Rayat Shikshan Sanstha's

Mahatma Phule Mahavidyalaya, Pimpri, Pune-17

Department of English

Academic Year: 2021-22

Program Outcomes

Name of the Program	Program code	Program outcome
Bachelor of Arts		• **PO1: Basic knowledge:** apply and analyse the knowledge of languages and social sciences. • **PO2: Problem Analysis:** Identify, study of literature, understand terms and particular concepts. Identify, formulate and analyse complex ideas in the social sciences. • **PO3:** Understand, identify and analysed the knowledge such as, code of conduct of society, manners, cultural issues, political issues, economical, historical and geographical etc. • **PO4: Critical Thinking:** Identify the assumptions, checking out the degree to which assumptions are accurate and valid looking out the correct perspectives. • **PO5: Effective communication:** Apply the basic knowledge to listen, speak, read and write clearly to understand English knowledge. • **PO6: Modern tool usage:** To understand and analyzed the knowledge of ICT in communications. • **PO7: Ethics and values:** Apply the ethical principles and understand the responsibilities of the societies. • **PO8: Communications:** To communicate effectively in the society such as being able to comprehend and write effective reports and design documents for making effective presentation and exchange clear information. • **PO9**:Self-directed and Lifelong Learning: The course will inspire students to constantly upgrade their knowledge and skills. • **PO10:. Social Interaction**: The students will interact effectively with peers, faculty and management and effectively develop themselves in holistic cognizance of their surroundings and appreciate aesthetics in everyday life. • **PO11:** Literary Acumen: Students will get a comprehensive idea English Literature as a whole. They will also be able to judge literary quality of any literary text and to find connections and continuities of the past and present as well as identify disjuncture in these traditions • **PO12: Critical Approaches.** Students will deploy ideas from works of craft and criticism in their own reading and writing.

Program Specific Outcomes

Name of the Department	Program specific outcome
ENGLISH	• **PSO 1:** Ability for clear expression for both oral and written. • **PSO 2:** Attend the potential knowledge of English language, their trends and terms. • **PSO 3:** Understand the code of conduct cultural issues. • **PSO4:** Understand the various literary genres and study of literature such as Indian, British literature and language etc. • **PSO 05:** Students will be able to analyse unseen poem and prose stylistically. • **PSO 06:** Shape their personality traits with moral and ethical behaviour.

Course Outcomes

Name of the Department	Class	Course Name	Course code	Course Outcome
English	**F.Y.B.Com**	**Compulsory English**	**111**	CO1. Get familiarized with excellent pieces of prose and poetry in English and will be realized the beauty and communicative power of English CO2: Understand native cultural experiences and situations and develop humane values and social awareness CO3 :Acquire overall linguistic competence and communicative skills CO4: Students realize the beauty and communicative power of English CO5: Students understand the importance and utility of the English language CO6:Students can use the language effectively and feel confident in and outside the world CO7:Students realize the beauty and communicative power of English CO8:They understand the literary merit, beauty and creative use of language

Name of the Department	Class	Course Name	Course code	Course Outcome
English	**F.Y.B.A**	**Compulsory English**	**11011**	CO1: Students realize the beauty and communicative power of English. CO2: Students understand the importance and utility of the English language. CO3: Students can use the language effectively and feel confident in and outside the world CO4: Their employability enhances and English becomes the medium of their livelihood and personality CO5:To develop the ability to appreciate ideas and think critically CO6:To expose students to the basics of literature and language and develop an integratedview about language and literature in them CO7:They understand the literary merit, beauty and creative use of language CO8:Students realize various forms of literature and language.

Class: F.Y. B. A. (Optional English)-English Literature and Language

Name of the Department	Class	Course Name	Course Code	Course Outcome
English	**FYBA**	**Optional English**	**11331**	CO1: Students realize various forms of literature and language. CO2: They understand the literary merit, beauty and creative use of language. CO3:To expose students to the basics of literature and language and develop an integrated view about language and literature in them CO4:To acquaint them with minor forms of literature in English and help them to appreciate the creative useof language in literature CO5: To introduce them to the basics of phonology of English so that they can pronounce better and speak English correctly. CO6: To prepare students to go for detailed study and understanding of literature and language CO7:To enhance the job potential of students by improving their language skills CO8:To develop the art of reading and understanding of literature and language

S.Y.B.A.-Compulsory English

Paper- PANORAMA

(Values and skills through literature)

Name of the Department	Class	Course Name	Course Code	Course Outcome
English	**SYBA**	**Compulsory English**	**23001**	CO1:The Student becomes the self- learned CO2: The Students become familiar with various forms of literature. CO3: The Students become independent readers CO4: Students become familiar with human values and social awareness CO5 The Student becomes the self- learned CO6: To Develop into responsible citizen of the world CO7: To become confident and face the challenges of life CO8: To enhance the linguistics skills of students

S.Y.B.A.-Optional English G-II
Advanced Study of English Language

Name of the Department	Class	Course Name	Course code	Course Outcome
English	**S.Y.B.A**	**Optional English G-II**	**23333**	CO1:Students will learn artistic and innovative use of language through prescribed literary text CO2: Students will be acquainted with basic concepts and issues in linguistics CO3: They will learn sub-disciplines of linguistics. CO4: Students will learn artistic and innovative use of language through prescribed literary text CO5: Students will understand the nature, scope and prominent branches of Linguistics. CO6: Understand the different patterns and sound system of the language CO7: Use effective the accurate pronunciation of English CO8: To develop overall linguistic competence of the students.

S.Y.B.A.-Optional English S-I

Appreciating Drama

Name of the Department	Class	Course Name	Course code	Course Outcome
English	**S.Y.B.A**	**Optional English S-I**	**23331**	CO1: To understand the terminology in Drama and Criticism. CO2:To enhance students' awareness regarding aesthetics of Drama and to empower them to evaluate drama independently CO3:To introduce Drama as a major form of literature CO4:To introduce minor forms of Drama CO5:To acquaint and enlighten students regarding the literary and the performing dimensions of drama CO6 To acquaint and familiarize the students with the elements and the types of Drama CO7To encourage students to make a detailed study of a few sample masterpieces of English Drama from different parts of the world CO8:To develop interest among the students to appreciate and analyse drama independently

S.Y.B.A.-Optional English S-II

Paper- Appreciating Poetry

Name of the Department	Class	Course Name	Course code	Course Outcome
English	**S.Y.B.A**	**Optional English S-II**	**23332**	CO1: To familiar with the terminology in poetry CO2: To aware the aesthetics of poetry CO3: To familiar with the Various forms of poetry CO4: To be able to make poem systematically CO5: To understand the History of Poems CO6: To Evaluate the types of poetry CO7: To develop the interest in poetry CO8: To know the culture through the poetry.

Class: T.Y. B. A. (Compulsory English)

Prescribed Text: Exploring New Horizons

Name of the Department	Class	Course Name	Course code	Course Outcome
English	**T.Y.B.A**	**Compulsory English**	**35001**	CO1: To acquire the proficiency in English language CO2: The wider exposure of the English language enables them to acquire various skills in effective communication and it enhances their abilities of self-learning CO3: To acquire the skill of reading different types of texts in English. CO4:To familiarize students with some excellent pieces of prose and poetry in English so that they realize the beauty and communicative power of English. CO5: To enable students to become competent and effective users of English in real life situations. CO6: To contribute to the overall personality development of the students. CO7:To instill humanitarian values and foster sympathetic attitude in the students. CO8: To train the students in practical writing skills required in work environment.

