - ❖ Its gives the knowledge of industry, industrial organization ownership structure and various types of industry
- **Economy of Maharashtra:**
  - ❖ Student know the basic features of the economy of Maharashtra.
  - ❖ Student able to understand the feature and problems related to agriculture.
  - ❖ It provide knowledge about infrastructure and industrial development of Maharashtra.
- **Project Work:**
  - ❖ By preparing project of different topics and beyond the curriculums students gain about research.

- ❖ It enhanced the research oriented analytical view of student.

## **DEPARTMENT OF COMMERCE**

### ➤ **Programme Specific Outcomes of B.Com.**

- Students are able to gain a through basic knowledge in the Account, Economics, Management, Finance, Legal aspects etc.
- Understand application of knowledge of commerce in business, service sector, industry marketing, finance, entrepreneurship, accounting development.
- To develop among the students the qualities of an entrepreneurship also to give the ideas about the modern business strategies.
- Capability of the students to make decision at personal and professional level will increase after completion of this course.
- Students can independently start up their own business.
- Learner further move towards research in the field of commerce.

## **Course Outcomes**

### ➤ **Financial Accounting**

Students are acquiring various types of conceptual & practical knowledge of Financial Accounting. And understand the meaning of book-keeping and accountancy, classification, and golden rules of Account.

### ➤ **Business Mathematics and Statistics**

To impart knowledge in order to improve Logical Reasoning, Ability & Interpretation, Application of various statistical and Mathematical Tools and Techniques in making logical and scientific decisions in Business Operations.

### ➤ **Business and Industrial Economics**

This course is meant to acquaint with the principles of Business Economics as are applicable in business. To analyze and interpret charts and graphs. Also to understand basic theories, concepts of micro economics and their application.

➤ **Computer Application in Business**

Provides basic understanding of how communication occurs in computing environment with knowledge of internet and network.

➤ **Entrepreneurship Development**

Entrepreneurship and innovation minors will able to create value. The students feel motivated to be an entrepreneur and students are able to the administrator of a business.

**Class B.com S.Y**

➤ **Corporate Accounting**

An understanding of the accounting requirements for a corporate group and familiarity with the theory underlying the methods used to account for inter-company investments.

➤ **Cost Accounting**

Enables students regarding various decision Making process of costing. Imparts knowledge about different types of Methods of costing to control cost in effective way.

➤ **I.T Application in Business**

To aims at better and greater knowledge about technology little more addition in existing skills taken away with such a huge excel in computer knowledge that, immense in commerce and business world. It sharpens different computer languages.

➤ **GST (Goods and Services Tax) Account**

In the changing scenario of taxation system this course aims at enhance ability about existing knowledge. It provides fruitful and indispensable reform happened in past so many years.

➤ **Marketing Management**

Understand the important of promotion and distribution function in the entire marketing management system.

➤ **Human Resource Management**

This course dealt in process and various methods of human resource development and strategy to make over potential and excellent man powers in working field.

**Class B.com T.Y**

➤ **Advance Financial Accounting**

Create awareness among the students about advance accounting issues and Practices Understand nature and functions of advance financial accounting

➤ **Management Accounting**

Explain the application of management accounting and the various tools used.

➤ **Auditing**

Auditing this course aims at imparting knowledge about the principles and methods of auditing and its applications.

➤ **Business Regulatory Framework**

To acquaint students with basic Concepts, Terms, Provisions and Applications of Business Laws.

➤ **Computerized Accounting**

To benefit the students to work with well-known accounting software e.g. Tally ERP.9 To enable students to process and record the business transactions and manage the accounts information using software. To Equip students "know -how" of GST functionality using e.g. Tally software.

➤ **Rural Development**

To face the rural reality during the rural living and learning experience and also this course aims to developing the understanding of students regarding the basic theoretical concepts of rural development and agribusiness for future entrepreneurial venture.

➤ **Advertising and Salesmanship**

To understand the concept of Salesmanship and its types and values of salesman. And also know the impact of advertising to customer and importance and types of online advertising.

### **Programme Specific Outcomes**

- PSO1 - Provide high quality education in physics which provide wide range of carrier opportunities in Research & Industry.
- PSO2- Provide the support and guidance to student to encourage them to take responsibility of research and development of country.
- PSO3 - Promote research in physics.
- PSO4- Generate and maintain an environment in research and project.
- PSO5 - Develop an ability to analyze, evaluate and synthesize information.
- PSO6 - Develop experimental and investigate scientific skills.
- PSO7 - Develop an appreciation of the possibilities and limitations associated with science and scientists.
- PSO8 - Develop the skill to observe and study natural phenomena. PSO9- Study and improve use of technology in society.

### **Course Outcomes**

#### **B.Sc. F.Y. (sem 1) Paper -1**

- **Course Code-PHY-101- Mechanics, Properties of Matter and Sound**
  - CO1: Study about Mechanics using Newton's laws of gravitation.
  - CO2: Introduction of Elasticity and study of elastic materials.
  - CO3: Understanding Viscosity and Surface tension of liquids.
  - CO4: Study ultrasonic sound and its applications and Acoustics.

#### **B.Sc. F.Y. (sem I) Paper - II**

- **Course Code - PHY-10 -Heat and Thermodynamics**
  - CO1: Introduce about Thermal Conductivity of different materials. CO2: Learn about Real gases and Transport Phenomena.
  - CO3: Understand Thermodynamics and thermodynamical processes.



- CO4: Introduction to entropy and Thermodynamical relations.

#### **B.Sc. F.Y. (sem II) Paper - IV**

##### ➤ **Course Code - PHY-104-Geometrical And Physical Optics**

- CO1: Review about Geometrical Optics and optical instruments.
- CO2: Study Interference phenomena of light and defferent experiments.
- CO3: Concept of diffraction of light and its types.
- CO4: Polarization of light and its applications.

#### **B.Sc. F.Y. (sem II) Paper - V**

##### ➤ **Course Code-PHY-105-Electricity and Magnetism**

- CO1: Need of Vector Algebra in electricity and magnetism. CO2: Study Electrostatics and related laws.
- CO3: Introduction of Magnetostatics and related laws and applications.
- CO4: Concept of Transient curren and study of LCR.
- Three theory periods per paper per week per semester
- . Three practical periods per paper per week per semester

#### **B.Sc. S.Y. (sem III) Paper - VII**

##### ➤ **Course Code-PHY-201-Mathematical, Statistical Physics and Relativity.**

- CO1: Study about Differential and Ordinary differential equation. CO2: Introduction of Statistical basis and Classical statistics, and distribution laws. CO4: Theory of Relativity, relativistic trnsformations and equations.
- CO3: Understanding of Quantum Statistics and concept of Fermi Gas..

#### **B.Sc. S.Y. (sem III) Paper - VIII**

##### ➤ **Course Code-PHY-202-Modern And Nuclear Physics**

- COI: Introduce about Photoelectric Effect and its applications.

- CO2: Learn about X-Rays, Bragg's law, X-ray spectrum and its applications.
- CO3: Understand Nuclear Forces and Nuclear Models. CO4: Types of Particle accelerators and Detectors.

#### **B.Sc. S.Y. (sem IV) Paper - XI**

##### ➤ **Course Code - PHY-205- General Electronics**

- CO1: Review Semiconductor, its types and uses.
- CO2: Study transistor biasing, its types, Amplifiers and its applications.
- CO3: Concept of Oscillator and Multivibrator and their types.
- CO4: Introduce about Modulations, its types and demodulation.

##### ➤ **B.Sc. S.Y. (sem IV) Paper - XII Course Code-PHY-206-Solid State Physics**

- CO1: Introduction to crystal structure, crystal lattices, unit cell and types.
- CO2: Understand bonding and Band theory of solids.
- CO3: Study Thermal Properties of solids.
- CO4: Overview of Free electron theory of metals and transport properties.

- Three theory periods per paper per week per semester Six practical periods per paper per week per semester

#### **B.Sc. T.Y. (sem V) Paper - XV**

##### ➤ **Course Code - PHY-301- Classical and Quantum Mechanics**

- CO1: Study about Classical Mechanics and Physics behind any object in day today life.
- CO2: Introduction of Quantum Mechanics and Plank's Quantum Theory
- CO3: Understanding of dual nature of particle and matter waves. CO4: Derive Schrodinger Equation and its applications.

#### **Program - B.Sc. T.Y. (sem V) Paper - XVI**

##### ➤ **Course Code-PHY-302- Electrodynamics**

- CO1: Introduce about Electrostatics and Electrodynamics.

- CO2: Learn about time varrieg field and its related equations. CO3: Understand nature and parameters of electromagnetic waves.
- CO4: Interaction of Electromagnetic waves with matter.

#### **Program - B.Sc. T.Y. (sem VI) Paper - XIX**

##### ➤ **Course Code - PHY-305- Atomic and Molecular Physics and Laser.**

- CO1: Review atomic structure and different atomic models.
- CO2: Introduce Vector Atom Model, and its Applications.
- CO3: Concept of molecular spectroscopy and different types of molecular spectra.
- CO4: Introduce Laser, its types and applications.