T.Y.B.A.- Optional English G-III

Paper- Enhancing Employability Skills

Name of the Department	Class	Course Name	Course code	Course Outcome
English	**T.Y.B.A**	**Optional English G-III**	**35333**	CO1: To get the awareness of career opportunities available to them. CO2: To identify the career opportunities suitable to them. CO3: To understand the use of English in different careers. CO4: To develop competence in using English for the career of their choice. CO5: To enhance skills required for their placement. CO6: To use English effectively in the career of their choice. CO7: To exercise verbal as well as nonverbal communication effectively for their career. CO8:To Analyse and apply knowledge in real life situations

Class: T.Y. B. A. (English S- III)-
Paper-Appreciating Novel

Name of the Department	Class	Course Name	Course code	Course Outcome
English	**T.Y.B.A**	**(English S- III)-**	**35331**	CO1:To introduce students to the basics of novel as a literary form CO2: To expose students to the historical development and nature of novel CO3:To make students aware of different types and aspects of novel CO4: To develop literary sensibility and sense of cultural diversity in students CO5: To expose students to some of the best examples of novel CO6: Students will be able to interpret and critically appreciate the novels of the selected author CO7: Students will understand major trends and writers in Fiction through detailed study of selected novels. CO8: Students will know the narrative experiments in Postmodern Indian English novel with reference to the text.

T.Y.B.A.- Special English S-IV

Paper- Introduction to Literary Criticism

Name of the Department	Class	Course Name	Course code	Course Outcome
English	**T.Y.B.A**	**Special English S-IV**	**35332**	CO1:To introduce students to the basics of literary criticism CO2: To make them aware of the nature and historical development of criticism CO3: To make them familiar with the significant critical approaches and terms CO4:To encourage students to interpret literary works in the light of the critical approaches CO5:To develop aptitude for critical analysis CO6: To know the writers point of view of the text. CO7: To evaluate the text critically CO8: To examine the quality of the text

Class: S.Y.B.Sc.- Optional English

English in Multivalent Contexts

Name of the Department	Class	Course Name	Course code	Course Outcome
English	**S.Y.B.sc**	**Optional English**	**23321**	CO1:To introduce the use of English in multimedia CO2:To acquaint the students with the language skills in multivalent contexts CO3:To acquaint and enlighten students regarding the speaking skill in various contexts CO4: To acquaint and familiarize the students with advanced writing skills in different contexts CO5:To acquaint and familiarize the students with soft skills CO6:To minimize the gap between the existing communicative skills of the students and the skills they require at professional level CO7: To develop competence among the students to appreciate and analyse short stories and poetry CO8: To acquire the knowledge of English literature.

HEAD
Department of English

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Rayat Shikshan Sanstha's

Mahatma PhuleMahavidyalay, Pimpri, Pune-17

DEPARTMENT OF HINDI(2021-22)

स्नातक हिंदी (UG) पाठ्यक्रम की उपलब्धियाँ(Program Outcomes-POs)

Name of the Program	Program Outcomes (POs)
Batchelor of Arts	**सफलतापूर्वक बी.ए.(हिंदी) पाठ्यक्रम पूर्ण करने के उपरांत छात्र निम्नलिखित गतिविधियाँ संपन्न कराने में सक्षम होंगे -** **PO1. साहित्य की विविध विधाओं का सामान्य परिचय:** प्रस्तुत पाठ्यक्रम के माध्यम से अध्ययन-अध्यापन की प्रक्रिया में कविता,गज़ल, कहानी,लघुकथा उपन्यास,नाटक,निबंध,रेखाचित्र,संस्मरण जैसी साहित्य की विविध विधाओं का तात्विक परिचय प्राप्त करके उनके बीच अंतर को समझना छात्रों को संभव होगा। **PO2. प्रतिनिधि साहित्यकारों का परिचय:** हिंदी साहित्य के आदिकाल से लेकर आधुनिक काल के प्रतिनिधि लेखक -कवियों का साहित्यिक परिचय छात्र प्राप्त कर सकेंगे। **PO 3. सौंदर्य बोध:**छात्र साहित्य के सौंदर्यात्मक एवं कला पक्ष का बोध कराने में सक्षम होंगे PO4 सृजनात्मकता :साहित्य के रसास्वादन एवं साहित्यिक अभिव्यक्ति को समझते हुए छात्रों को सृजनात्मक लेखन के लिए प्रेरित करना संभव होगा। **PO4.विविध साहित्यिक विमर्शों का परिचय:** साहित्यिक रचनाएँ पढ़कर छात्र स्त्री विमर्श, आदिवासी विमर्श, दलित विमर्श, अल्पसंख्यंक विमर्श की अवधारणा से अवगत होंगे। **PO5.जीवनमूल्य:** गद्य एवं पद्य रचनाओं के तहत छात्र ईमानदारी, मनुष्यता, राष्ट्रप्रेम, सांप्रदायिक सद्भाव, स्त्री -पुरुष समता जैसे जीवनमूल्य आत्मसात करेंगे । **PO 6. काव्यशास्त्रीय बोध :** छात्र भारतीय काव्यशास्त्र का स्वरुप समझते हुए साहित्य की परिभाषाएँ,साहित्य का तात्विक अध्ययन कर पाएँगे। **PO 7. आलोचनात्मक दृष्टि :** छात्र साहित्य का रसास्वादन करते हुए साहित्य की आलोचना कर सकेंगे। **PO8.हिंदी भाषा के विविध रूपों का ज्ञान:** छात्रों द्वारा राष्ट्रभाषा,राजभाषा, ,संपर्क भाषा,विश्वभाषा हिंदी जैसे भाषा के विविध रूपों की जानकारी प्राप्त की जा सकेगी। **PO9. भाषा के सैद्धांतिक एवं व्यावहारिक पक्षों का ज्ञान:**हिंदी अनुवाद ,हिंदी माध्यम (मीडिया) लेखन,हिंदी पत्र लेखन के माध्यम से हिंदी भाषा के सैद्धांतिक रूप के साथ-साथ अनुप्रयोगात्मक पक्ष को भी जाना जा सकेगा। **PO10. भाषा विज्ञान की समझ:** छात्र भाषा विज्ञान का स्वरूप,अध्ययन की दिशाएँ,व्यावहारिक भाषा विज्ञान समझेंगे। **PO11. भाषा शिक्षण :**हिंदी भाषा शिक्षण हेतु श्रवण,पठन,लेखन,भाषण एवं प्रस्तुति कौशल छात्र हाँसिल कर सकेंगे। **PO12. व्यावसायिक क्षमता का विकास:** व्यावसायिक क्षमता को बढ़ावा देने हेतु माध्यम लेखन, पटकथा लेखन,फिल्मांतरण,अनुवाद, साक्षात्कार कला,भाषा का मोबाइल तंत्र,इंटरनेट, हिंदी सॉफ्टवेयर के परिचय,संवाद कौशल की सहायता से वैश्वीकरण के इस युग में बाजार के लिए आवश्यक कौशल एवं योग्यताओं का भी विकास किया जा सकेगा।

Name of the Program	Program Specific Outcomes (PSOs)
B.A. (HINDI)	**सफलतापूर्वक बी.ए.(हिंदी)उपाधि प्राप्त करने के उपरांत छात्र -** PSO1.सृजनात्मकता एवं संभाषण कला प्राप्त कर पाएँगे।
	PSO2.साहित्य की विविध विधाओं का स्वरूपात्मक ज्ञान प्राप्त कर पाएँगे।
	PSO 3अनुवाद, माध्यम लेखन एवं समाचार लेखनजैसे व्यावसायिक कौशल हाँसिल कर पाएँगे।
	PSO 4. हिंदी साहित्य के इतिहास से अवगत होंगे।
	PSO 5. साहित्यशास्त्र से परिचित होंगे ।
	PSO 6.भाषाविज्ञान का सामान्य परिचय प्राप्त करेंगे।