#### **Program B.Sc. T.Y. (sem VI) Paper - XX**

##### ➤ **Course Code - PHY-306-Non-conventional energy sources and Optical fiber.**

- CO1: Need of Non-conventional energy sources and its types and uses.
- CO2: Study Solar energy and solar photovotaic system.
- CO3: Introduction and Classification of Optical fiber.
- CO4: Overview of fiber cables and different fiber fabrication techniques.
- Three theory periods per paper per week per semester
- Six practical periods per paper per week per semester

**Name of the Department : DEPARTMENT OF CHEMISTRY**

**Course:- B.Sc. (Chemistry)**

#### ➤ **Programme Outcomes**

1. To provide a broad foundation in chemistry.

2. To expose the students to a breadth of experimental techniques using available resources. The student will understand the importance of the Periodic Table, how it came to be, and its role in organizing chemical information.
3. The student will learn the laboratory skills needed to design, safely conduct and interpret chemical research.
4. Students be able to appreciate the applications of chemistry in day to day life and explore new areas of Chemistry and Allied fields of Science and technology.
5. Knowledge of for safe handling of chemicals in chemical laboratory.
6. Helps in understanding the causes of environmental pollution and can open up new methods for environmental pollution control.
7. Acquires the ability to synthesize, separate and characterize compounds using laboratory and instrumentation techniques.
8. Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of chemical reactions.

➤ **Course Outcomes**

**First Year First Semester**

**Paper-I Inorganic Chemistry**

1. Getting familiar about elements their structure and properties.
2. Periodic table and its trends as well as applications.
3. Compound forming abilities of element from S & P Block element.

**Paper-II Organic Chemistry**

1. Bond & their Stability govern to different effects, types of reagent, reactions & Intermediates.
2. Isomerism, Optical activities, configuration and nomenclature of Geometric isomers.
3. Types of Hydrocarbons(Alkanes, Alkenes, Arenes, Alkyl & Aryl Halides) their properties and Chemical reactions.

**Paper-III Lab Course**

1. Preparation of solution of different Normality and their Standardization.
2. Separation of Acid & Bases from Binary Mixtures.

3. Getting familiar about different Physical instruments (Eudiometer, Viscometer, Staganometer, Calorimeter, and Spectrophotometer) and their applications.

## **Second Semester**

### **Paper-IV Physical Chemistry**

1. Uses and Application of mathematical Concepts in Chemistry.
2. States of Compounds their further Classification, Different Laws (Boyles, Charles, Grahams)
3. Rate of reactions, Factors influencing Rate of reactions and Characteristics of reactions.

### **Paper-V Inorganic Chemistry-II**

1. Structure & Bonding in Nobel Gases their Properties.
2. Bonding in In-Organic Compounds and its explanation by VSEPR & VBT Theories.
3. Radioactive elements & Radioactivity, Properties of Alpha, Beta & Gama rays, Carbon Dating

### **Paper-VI Lab Course-II (Organic Qualitative Analysis & Organic Estimation)**

1. Identification of Nature/ Functional group/ element/ Derivative/Physical constant Of different Organic compounds.
2. Estimation of Organic compounds like Phenol, oxalic & Acetic Acid.

## **Second Year**

### **Third Semester**

#### **Paper-VII Organic Chemistry**

1. Study of Alchol & Phenols their Physical and Chemical Properties including Different chemical reactions.
2. Study of compounds containing functional groups Aldehyde, ketones, Carb.Acids with their physical and chemical properties.
3. Nitrogen containing compounds their acidity and basicity along with different chemical reactions.

#### **Paper-VIII Physical Chemistry**

1. Formulate the first law of thermodynamics for a closed systems and arrange the change in energy in the closed systems via heat and work transfer

2. Apply the first law of thermodynamics. Know the statistical thermodynamics and various partition functions. Know the statistical thermodynamics and various partition functions,
3. thermodynamics to the open systems. assess thermodynamic applications using second law of thermodynamics, assess thermodynamic applications using second law of thermodynamics
4. Define chemical equilibrium. Calculate the equilibrium constant from concentration data. Define and discuss Le Chatelier's Principle and Solve a variety of chemical equilibrium problems

#### **Paper-IX Lab Course-III (Physical Chemistry & Inorganic Chemistry)**

1. Study the kinetics of reactions.
2. Gravimetric Estimation of different in-organic Compounds.(Ni-DMG, Ba Chromate etc)
3. Complexometric titrations to Estimate Different metals by using EDTA Solution and Indicators.