Rayat Shikshan Sanstha's

Mahatma PhuleMahavidyalay, Pimpri, Pune-17

DEPARTMENT OF HINDI(2021-22)

स्नातक हिंदी (UG) पाठ्यचर्याओं की उपलब्धियाँ(Course Outcomes-COs)

Department	Class	Course Code	Course Name	Course Outcome
Department of Hindi	F.Y.B.A (प्रथम अयन)	11091	वैकल्पिक हिंदी प्रश्नपत्र -1(A)	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO1. हिंदी साहित्य के प्रति रूझान रखेंगे । CO2. हिंदी कहानी एवं काव्य साहित्य से परिचित होंगे । CO3. छात्रों को जीवनमूल्य बोध होगा । CO4. प्रयोजनमूलक हिंदी से परिचित होंगे। CO5. छात्रों की विचार तथा लेखन क्षमता का विकास होगा। CO6. छात्रों की सृजनात्मकता (Creativity) का विकास होगा । CO7.संवाद कौशल एवं सूत्रसंचालन से परिचय प्राप्त होगा । CO8.इंटरनेट तथा हिंदी सॉफ्टवेयरों की सामान्य जानकारी छात्रों को हाँसिल होगी।
	F.Y.B.A (द्वितीय अयन)	12091	वैकल्पिक हिंदी प्रश्नपत्र -1(B)	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO1.हिंदी काव्य तथा गद्य की विविध साहित्यिक विधाओं का सामान्य परिचय प्राप्त करेंगे। CO 2.स्ववृत्त लेखन कौशल हाँसिल करेंगे। CO 3.निबंध लेखन कौशल प्राप्त करेंगे। CO 4.विज्ञापन लेखन कौशल। CO 5.वाक्यशुद्धीकरण की प्रक्रिया समझ सकेंगे । CO 6.राजभाषा हिंदी का प्रचार-प्रसार करने में सक्षम होंगे ।
	F.Y.B. Com. (प्रथम अयन)	117C	वैकल्पिक हिंदी प्रश्नपत्र -1(A)	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO1.हिंदी कहानी एवं काव्य साहित्य से परिचित होंगे । CO2.हिंदी संवाद कौशल विकसित कर सकेंगे । CO3.हिंदी कंप्यूटिंग का सामान्य परिचय प्राप्त करेंगे। CO4.छात्रों को इंटरनेट तथा हिंदी सॉफ्टवेयरों की सामान्य जानकारी प्राप्त होगी। CO5.अंक तथा गणितीय चिह्नों का देवनागरी में लेखन करने में सक्षम होंगे।
	F.Y.B. Com. (द्वितीय अयन)	127C	वैकल्पिक हिंदी प्रश्नपत्र -1(B)	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO1.हिंदी कहानी एवं काव्य साहित्य से परिचित होंगे । CO2.हिंदी संप्रेषण कौशल का विकास कर सकेंगे । CO3.छात्रों को अनुवाद कौशल हाँसिल होगा । CO4. छात्रों को पारिभाषिक शब्दावली (कार्यालयीन)का सामान्य परिचय।

	S.Y.B.A (तृतीय अयन)	23093	CC-1C (G-2) आधुनिक काव्य,कहानी तथा व्यावहारिक हिंदी	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO1.काव्य साहित्य से परिचित होंगे। CO2. कहानी साहित्य का परिचय प्राप्त करेंगे। CO3.हिंदी कारक-व्यवस्था को समझ सकेंगे। CO4.शब्द युग्म का अर्थ एवं प्रत्यक्ष वाक्य में प्रयोग कर पाएँगे। CO5.छात्रों को संक्षेपण लेखन का प्रत्यक्ष बोध होगा। CO6.सर्जनात्मकता को विकसित कर सकेंगे।
		23091	DSE-1A (S-1) काव्यशास्त्र (सामान्य)	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1.भारतीय काव्यशास्त्र के स्वरूप से परिचित होंगे । CO 2. काव्य परिभाषा, तत्व आदि का बोध छात्रों को होगा । CO 3. काव्य के तत्व, शब्द-शक्तियों का परिचय मिलेगा। CO 4. रस का स्वरूप समझ सकेंगे । CO 5. छात्रों का भारतीय काव्यशास्त्र के प्रति रुझान बढ़ेगा तथा उन्हें आलोचना-बोध होगा।
		23092	DSE-2A (S-2) मध्ययुगीन काव्य तथा उपन्यास साहित्य	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1.मध्ययुगीन हिंदी काव्य से सामान्य रूप से परिचित होंगे। CO 2.कबीर के साहित्य का परिचय हाँसिल कर सकेंगे। CO 3.मीराँबाई के साहित्य की संवेदना को समझ सकेंगे । CO 4.हिंदी उपन्यास की अवधारणा समझ सकेंगे । CO 5.उपन्यास समीक्षा कौशल प्राप्त करेंगे। CO 6.छात्रों को साहित्यिक रचनाओं में प्रतिबिंबित जीवनमूल्य बोध होगा।
		23096	SEC-2A अनुवाद: स्वरुप एवं व्यवहार	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1.अनुवाद कौशल हाँसिल कर सकेंगे। CO 2. अनुवाद का स्वरूप अवगत कर पाएँगे । CO 3. अनुवाद के विविध क्षेत्रों से परिचित होंगे। CO 4. हिंदी से मराठी में अनुवाद का अनुप्रयोग करेंगे। CO 5. अंग्रेजी से हिंदी,मराठी में अनुवाद कौशल विकसित कर पाएँगे।
		23012	MIL-1 हिंदी भाषा शिक्षण	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1.हिंदी भाषा श्रवण कौशल हाँसिल कर पाएँगे। CO 2.हिंदी भाषा संवाद कौशल अवगत कर पाएँगे । CO 3. हिंदी भाषा संवाद कौशल का विकास करने में सक्षम होंगे। CO 4. हिंदी भाषा भाषा व्यवस्था समझ सकेंगे । CO 5.हिंदी भाषा व्यवहार कौशल अवगत करेंगे । CO 6.लघुकथा सृजन कौशल प्राप्त करेंगे ।
	S.Y.B.A (चतुर्थ अयन)	24093	CC-1D (G-2) आधुनिक हिंदी व्यंग्य साहित्य तथा व्यावहारिक	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1. व्यंग्य साहित्य से परिचित होंगे। CO 2. छात्रों को कहानी व्यंग्य पाठ का बोध होगा। CO 3. साक्षात्कार कला से अवगत होंगे। CO 4. भाषा का मोबाइल तंत्र समझ सकेंगे। CO 5. पल्लवन कला से अवगत होंगे।

			हिंदी	
		24091	DSE-1B (S-1) साहित्य के भेद	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1. साहित्य के भेद से अवगत होंगे। CO 2. पदय भेद से परिचित होंगे। CO 3. महाकाव्य, खंडकाव्य और मुक्तक काव्य से परिचित होंगे। CO 4. नाटक का स्वरूप समझ सकेंगे। CO 5. छात्रों में नाट्य अभिनय की रुचि का विकास होगा।
		24092	DSE-2B (S-2) मध्ययुगीन काव्य तथा नाटक साहित्य	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1.रहीम के काव्य का परिचय प्राप्त करेंगे । CO 2.बिहारी की काव्य-अभिव्यंजना को समझ सकेंगे । CO 3.आधुनिक हिंदी नाटक एवं रंगमंच की जानकारी प्राप्त करेंगे। CO 4.छात्रों के नाट्यालोचन एवं अभिनय कौशल का विकास होगा।
		24096	SEC-2B माध्यम लेखन	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1.माध्यम लेखन से सामान्य रूप में परिचित होंगे । CO 2.सृजनात्मक लेखन कौशल हाँसिल कर सकेंगे। CO 3.फीचर लेखन से परिचित होंगे । CO 4.दृश्य-श्रव्य माध्यमों की भाषिक विशेषताएँ समझ सकेंगे।
		24012	MIL-2 हिंदी भाषा शिक्षण	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1. वाक्य के भेदों की जानकारी हाँसिल करेंगे। CO 2 . हिंदी भाषा श्रवण कौशल प्राप्त करेंगे। CO 3. हिंदी भाषा संवाद कौशल विकसित करने में सक्षम होंगे। CO 4. हिंदी भाषा पठन कौशल हाँसिल करेंगे । CO 5.हिंदी भाषा लेखन कौशल का विकास कर सकेंगे । CO 6. हिंदी काव्य-गीत सृजन कौशल हाँसिल करेंगे 1
6.	T.Y.B.A (पंचम अयन)	35093	CC 1 E	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1.हिंदी संस्मरण साहित्य से अवगत होंगे । CO 2. रेखाचित्र विधा से सामान्य रूप में परिचित होंगे । CO 3. संस्मरण विधा से सामान्य रूप में परिचित होंगे । CO 4.रेखाचित्र एवं संस्मरण विधाओं की समीक्षा दृष्टि को विकसित करेंगे। CO 5.छात्रों को सभा इतिवृत्त लेखन कौशल प्राप्त होगा। CO 6. छात्रों में वार्ता लेखन कौशल दृष्टि का निर्माण होगा।
		35091	DSE 1 C(S-3)	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1. हिंदी साहित्येतिहास लेखन की परंपरा से परिचित होंगे। CO 2. हिंदी साहित्येतिहास के कालविभाजन तथा नामकरण की प्रक्रिया को समझ सकेंगे। CO 3. आदिकालीन,भक्तिकालीन, रीतिकालीन पृष्ठभूमि से परिचित होंगे। CO 4.आदिकालीन, भक्तिकालीन, रीतिकालीन प्रमुख साहित्यिक प्रवृत्तियों से परिचित होंगे।

				CO 5. आदिकालीन, भक्तिकालीन, रीतिकालीन प्रमुख कवियों के व्यक्तित्व एवं कृतित्व से परिचित होंगे। CO 6.हिंदी साहित्य के आदिकाल,भक्तिकाल एवं रीतिकाल की प्रमुख रचनाओं से का परिचय प्राप्त करेंगे।
		35092	DSE 2 C(S-4)	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1.भाषाविज्ञान के स्वरूप से परिचित होंगे। CO2. भाषाविज्ञान की व्याप्ति समझ में आएगी। CO3.भाषाविज्ञान के अध्ययन की दिशाओं से परिचित होंगे। CO4.भाषाविज्ञान के अनुप्रयोगात्मक पक्ष को समझेंगे। CO5.साहित्य-अध्ययन में भाषाविज्ञान की उपयोगिता समझ सकेंगे। CO6.हिंदी की विविध बोलियों से परिचित होंगे।
		35096	SEC 2 C	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1. स्क्रिप्ट लेखन के स्वरूप से परिचित होंगे। CO 2. कथा और पटकथा के बीच के अंतर के तकनीकी पक्ष से अवगत होंगे। CO 3. पटकथा लेखन,शॉर्ट फिल्म लेखन,विज्ञापन लेखन कौशल हाँसिल करेंगे। CO 4. छात्रों को पटकथा लेखन के सॉफ्टवेयरों की जानकारी उपलब्ध होगी।
7.	T.Y.B.A (षष्ठ अयन)	36093	CC 1 F	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1. हिंदी गज़ल साहित्य के स्वरूप से अवगत होंगे। CO 2. गज़ल के शिल्प पक्ष से परिचित होंगे। CO 3. हिंदी गज़लकार के रूप में दुष्यंतकुमार के व्यक्तित्व एवं कृतित्व से परिचित होंगे। CO 4.दुष्यंतकुमार की गज़लों का समसामयिक राजनीतिक एवं सामाजिक संदर्भ समझ सकेंगे । CO 5.समीक्षात्मक दृष्टि विकसित कर सकेंगे। CO 6. सरकारी पत्र लेखन कौशल हाँसिल कर पाएँगे।
		36091	DSE 1 D(S-3)	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1. हिंदी साहित्य के आधुनिक काल की पृष्ठभूमि से परिचित होंगे । CO 2. आधुनिक हिंदी काव्य की विकासयात्रा से अवगत होंगे। CO 3. आधुनिक काल के प्रतिनिधि काव्य आंदोलनों से परिचिय प्राप्त करेंगे। CO 4.आधुनिक काल के प्रतिनिधि साहित्यकारों के व्यक्तित्व एवं कृतित्व से परिचिय प्राप्त करेंगे। CO 5. हिंदी गद्य साहित्य की विविध विधाओं के उद्भव और विकास से परिचित होंगे। CO 6. आधुनिक हिंदी गद्य की विकासयात्रा में फोर्ट विलियम कॉलेज का योगदान समझ सकेंगे।
		36092	DSE 2 D(S-4)	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1. भाषाविज्ञान का स्वरूप समझेंगे।

				CO 2. भाषाविज्ञान की व्याप्ति समझेंगे । CO 3. भाषाविज्ञान के अध्ययन की दिशाओं से परिचित होंगे। CO 4. भाषाविज्ञान के अनुप्रयोगात्मक पक्ष को समझ सकेंगे। CO 5.अध्ययन में भाषाविज्ञान की उपयोगिता समझेंगे | CO 6.नागरी लिपि के उद्भव और विकास से परिचित होंगे।
		36096	SEC 2 D	प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र - CO 1.सिनेमा तकनीक से परिचित होंगे। CO 2. हिंदी साहित्य और सिनेमा के अन्त:संबंध से परिचित होंगे। CO 3.हिंदी उपन्यासों पर आधारित फिल्मों से अवगत होंगे। CO4.फिल्मांतरण का स्वरूप समझ सकेंगे।

Rayat Shikshan Sanstha's

Mahatma PhuleMahavidyalay, Pimpri, Pune-17

DEPARTMENT OF HINDI(2021-22)

स्नातकोत्तर हिंदी (PG) पाठ्यक्रम की उपलब्धियाँ(Program Outcomes-POs)