#### **Fourth Semester**

##### **Paper-X Inorganic Chemistry**

1. Study of Transition elements and their Coordination Compounds Forming abilities including Eighteen electron rule, their stabilities.
2. Study of Lanthanides & Actinides their properties, occurrence and their trends w.r.t Periodic Table.
3. Basics of Acids & Bases their different Definitions by different theories, different Solvent systems especially detail study of Non Aqueous Solvents.

##### **Paper-XI Physical Chemistry-II**

1. State the thermodynamic criterion for equilibrium in terms of chemical potential, Interpret the slope of phase boundaries on a pressure-temperature phase diagram in terms of the relevant changes in entropy and molar volume for the given phase change.
2. Interpret phase diagrams for binary mixtures, identifying the phases and components present in each region. Perform calculations using Raoult's Law and Henry's Law to relate vapor pressure to composition in the liquid phase
3. Explain the chemistry of conductance and its variation with dilution, migration of ions in solutions and applications of conductance measurement.

4. Understand different types of galvanic cells, their Nernst equations, and measurement of emf, calculations of thermodynamic properties and other parameters from the emf measurements.

#### **Paper-XII Lab Course-IV (Physical Chemistry & Organic Chemistry)**

1. Determination of Normality of solution Conductometrically & pH metrically.
2. Study and determination of Refractive Index of System Also indicator Constant of indicator colorimetrically.
3. Study and Verification of Lambert-Beers Law.

### **Third Year**

#### **Fifth Semester**

##### **Paper-XIII Physical Chemistry**

1. Make student familiar about Compton effect, De Broglie Hypothesis, Heisenberg's uncertainty principles, Schrodinger wave equation.
2. To elaborate region of spectrum and study spectrum of diatomic molecules, selection rule, application of spectroscopy for determination of bond length and solving different numerical.
3. Photochemistry and its law such as Grothus-Drapper law, Stark-Einstein law.
4. Study and difference between Fluorescence and Phosphorescence, and study photosensitized reactions.

##### **Paper-XIV Organic Chemistry**

1. Basics of spectroscopy and calculating chemical shift values and their variation with respect to shielding and de shielding effects.
2. Organometallic Compounds and their reactions.
3. Study the structure and stability of Enolates and synthetic applications of Enolates to different Chemical reactions.
4. Study of Fat, Oil, Detergents their preparation and extraction.

#### **Paper-XV Lab Course-V (Organic Chemistry & Inorganic Chemistry)**

1. Separation and identification of Components from Binary mixture.
2. Separation of metals from binary mixture and their Estimation by both Volumetrically and gravimetrically.
3. Find out amount of Cl in Bleaching powder.

## Sixth Semester

### Paper-XVI Inorganic Chemistry

1. Detail study of valence bond theory and crystal field theory.
2. Electronic spectra of transition metal complexes to study d-d transition electronic transition and Orgel diagram.
3. Elements in biological processes and their role in biological and environment processes.
4. Chromatography their types and applications.

### Paper-XVII Organic Chemistry

1. Heterocyclic Compounds their basicity, stability, preparation methods and different chemical reactions.
2. Study the carbohydrates their classification as monosaccharides & Disaccharides and Polysaccharides.
3. Study of Synthetic Polymer, Dyes & Drugs their definition, classification, Synthesis and application.

### Paper-XVIII Lab Course-VI (Organic Chemistry & Physical Chemistry)

1. To introduce and teach the estimation of vitamin c from commercial drinks.
2. Estimation of Saponification value of Oils.
3. Preparation of different organic compounds and check their purity by thin layer Chromatography.

## DEPARTMENT OF MATHEMATICS

### Course Outcome: B. Sc. MATHEMATICS

#### ➤ Differential and Integral Calculus:-

After completing the course, students will able to

- Verify the values of limit of a function at a point using the definition of a limit.
- Students will be familiar with the techniques of integration and differentiation of function with real variables
- Identify and apply the intermediate value thm, Mean value theorem and L-Hospitals rule.
- Student will be able to understand the concept of divergence, curl, gradient and it's applications Differential Equations After completing the course, students will able to
- Identify types of differential equations and solve differential equations such as Exact, homogeneous, non-homogeneous, and linear and Bernoulli differential equations etc.