Name of the Program	Program Outcomes (POs)
Master of Arts	**सफलतापूर्वक एम.ए.(हिंदी) पाठ्यक्रम पूर्ण करने के उपरांत छात्र निम्नलिखित गतिविधियाँ संपन्न कराने में सक्षम होंगे -** **PO1.साहित्य और समाज के अंत:संबंध की जानकारी:** प्रस्तुत पाठ्यक्रम पूर्ण **करने** के उपरांत छात्रों को साहित्य में प्रतिबिंबित सामाज के चित्रण का एहसास होगा। साथ ही साथ साहित्य में लेखक के समकालीन सामाजिक संदर्भों का आकलन होगा। **PO 2. प्रबुद्ध नागरिक बनने हेतु जागरूकता:** छात्रों द्वारा हिंदी साहित्य के पठन एवं उसमें निहित मूल्यों के तहत प्रबुद्ध नागरिक बनने के लिए जागरूकता हाँसिल की जाएगी।छात्र अपने सामाजिक उत्तरदायित्व के प्रति छात्र सचेत हो जाएँगे। **PO3.सामाजिक एवं सांस्कृतिक चेतना:** पठित मध्यकालीन एवं आधुनिक साहित्यिक रचनाओं के आधार पर छात्रों में सामाजिक स्थितियों का यथार्थ एवं उसके सांस्कृतिक संदर्भों की समझ उत्पन्न होगी। **PO 4. भारतीय साहित्य का ज्ञान:** हिंदी के अतिरिक्त विविध भारतीय भाषाओं के साहित्य का ज्ञान अपेक्षित रहेगा जो छात्रों के व्यक्तित्व एवं अभिव्यक्तिगत विकास में सहायक होगा। **PO 5. भारतीय एवं पाश्चात्य साहित्य सिद्धांतों का विश्लेषण:**भारतीय एवं पाश्चात्य काव्यशास्त्र के विविध सिद्धांत समझकर उनका विश्लेषण एवं अनुप्रयोग करने की क्षमता का विकास छात्रों में संभव होगा। **PO 6. अनुसंधानात्मक दृष्टि का विकास:**हिंदी भाषा एवं साहित्य से संबंधित विविध विषयों में अनुसंधान कार्य हेतु तैयारी करने की प्रेरणा छात्र ग्रहण कर सकेंगे। **PO 7. संवैधानिक मूल्यबोध :आधुनिक काल की** विविध गद्य एवं पद्य साहित्य रचनाओं का भावार्थ समझकर उनमें समाविष्ट राष्ट्रभक्ति,समता,बंधुता,सामाजिक न्याय जैसे संवैधानिक मूल्य समझना छात्रों को संभव होगा। **PO 8. पर्यावरण चेतना:** पाठ्यक्रम में समाविष्ट साहित्यिक रचनाओं से संदेश ग्रहण करते हुए छात्रों द्वारा पर्यावरण संवर्धन और मानव जीवन को स्वस्थ बनाने में उसकी भूमिका के बारे में ज्ञान प्राप्त किया जा सकेगा। **PO9.महिलाओं से संबंधित मुद्दों के बारे में जागरूकता:** विविध साहित्यिक रचनाओं के माध्यम से सामंती व्यवस्था में महिलाओं द्वारा सामना किए जाने वाले शोषण के रूपों के बारे में सोचते हुए नारी के शोषण का विरोध करने की क्षमता उत्पन्न होगी। **PO10.व्यावसायिक कौशल की प्राप्ति:** हिंदी पत्रकारिता एवं जनसंचार माध्यम हेतु आवश्यक व्यावसायिक कौशल प्राप्त करना छात्रों को साध्य होगा। **PO11.हिंदी भाषाविज्ञान की समझ:** हिंदी भाषा की प्रकृति को पहचानना और उसका विश्लेषण करने की क्षमता प्राप्त करते हुए भाषा का नए संदर्भों एवं परिस्थितियों में प्रयोग करने का कौशल प्राप्त करना छात्रों को संभव होगा। **PO12.अभिव्यक्तिगत कौशल:** छात्रों द्वारा हिंदी भाषा एवं साहित्य की मौखिक एवं लिखित अभिव्यक्ति का कौशल प्राप्त किया जा सकेगा।

Name of the Program	Program Specific Outcomes (PSOs)
M.A. (HINDI)	**सफलतापूर्वक एम .ए.(हिंदी)उपाधि प्राप्त करने के उपरांत छात्र -** PSO1.सृजनात्मकता एवं संभाषण कला प्राप्त कर पाएँगे ।
	PSO2.साहित्य की विविध विधाओं का स्वरूपात्मक ज्ञान प्राप्त कर पाएँगे।
	PSO 3अनुवाद, माध्यम लेखन एवं समाचार लेखनजैसे व्यावसायिक कौशल हाँसिल कर पाएँगे।
	PSO 4. हिंदी साहित्य के इतिहास से अवगत होंगे ।
	PSO 5. साहित्यशास्त्र से परिचित होंगे ।
	PSO 6.भाषाविज्ञान का सामान्य परिचय प्राप्त करेंगे ।

Rayat Shikshan Sanstha's

Mahatma PhuleMahavidyalay, Pimpri, Pune-17

DEPARTMENT OF HINDI(2021-22)

स्नातकोत्तर हिंदी (PG) पाठ्यचर्याओं की उपलब्धियाँ(Course Outcomes-COs)

Course Outcomes (COs)-P.G.

Sr. No.	Class	Couse Code	Course Name	Course Outcome
1.	M.A. I (प्रथम अयन)	10501	पाठ्यचर्या -1 मध्ययुगीन काव्य	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO 1. हिंदी की मध्ययुगीन काव्यप्रवृत्तियों का परिचय प्राप्त करेंगे। CO 2. मध्ययुगीन काव्य के प्रतिनिधि कवियों के व्यक्तित्व एवं कृतित्व से परिचित होंगे। CO 3. मध्ययुगीन काव्य की प्रासंगिकता(Relevance) समझ सकेंगे। CO 4. मध्ययुगीन काव्य की भाषाशैली से अवगत होंगे। CO 5. मध्ययुगीन काव्य के समीक्षा कौशल को विकसित कर पाएँगे। CO 6. मध्ययुगीन कवियों के दोहों और पदों की प्रस्तुति करने में सक्षम होंगे। CO 7.जीवनमूल्य हाँसिल कर सकेंगे।
		10502	पाठ्यचर्या -2 कथासाहित्य	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO 1. गद्य की उपन्यास और कहानी विधा का तात्विक परिचय प्राप्त करेंगे । CO 2. छात्रों के उपन्यास और कहानी विधा की समीक्षा कौशल का विकास होगा। CO 3.साहित्यिक रचना का आस्वादन लेने की क्षमता विकसित होगी। CO 4. सृजनात्मक क्षमता का विकास संभव होगा। CO 5. तुलनात्मक अध्ययन क्षमता में वृद्धि होगी। CO 6.आलोचनात्मक दृष्टि का विकास होगा। CO 7. जीवनमूल्य हाँसिल कर सकेंगे।
		10503	पाठ्यचर्या -3 भारतीय काव्यशास्त्र	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO 1. काव्य और काव्यशास्त्र का विशेष परिचय प्राप्त करेंगे। CO 2. भारतीय काव्यशास्त्र के विकासक्रम से परिचित होंगे। CO 3. भारतीय काव्यशास्त्र के प्रमुख संप्रदायों /सिद्धांतों का विश्लेषण कर पाएँगे । CO 4. रचना वैशिष्ट्य और मूल्यबोध को परखने की क्षमता का विकास होगा । CO 5.आलोचनात्मक कौशल का विकास संभव होगा ।
		10504	पाठ्यचर्या -4 हिंदी पत्रकारिता	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO 1.हिंदी पत्रकारिता के क्षेत्र से परिचित होंगे। CO 2.पत्रकारिता के क्षेत्र में रोजगार के अवसरों की जानकारी प्राप्त कर सकेंगे । CO 3.पत्रकारिता कौशल का विकास करने में सक्षम होंगे । CO 4.पत्रकारिता की भाषा सीखेंगे । CO 5.हिंदी भाषा और साहित्य के विकास में पत्र-पत्रिकओं का