- Understand homogenous linear equation with constant coefficient and variable coefficient
- Find the solution of non-homogenous first order differential equations. • Find the solution of partial differential equations

➤ **Differential Equations**

After completing the course, students will able to

- Identify types of differential equations and solve differential equations such as Exact, homogeneous, non-homogeneous, and linear and Bernoulli differential equations etc.
- Understand homogenous linear equation with constant coefficient and variable coefficient
- Find the solution of non-homogenous first order differential equations.
- Find the solution of partial differential equations

➤ **Geometry**

After completing the course, students will able to

- Solve the problems of lines in three dimension, planes, spheres, and cylinders and how geometry is related to algebra by using their algebraic equations
- To understand geometrical terminology for plane, right line, sphere, cylinder and cone.
- Student will be able to find angle between two planes and to find length of perpendicular from a given point to a given line.
- Students are able to identify parallel and perpendicular lines

➤ **Number Theory**

After completing the course, students will able to

- Solve various problems on properties of integers and use the basic concepts of divisibility and their applications in basic algebra.
- Apply Euclids algorithm and backwards substitution
- Understand the definitions of congruences, residue classes and least residues
- Student knows the concepts addition and multiplication of integers modulo  $n$ .

➤ **Integral Transform and Partial differential Equations**

After completing the course, students will able to

- Learn the methods and properties of Laplacetransform and Inverse Laplace Transform,
- To solve Linear Differential equations.

- Know the difference between linear and nonlinear partial differential equations.
- Solve the linear and nonlinear partial differential equation by various methods like
- Lagrange's, Charpit's, Jacobi's, Monge's Method.

➤ **Numerical Methods :-**

After completing the course, students will able to

- Formulate and code a finite element method for any given set of partial differential equations.
- Solve the Ordinary differential equation by various methods.
- Learn how to find the Integration & Derivative by various methods.
- Learn how to find the roots of the equation by various methods.

➤ **Real Analysis :-**

After completing the course, students will able to

- Understand the concept of series of real numbers, convergence and Divergence.
- Understand the definition of Metric Space and continuous function on metric space and difference between open sets and closed sets.
- Define Riemann integral and its properties and also Fourier Series and its application

➤ **Abstract Algebra :-**

After completing the course, students will able to

- Identify the various algebraic structures with their corresponding binary operations.
- Generalize the groups on the basis of their orders, elements, order of elements and group
- Relations.
- Compare two groups of same orders on the basis of isomorphism Criteria.
- Compute the possible subgroups of given group of specific orders and will recognize them.

➤ **Ordinary Differential Equations :-**

After completing the course, students will able to

- Students are able to find the solution of linear differential equation of first and second order.
- Students understand the initial value problem and its solutions.
- Students know the concept Wronskian of solution.

- Students can find singular point and regular singular point of the differential equation

## **B.Sc. Zoology Pattern in Semester System**

### **Program Specific Outcomes (PSO)**

- Develops empathy and love towards the animals. Students gain knowledge and skill in the fundamentals of Animal Sciences, understands the complex interactions among various living organisms.
- Apply the knowledge and understanding of Zoology to one's own life and work.
- Correlates the physiological processes of animals and relationship of organ systems
- Understand the nature and basic concepts of Taxonomy, Animal Diversity, Cell biology, Genetics, Physiology, Biochemistry, Endocrinology, Ecology and Applied Zoology.
- Apply the knowledge of internal structure of cell, its functions in control of various metabolic functions of organisms.

### **Course Outcomes (CO)**

#### **B. Sc. I Year Zoology**

I	ZOL-101	Paper – I	<p><b>Protozoa to Annelida</b></p> <ul style="list-style-type: none"> <li>➤ Study of complex interactions among the animals of different phyla, their distribution and their relationship with the environment.</li> <li>➤ Understanding the Structure, complex evolutionary processes and behavior of animals.</li> </ul>
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	ZOL-102	Paper – II	<b>Cell Biology</b> <ul style="list-style-type: none"> <li>➤ Understood the structure of cells and cell organelles in relation to the functional</li> <li>➤ aspects and understanding of the working principles and applications of microscopes.</li> <li>➤ Acquired knowledge of principles and working mechanisms of microscopes</li> </ul>
II	ZOL-201	Paper – IV	<b>Arthropoda to Echinodermata and Protochordata</b> <ul style="list-style-type: none"> <li>➤ Understood the diversity and classification and functional aspects of different systems</li> <li>➤ of phylum Arthropoda, Mollusca and Echinodermata.</li> </ul>
	ZOL-202	Paper – V	<b>Genetics- I</b> <ul style="list-style-type: none"> <li>➤ Understood the theories of classical genetics and blood group inheritance in man.</li> <li>➤ Described the genetic variation through linkage and crossing over, chromosomal aberrations and sex determination.</li> <li>➤ Understood the genetic defects and inborn errors of metabolism and genetic counseling.</li> <li>➤ and role of inbreeding and outbreeding.</li> </ul>