				योगदान समझ सकेंगे ।
2	M.A. I (द्वतीय अयन)	20501	पाठ्यचर्या -5 कथेतर गद्य साहित्य	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO 1.व्यंग्य ,निबंध,रेखाचित्र और संस्मरण कथेतर साहित्य से परिचित होंगे। CO 2.कथेतर हिंदी साहित्य का तत्वगत अध्ययन करेंगे। CO 3.कथेतर हिंदी साहित्य की आलोचनात्मक दृष्टि विकसित करने की क्षमता रखेंगे। CO 4.कथेतर हिंदी साहित्य का भाषिक अध्ययन करेंगे। CO 5.मौलिक हिंदी लेखन कौशल प्राप्ति करेंगे । CO 6.कथेतर हिंदी साहित्य की प्रासंगिकता समझेंगे।
		20502	पाठ्यचर्या -6 शोध प्रविधि	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO1. शोध प्रविधि से अवगत होंगे । CO2. शोध दृष्टि का विकास कर सकेंगे। CO3. नए शोध-प्रवाहों से परिचित होंगे । CO 4.शोध प्रक्रिया के विविध आयामों परिचय प्राप्त करेंगे । CO 5.शोध और आलोचना के अंतर को समझ सकेंगे । CO 6.शोध प्रबंध लेखन कौशल प्राप्त करेंगे । CO7. संदर्भ ग्रंथ सूची की पद्धतियों की जानकारी रखेंगे । CO 8.शोध प्रबंध टंकण में यूनिकोड का महत्त्व समझेंगे ।
		20503	पाठ्यचर्या -7 पाश्चात्य साहित्यशास्त्र	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO 1. पाश्चात्य साहित्यशास्त्र के विकासक्रम से अवगत होंगे। CO 2. पाश्चात्य साहित्यशास्त्र के प्रमुख सिद्धांतों से परिचित होंगे । CO 3. साहित्यशास्त्रीय समीक्षा कौशल हाँसिल कर सकेंगे । CO 4. पाश्चात्य साहित्यशास्त्र के सिद्धांतों में साम्य-वैषम्य पहचान सकेंगे । CO 5.सृजन ,आस्वादन और आलोचना दृष्टि को विकसित करेंगे। CO 6.नई आलोचना प्रणाली कौशल (new criticism skills) कौशल हाँसिल करेंगे।
		20505	पाठ्यचर्या -8 हिंदी उपन्यास साहित्य	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO 1.हिंदी उपन्यास साहित्य के विकासक्रम से परिचित होंगे । CO 2.पठित उपन्यासों का संवेदना एवं शिल्पगत अध्ययन करेंगे । CO 3.उपन्यास साहित्य के आस्वादन की क्षमता प्राप्त करेंगे । CO 4.उपन्यास साहित्य में प्रतिबिंबित जीवनमूल्यों का परिचय प्राप्त करेंगे । CO 5.उपन्यास मूल्यांकन कौशल हाँसिल करेंगे।

3	M.A.II (तृतीय अयन)	30501	पाठ्यचर्या-9 आधुनिक काव्य (आदर्शवादी, छायावादी तथा अन्य काव्य)	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO 1.आधुनिक काव्य की प्रमुख प्रवृत्तियों से परिचित होंगे । CO 2.आधुनिक काव्य समीक्षा कौशल हाँसिल करेंगे । CO3.आधुनिक काव्य का संवेदना एवं शिल्पगत अनुशीलन कर सकेंगे। CO 4.काव्य-सृजन कला का विकास करेंगे । CO 5.महाकाव्य एवं मुक्तक की अवधारणा समझेंगे ।
		30502	पाठ्यचर्या-10 भाषाविज्ञान	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO 1.भाषा विज्ञान के स्वरुप से परिचित होंगे । CO 2.भाषा विज्ञान के अध्ययन की दिशाओं का परिचय प्राप्त करेंगे । CO 3. छात्रों को भाषा विज्ञान के अनुप्रयोगात्मक पक्ष का बोध होगा । CO 4.साहित्य अध्ययन में भाषा विज्ञान की उपयोगिता समझेंगे । CO 5.स्वनिम,रूपिम एवं वाक्य विज्ञान का अनुशीलन करेंगे ।
		30503	पाठ्यचर्या-11 हिंदी साहित्य का इतिहास	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO 1. हिंदी साहित्येतिहास लेखन से परिचत होंगे । CO 2. हिंदी साहित्येतिहास का कालविभाजन तथा नामकरण समझ सकेंगे । CO 3. आदिकालीन, भक्तिकालीन,रीतिकालीन प्रमुखसाहित्यिक प्रवृत्तियों,रचनाकारों और रचनाओं से परिचय प्राप्त करेंगे।
		30505	पाठ्यचर्या-12 वैकल्पिक – (ख) संचार माध्यम :सिद्धांत और स्वरूप	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO 1. संचार माध्यम और संप्रेषण की अवधारणाओं का परिचय प्राप्त करेंगे । CO 2. संचार माध्यम की अवधारणा और स्वरूप से परिचित होंगे । CO 3. संचार माध्यम की बहुआयामी भूमिका समझ पाएँगे । CO 4. संचार माध्यम कौशल विकसित कर सकेंगे ।
4	M.A.II (चतुर्थ अयन)	40501	पाठ्यचर्या-13 आधुनिक कविता	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO 1.आधुनिक कविता का संवेदना एवं शिल्प पक्ष विश्लेषित कर सकेंगे । CO 2.आधुनिक काव्य की समीक्षा दृष्टि को विकसित करेंगे । CO 3.सृजनात्मक कौशल प्राप्त करेंगे । CO 4.आधुनिक कविता की विविध विधाओं से परिचय । CO 5.छात्रों को आधुनिक कविता के विविध विमर्शों का बोध होगा ।
		40502	पाठ्यचर्या-14 हिंदी भाषा का विकास	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO 1.हिंदी भाषा की ऐतिहासिक पृष्ठभूमि का परिचय प्राप्त करेंगे । CO 2.आधुनिक आर्यभाषाओं से परिचित होंगे । CO 3.हिंदी की स्वनिम व्यवस्था का अनुशीलन करने में सक्षम होंगे । CO 4.छात्रों को हिंदी की रूप रचना का बोध होगा । CO 5.हिंदी भाषा के संरचनात्मक कौशल को विकसित कर सकेंगे ।
		40503	पाठ्यचर्या-15 हिंदी साहित्य का इतिहास (आधुनिक	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO 1. हिंदी गद्य के उद्भव और विकास से अवगत होंगे । CO 2. द्विवेदी युग, छायावाद, प्रगतिवाद, प्रयोगवाद और नई कविता के प्रमुख साहित्यिक प्रवृत्तियों से परिचित होंगे ।

			काल)	CO 3. द्विवेदी युग, छायावाद, प्रगतिवाद, प्रयोगवाद और नई कविता के प्रमुख रचनाकारों से परिचित होंगे। CO 4. द्विवेदी युग, छायावाद, प्रगतिवाद, प्रयोगवाद और नई कविता के प्रमुख साहित्यिक रचनाओं से परिचित होंगे। CO 5. ऐतिहासिक दृष्टि का विकास करने में सक्षम होंगे ।
		40505	पाठ्यचर्या-16 वैकल्पिक – (ख) भारतीय साहित्य	**प्रस्तुत पाठ्यचर्या पूर्ण करने के उपरांत छात्र -** CO 1. भारतीय साहित्य का परिचय प्राप्त करेंगे। CO 2. भारतीय साहित्य की अवधारणा समझ सकेंगे । CO 3. भारतीय साहित्य के अध्ययन की समस्याएँ सुलझा सकेंगे । CO 4. भारतीयता का समाजशास्त्र समझेंगे ।

अध्यक्ष
हिंदी विभाग,
महात्मा फुले महाविद्यालय
पिंपरी, पुणे - 411 017.

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PIMPRI, PUNE-411 017.

रयत शिक्षण संस्थेचे,

महात्मा फुले महाविद्यालय,

पिंपरी, पुणे- १७

मराठी विभाग

2021-22

Program outcomes, Program specific outcomes and Course outcomes

Program specific outcomes

Name of the Program	Program outcome
B.A. Marathi	PSO1. विद्यार्थ्यांचा भाषिक कौशल्यविकास होईल. PSO2. कथा, कविता, कादंबरी, एकांकिका, आत्मचरित्र, प्रवासवर्णन, ललितगद्य या साहित्यप्रकाराचे स्वरूप, घटक आणि प्रकार यांची ओळख होईल तसेच त्यांचे आकलन, आस्वाद आणि विश्लेषण करता येईल. PSO3. विविध क्षेत्रातील मराठी भाषेचे स्थान समजेल व भाषेच्या प्रत्यक्ष वापराचे कौशल्य विकसित होईल. PSO4. विविध क्षेत्रातील कर्तुत्ववान व्यक्तीच्या कार्यांची व विचारांची ओळख होईल. PSO5. विविध क्षेत्रातील कर्तुत्ववान व्यक्तीच्या कार्यांची व विचारांची ओळख होईल. PSO6. साहित्याची भाषा आणि शैलीविषयक विचार समजतील. PSO7. ग्रंथ परिचय, परीक्षण व समीक्षण यातील फरक समजेल. PSO8. विद्यार्थ्यांना नैतिक, व्यावसायिक व वैचारिक मूल्यांची जोपासना करण्याचे ज्ञान मिळेल. PSO9. भारतीय आणि पाश्चात्य साहित्यविचाराच्या आधारे साहित्याची संकल्पना, स्वरूप आणि प्रयोजनविचार समजेल. PSO10. साहित्याची निर्मिती प्रक्रिया समजेल. साहित्यविषयक अभिरूची विकसित होईल . PSO11. साहित्य समीक्षेची संकल्पना, स्वरूप यांचा परिचय होईल. PSO12. मराठी भाषेचा पररभाषासापेक्ष आणि शैलीसापेक्ष विकास विद्यार्थ्यांच्या लक्षात येईल.

	PSO13. विज्ञानसाहित्यविषयक आकलनक्षमता वाढेल. PSO14. मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास प्रारंभ ते इ.स.१६०० या कालखंडातील साहित्याचे आकलन होईल. PSO15. मध्ययुगीन मराठी वाङ्मयाचा स्थूल इतिहास १६०० ते १८१७ या कालखंडातील साहित्याचे आकलन होईल. PSO16. वर्णनात्मक भाषाविज्ञानाचे आकलन होईल. PSO17. संत ज्ञानदेवांचे हरिपाठाचे अभंग व दमयंती स्वयंवर इ.या मध्ययुगीन कालखंडातील साहित्यकृतीचे आकलन होईल. PSO18. संत तुकारामांचे निवडक अभंग, आज्ञापत्र व श्लोक केकावली या मध्ययुगीन कालखंडातील साहित्यकृतीचे आकलन होईल.

Course outcomes (Semester-wise)

Name of the Department	Class	Course code	Course Name	Course Outcome
Department of Marathi	**F.Y.B.A Sem-I**	11021	मराठी साहित्य : कथा आणि भाषिक कौशल्यविकास	CO 1 कथा या साहित्यप्रकाराची ओळख होईल CO 2 कथा या साहित्यप्रकाराचे स्वरूप घटक आणि प्रकार यांची ओळख होईल. CO 3 विविध साहित्यप्रवाहांमधील 'कथा' या साहित्यप्रकाराची ओळख होईल CO 4 विद्यार्थ्यांचा भाषिक कौशल्यविकास होईल.
	F.Y.B.A Sem-II	12021	मराठी साहित्य : एकांकिका आणि भाषिक कौशल्यविकास	CO 1 एकांकिका या साहित्यप्रकाराचे स्वरूप, घटक आणि प्रकार याची ओळख होईल. CO 2 मराठी साहित्यातील निवडक एकांकिकांचे अध्ययन विद्यार्थी करतील. CO 3 एकांकिकां या साहित्यप्रकाराची आवड विद्यार्थ्यांमध्ये निर्माण होईल.
	F.Y.Bcom Sem-I	117 B	भाषा, साहित्य आणि कौशल्यविकास	CO 1 विविध क्षेत्रातील भाषा व्यवहाराचे स्वरूप व गरज समजेल. CO 2 विविध क्षेत्रातील मराठी भाषेचे स्थान समजेल व त्यातील प्रत्यक्ष वापराचा अभ्यास करता येईल. CO 3 विविध क्षेत्रातील मराठी भाषेच्या वापराचे कौशल्य विकसित होईल.
	F.Y.Bcom Sem-II	127B	भाषा, आणि कौशल्यविकास	CO 1 विविध क्षेत्रासाठी लागणारे लेखन कौशल्य विकसित होईल. CO 2 विविध क्षेत्रातील कर्तृत्ववान व्यक्तीच्या

				कार्यांची व विचारांची ओळख होईल. CO 3 विद्यार्थ्यांमध्ये नैतिक, व्यावसायिक व वैचारिक मूल्यांची जोपासना करण्याचे ज्ञान मिळेल.
	S.Y.B.A. (G2) Sem-III	23023	भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार : कादंबरी	CO 1 कादंबरी या साहित्य प्रकाराचे स्वरूप , घटक, प्रकार आणि वाटचाल समजेल. CO 2 नेमेलेल्या कादंबरीचे आकलन, आस्वाद आणि विश्लेषण करता येईल CO 3 विद्यार्थ्यांचा भाषिक कौशल्यविकास होईल.
	S.Y.B.A. (G2) Sem-IV	24023	भाषिक कौशल्यविकास आणि आधुनिक मराठी साहित्यप्रकार :ललितगद्य	CO 1 ललितगद्य या सावहत्य प्रकाराचे स्वरूप , घटक, प्रकार आणि वाटचाल समजेल. CO 2 नेमेलेल्या ललितगद्याचे आकलन, आस्वाद आणि विश्लेषण करता येईल. CO 3 विद्यार्थ्यांचा भाषिक कौशल्यविकास होईल.
	S.Y.B.A. (S1) Sem-III	23021	आधुनिक मराठी साहित्य: प्रकाशवाटा	CO 1 आत्मचरित्र या साहित्यप्रकाराचे स्वरूप आणि संकल्पना समजेल . CO 2 आत्मचरित्र या साहित्यप्रकाराच्या प्रेरणा आणि वाटचाल यांचीओळख होईल. CO 3 ललित गद्यातील अन्य साहित्यप्रकाराच्या तुलनेत आत्मचरित्रचे वेगळेपण समजेल. CO 4 नेमेलेल्या आत्मचरित्रचे आकलन, आस्वाद आणि विश्लेषण करता येईल.
	S.Y.B.A. (S1) Sem-IV	24021	मध्ययुगीन मराठी साहित्य : निवडक मध्ययुगीन गद्य, पद्य	CO 1 मध्ययगुीन गद्य –पद्य साहित्यप्रकारांची ओळख होईल. CO 2 नेमलेल्या अभ्यासपुस्तकातील मध्ययगुीन गद्य-पद्याचे आकलन, आस्वाद आणि विश्लेषण करता येईल.
	S.Y.B.A. (S2) Sem-III	23022	साहित्यविचार	CO 1 भारतीय आणि पाश्चात्य साहित्यविचाराच्या आधारे साहित्याची संकल्पना, स्वरूप आणि प्रयोजनविचारसमजेल. CO 2 साहित्याची निर्मिती प्रक्रिया समजेल . CO 3 साहित्याची भाषा आणि शैली विषयक विचार समजतील.
	S.Y.B.A. (S2Sem-IV	24022	साहित्य समीक्षा	CO 1 साहित्य समीक्षेची संकल्पना, स्वरूप यांचा परिचय होईल. CO 2 साहित्य आणि समीक्षा यांचा परस्पर