### B. Sc. II Year Zoology

III	ZOL-301	Paper – VII	<b>Vertebrate Zoology</b> <ul style="list-style-type: none"> <li>➤ Imparts conceptual knowledge of vertebrates, their adaptations and associations in relation to their environment.</li> <li>➤ Classify phylum Protochordates to Mammalia.</li> <li>➤ Complex Vertebrate interactions.</li> </ul>
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	ZOL-302	Paper – VIII	<p><b>Genetics- II</b></p> <ul style="list-style-type: none"> <li>➤ Understood the molecular structure of genetic materials and understood the mechanism of gene expression and regulation character formation.</li> <li>➤ Understood of the mechanism of phenotypic expression in Drosophila.</li> <li>➤ Gained genetic knowledge on the observation of specimens and models.</li> </ul>
IV	ZOL-401	Paper – XI	<p><b>Animal Physiology (Special Emphasis on animals)</b></p> <ul style="list-style-type: none"> <li>➤ Understood about the composition of food and mechanism of digestion absorption and assimilation.</li> <li>➤ Attained knowledge of respiration and excretion and understood the mechanism of transport of gases and urine formation.</li> <li>➤ Described the mechanism of circulation and composition of blood</li> <li>➤ Knowledge of neuromuscular coordination and the mechanism of osmoregulation in animals and endocrine system and their function is attained. Physiological and biochemical understanding through scientific enquiry into the nature of mechanical, physical, and biochemical functions of humans, their organs, and the cells of which they are composed</li> </ul>
	ZOL-402	Paper – XII	<p><b>Biochemistry &amp; Endocrinology</b></p> <ul style="list-style-type: none"> <li>➤ Understood the knowledge of cholesterol and its biological significance Described the enzymes, mechanism of enzyme action and factors affecting the enzyme activity</li> <li>➤ Understood the types and importance of vitamins</li> </ul>

V	ZOL-501	Paper – XV	<b>Ecology</b> <ul style="list-style-type: none"> <li>➤ Develop an appreciation of the modern scope of scientific inquiry in the field of Ecology. Become familiar with the variety of ways that organisms interact with both the physical and the biological environment.</li> </ul>
	ZOL-502	Paper – XVI	<b>Elective (D) Parasitic protozoa &amp; helminthes-I</b> <ul style="list-style-type: none"> <li>➤ Understood the diversity, morphology, Structure, Life Cycle, Control measures and taxonomical importance some selected Parasitic Protozoans.</li> </ul>
VI	ZOL-601	Paper – XIX	<b>Evolution</b> <ul style="list-style-type: none"> <li>➤ Theories of Evolution</li> <li>➤ Knowledge of eras and evolution of species</li> </ul>
	ZOL-602	Paper – XX	<b>Elective (D) Parasitic protozoa &amp; helminthes-II</b> <ul style="list-style-type: none"> <li>➤ Understood the diversity, morphology, Structure, Life Cycle, Control measures and taxonomical importance some selected Parasitic Platyhelminthes and Ashelminths.</li> </ul>

## Department of Botany

### Programme Out comes, Programme Specific Out comes and Course Out comes

**Programme outcomes (POs), Program Specific outcomes (PSOs) and Course outcomes (COs) of the Programmes offered by the University**

Programme code	Programme Name	Department
BOT	B.Sc. Botany	UGSP Botany

➤ **Programme outcome (POs): As per Syllabus (BOS, Botany):-**

The B.Sc. - Botany curriculum is designed to equip students with subject domain knowledge and technical skills pertaining to plants in a holistic manner. It aims to train the students in all the areas of plant sciences with a unique combination of core and elective papers with significant inter disciplinary components as per University. Students have exposure to cutting-edge technologies that are currently used in the subject. They are made aware about the social and environmental issues, significance of plants and their relevance to the national economy.

➤ **Programme Specific Out comes (PSOs): As per Syllabus (BOS, Botany):-**

**PSO1.** A student completing the course is able to understand different branches of Botany such as systematics, evolution, ecology, developmental biology, physiology, biochemistry, plant interactions with microbes and insects, morphology, anatomy, reproduction, genetics and molecular biology of various life-forms.

- **PSO2.**They be comes competent enough in various analytical and technical skills related to plant sciences.
- **PSO3.** The student completing the course is able to identify various life forms of plants, design and execute experiments related to basic studies on evolution, ecology, developmental biology, physiology, biochemistry, plant interactions with microbes and insects, morphology, anatomy, reproduction, genetics, microbiology, molecular biology, recombinant DNA technology, proteomics and transgenic technology. Students are also familiarized with the use of bioinformatics tools and databases and in the application of statistics to biological data.
- **PSO4.** The student completing the course is capable to perform short research projects using various tools and techniques in plant sciences and develop scientific and research attitude.

**Course Outcomes (COs): As per Syllabus (BOS, Botany):-**

Sr. No.	Name of the course (Paper)	Course Code	Course Outcome
1.	Diversity of Cryptogams - I		<p><b>Course Objective:-</b>            Demonstrate an attitude of curiosity, appreciation and enquiry of various life forms of plants.            Identify the different types included in the syllabus.</p> <p><b>Course Learning outcomes:-</b></p> <ol style="list-style-type: none"> <li>1. Evaluate the diversity of plants with respect to Algae, Fungi, Lichens, Bryophytes, Pteridophytes and Gymnosperms.</li> <li>2. Explain the economic importance of algae, fungi and lichens</li> </ol> <p>Identify the common plant diseases.</p> <ol style="list-style-type: none"> <li>3. Formulate basic skills and techniques in micro preparation so that students can identify cryptogams and gymnosperms by themselves.</li> </ol>



2.	Morphology of Angiosperms	<p><b>Course Objective:-</b></p> <p>The paper contains structure and function of reproductive organs and their significance in plant reproduction. Pollination, Fertilization, Embryogenesis, Aeropallinology are the areas which are stressed upon.</p> <p><b>Course Learning outcomes:-</b></p> <ol style="list-style-type: none"> <li>1. Students will able to differentiate reproductive organs at Morphological, Anatomical, Physiological and Biochemical level.</li> <li>2. This knowledge will be help to apply in agriculture for production of hybrids.</li> </ol> <p>The allergic problems in Humans can be justified on the basis of pollens.</p>
3.	Diversity of Cryptogams - II	<p><b>Course Objective:-</b></p> <p>Demonstrate an attitude of curiosity, appreciation and enquiry of various life forms of plants. Identify the different types included in the syllabus.</p> <p><b>Course Learning outcomes:-</b></p> <ol style="list-style-type: none"> <li>1. Evaluate the diversity of plants with respect to Algae, Fungi, Lichens, Bryophytes, Pteridophytes and Gymnosperms.</li> <li>2. Explain the economic importance of algae, fungi and lichens</li> </ol> <p>Identify the common plant diseases.</p> <ol style="list-style-type: none"> <li>3. Formulate basic skills and techniques in micropreparation so that students can identify cryptogams and gymnosperms by themselves.</li> </ol>
4.	Histology, Anatomy and Embryology	<p><b>Course Objective:-</b></p> <p>This is the basic course of the veterinary anatomy with the intention to present a fundamental understanding of the histoarchitecture of the fundamental tissues and organs and also the way in which the single cell zygote differentiate into a multicellular organism (includes Histology and Embryology).</p> <p><b>Course Learning outcomes:-</b></p> <ol style="list-style-type: none"> <li>1. The material contained herein is neither particularly complex nor difficult, not is it intended to be. It is hopefully designed to open the gates to a broad field of knowledge that can be an endless Fascination.</li> <li>2. The practical courses deals with the study of General and Special Histology.</li> </ol>

5.	Taxonomy of Angiosperms	<p><b>Course Objectives:</b> This course aims to add to understanding of the students about the diversity of plants, their Description, Identification, Nomenclature and their classification including recent advances in the field.</p> <p><b>Course Learning Outcomes:</b> The students will be learning</p> <ol style="list-style-type: none"> <li>1. The students will know about the systematic position of Genera's, Species and, Families.</li> <li>2. The students develop knowledge about plant nomenclature.</li> </ol>
6.	Plant Ecology	<p><b>Course Objectives:</b> This course aims to introduce the concepts and principles of ecology, biological diversity, conservation, sustainable development, population, community and ecosystem structure and function, application of these concepts to solve Environmental problems.</p> <p><b>Course Learning Outcomes:</b> The students will be learning</p> <ol style="list-style-type: none"> <li>1. They will be understand the cosept, types, development and functions of various ecosystems and their communication.</li> <li>2.The various environmental factors governing these ecosystem serial so clearly Understood.</li> </ol>

7.	Gymnosperms and Utilization of plants.		<p><b>Course Objective:-</b> The Course focuses on morphology, anatomy, reproduction and evolution in Pteridophytes and Gymnosperms. The paper deals with origin, diversification, utility and conservation strategies of natural resources. It focuses the roles of various or generation related to the plant sciences.</p> <p><b>Course Learning Outcomes:-</b> The students develop the basic understanding of important characteristics, anatomy, reproduction and evolution along with economic importance of these two groups.</p> <ol style="list-style-type: none"> <li>1. They understand the pattern origin, diversification and cultivation of plants in nature.</li> <li>2. They are able to design the strategies for conservation of these natural resources.</li> <li>3. They become well versed with the role and functions of various organizations.</li> </ol>
8.	Plant Physiology		<p><b>Course Objectives:</b> This course aims to educate student about the mechanism and physiology life processes in plants. It focus on the plant nutrient uptake and trans location, photosynthesis, respiration and nitrogen metabolism.</p> <p><b>Course Learning Outcomes:</b></p> <ol style="list-style-type: none"> <li>1. Students will be able to understand the various physiological life processes in plants.</li> <li>2. They will also gain about the various uptake and transport mechanisms in plants And are able to coordinate the various processes. They understand the role of Various hormones, signaling compounds, thermodynamics and enzyme kinetics.</li> <li>3. During the course students will gain knowledge about various mechanisms such As channel or transport proteins involved in nutrient uptake in plants.</li> </ol>

9.	Cell biology And Molecular biology		<p><b>Course Objectives:</b></p> <p>The objective of the present course content is to provide a foundation and background in cellular and a cellular entities of plants and animals, cell structure in relation to functions, eukaryotic genome structure(including nuclear and organelles), and regulatory mechanisms.</p> <p><b>Course Learning Outcomes:</b></p> <p>The students will be learning</p> <ul style="list-style-type: none"> <li>➤ About the cellular entities including infective particles comprising only protein or RNA,</li> <li>➤ Which are parasites of plants and/or animals and of the observations/proposals which challenge the established dogmas, such as, cellbeing the basic unitoflifeorhigherplantsaremulticellularratherthansupracellular, and current state of knowledge about the plant cell structure</li> <li>➤ And their turnover, starting from cell wall to chromatin, in relation to their Functions.</li> <li>➤ Students will understand the role of plant cytoskeleton and accessory Protein sin major cellular processes of plants.</li> <li>➤ Student will focus on various components of the eukaryotic nuclear and</li> <li>➤ organelles Genome, with special reference to the regulatory role.</li> </ul>
10	Diversity of Angiosperm - I		<p><b>Course Objectives:</b></p> <p>The paper contains structure and function of reproductive organs and their significance in plant reproduction. Pollination, Fertilization, Embryogenesis, Aeropallinology are the areas</p>

			<p>which are stressed upon.</p> <p><b>Course Learning outcomes:-</b></p> <ol style="list-style-type: none"><li>1. Students will be able to differentiate reproductive organs at Morphological, Anatomical, Physiological and Biochemical level.</li><li>2. This knowledge will be helpful to applying culture for production of hybrids. The allergic problems in Humans can be justified on the basis of pollens.</li></ol>
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11	<b>Genetics And Biotechnology</b>		<p><b>Course Objectives:</b></p> <p>This course would provide students with an understanding of principles and techniques of plant tissue culture, concepts and methods associated with development and analysis of transgenic plants, and their applications in basic and applied research.</p> <p>This course is designed to provide a contextual and inquiry based learning of modern-day advances in the field of recombinant DNA technology.</p> <p><b>Course Learning Outcomes:</b></p> <p>The students will learn about</p> <ol style="list-style-type: none"> <li>1. Concepts, tools and techniques related to <i>invitro</i> propagation of plants.</li> <li>2. Different methods used for genetic transformation of plants, use of <i>Agrobacterium</i> as a vector for plant Tran's formation, components of a binary vest or system.</li> <li>3. Various case studies related to basic and applied research in plant sciences using Tran's genic technology.</li> <li>4. Principles and methods used for phenotypic, genetic and molecular analysis of trans Genic plants.</li> <li>5. Basic principles and modern age applications of recombinant DNA technology.</li> <li>6. Learning molecular and technical skills along with applications of the Instrumentation.</li> </ol>

12	Diversity of Angiosperm - II		<p><b>Course Objectives:</b></p> <p>The paper contains structure and function of reproductive organs and their significance in plant reproduction. Pollination, Fertilization, Embryogenesis, Aeropallinology are the areas which are stressed upon.</p> <p><b>Course Learning Outcomes:</b></p> <ol style="list-style-type: none"> <li>1. Students will able to differentiate reproductive organs at Morphological, Anatomical, Physiological and Biochemical level.</li> <li>2. This knowledge will be help to applying culture form production of hybrids. The allergic problems in Humans can be justified on the basis of pollens.</li> </ol>
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