				संबंध समजेल . CO 3 साहित्य प्रकारानसुार समीक्षेचे स्वरूप समजेल CO 4 ग्रंथ परिचय , परीक्षण व समीक्षण यातील फरक समजेल.
	S.Y.BSC Sem-III		उपयोजित मराठी	CO 1 मराठी भाषा आणि साहित्य आणि परस्परसंबंधाची जाणीव होईल CO 2 मराठी भाषेचा पररभाषासापेक्ष आणि शैलीसापेक्ष विकास विद्यार्थ्यांच्या लक्षात येईल CO 3 मराठी भाषेची उपयोजनात्मक कौशल्ये विकसित होईल.
	S.Y.BSC Sem-IV		मराठी साहित्य	CO 1 साहित्यविषयक अभिरूची विकसित होईल .CO 2 साहित्यविषयक अभ्यासातून जीवनविषयक समज विकसित होईल . CO 3 विज्ञानसाहित्यविषयक आकलनक्षमता वाढेल.
	S.Y.B.A Sem-I	23025	प्रकाशनव्यवहार आणि संपादन	CO 1 प्रकाशनव्यवहार आणि संपादन याचे कौशल्ये देणे. COCO 2 प्रकाशनव्यवहार आणि संपादन याचे प्रशिक्षण देणे. COCO 3 प्रकाशनव्यवहार आणि संपादनाचे कौशल्ये देणे. COCO 3 प्रकाशन संस्था, जाहिरात संस्था, छापखाने, वृत्तपत्र कार्यालये, वितरण संस्था, ग्रंथ विक्री दुकाने, फ्लेक्स निर्मिती केंद्र, वार्ताहार यांना भेटी.
	S.Y.B.A SEC Sem-II	24025	उपयोजित लेखनकौशल्ये	CO 1 जाहिरात, मुलाखतलेखन आणि संपादन यासाठी आवश्यक कौशल्ये मिळविणे. CO 2 जाहिरात, मुलाखतलेखन आणि संपादन याचे प्रशिक्षण देणे. CO 3 जाहिरात, मुलाखतलेखन आणि संपादन कौशल्ये देणे.
	S.Y.B.A MIL SE Sem-I	23011	मराठी भाषिक संज्ञापनकौशल्ये	CO 1 प्रसार माध्यमांतील संज्ञापनाचे स्वरूप आणि स्थान स्पष्ट केले. CO 2 प्रसारमाध्यमांसाठी लेखनक्षमता विकसित केली.
	S.Y.B.A MIL Sem-II	24011	नवमाध्यमे आणि	CO 1 नवमाध्यमे आणि समाजमाध्यमांसाठी लेखनक्षमता विकसित केली.

			समाजमाध्यमांसाठी मराठी	CO 2 नवमाध्यमे आणि समाजमाध्यमांचा वापर आणि परिणाम याबद्दल चर्चा केली.
	T.Y.B.A. (G-3) Sem-I	35023	भाषिक कौशल्य विकास आणि आधुनिक मराठी साहित्यप्रकार: प्रवासवर्णन	CO 1 मुद्रीत माध्यमांसाठी लेखनकौशल्य आत्मसात होईल . CO 2 प्रवासवर्णन या साहित्यप्रकाराचे स्वरूप,प्रेरणा,प्रयोजने,वैशिष्ट्ये आणि वाटचाल समजेल
	T.Y.B.A. (G-3) Sem-II	36023	भाषिक कौशल्य विकास आणि आधुनिक मराठी साहित्यप्रकार: कविता	CO 1 कविता वाड्मय प्रकाराचे स्वरूप समजेल. CO 2 'रुप कवितेचे' या काव्य ग्रंथाचे आकलन, आस्वाद आणि विश्लेषण करता येईल.
	T.Y.B.A. (S-3) Sem-I	35021	मध्ययुगीन मराठी वाड्मयाचा स्थूल इतिहास प्रारंभ ते इ.स.१६००	CO 1 मराठी वाडमय इतिहास, स्वरूप, प्रेरणा समजेल. CO 2 मध्ययुगीन कालखंडाची सामाजिक सांस्कृतिक पार्श्वभूमी समजेल.
	T.Y.B.A. (S-3) Sem-II	36021	मध्ययुगीन मराठी वाड्मयाचा स्थूल इतिहास १६०० ते १८१७	CO 1 मध्ययुगीन कालखंडाची सामाजिक, सांस्कृतिक पार्श्वभूमी समजेल. CO 2 मराठी भाषा साहित्याचा इतिहास समजून समजेल.
	T.Y.B.A. (S-4) Sem-I	35022	वर्णनात्मक भाषाविज्ञान भाग-१	CO 1 भाषा स्वरूप व त्याचे कार्य समजावून घेता येईल. CO 2 भाषा अभ्यासाच्या शाखा व पध्दती परिचय होईल. CO 3 स्वननिर्मितीची प्रक्रिया समजेल.
	T.Y.B.A. (S-4) Sem-II	36022	वर्णनात्मक भाषाविज्ञान भाग-२	CO 1 मराठीची रूपव्यवस्था समजेल. CO 2 वाक्याविन्यासाचा मराठी भाषेसंदर्भात परिचय होईल. CO 3 अर्थविन्यासाचा परिचय होईल.
	T.Y.B.A. (SEC) Sem-I	35025	कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग-१	CO 1 कार्यक्रमांचे स्वरूप आणि प्रकार समजून घेतले. CO 2 कार्यक्रम संयोजनातील भाषिक कौशल्ये प्राप्त केली.
	T.Y.B.A. (SEC) Sem-II	36025	कार्यक्रम संयोजनातील भाषिक कौशल्ये : भाग-२	CO 1 कार्यक्रम संयोजनातील लेखन कौशल्ये संपादित केली. CO 2 कार्यक्रम संयोजनातील भाषिक कौशल्ये संपादित केली.

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Department of Geography
AY 2021-22

Program outcome (POs)

Name of the Program	Program outcome
BA	**PO1** Students develop a solid understanding of the concepts of "space," "place" and "region" and their importance in explainingworld affairs. **PO2** Students understand general demographic principles and theirpatterns at regional and global scales. **PO3** Students able to locate on a map major physical features,cultural regions, and individual states and urban centers. **PO4** Students understand global and regional patterns of cultural,political and economic institutions, and their effects on the preservation, use and exploitation of natural resources and landscapes. **PO5** Demonstrating proficiency in using geographical research tools including spatial statistics, cartography, remote sensing, GISand GPS. **PO6** Identifying, interpreting and analyzing geographic problemsand processes. **PO7** Formulating a research methodology and executing a formal student-led research project **PO8** To acquaint the utility and application of geography in different region and environment. **PO9** Inculcate a sense of environmental ethics that focus research and concerns on sustainability. **PO10** Develop critical thinking and skills that train students to analyze problems and validate real life solutions. **PO11** Ensure that the lessons are self-directed and lead to lifelong learning. **PO12** Study Tour, Field visits, Project work, City Survey, Oral Examination.

Department of Geography

Program specific outcomes (PSOs)

Name of the Department	Program specific outcome
BA	**PSO1:** Understand the interdisciplinary nature of Geography and to integratethe knowledge of other disciplines to a wide variety of Geographical problems. **PSO2:** Understand the scope, Methodology and application of modernGeography. **PSO3:** Study theoretical and practical concepts of instruments that arecommonly used in most Geography field. **PSO4:** Understand how Geography is useful to solve Social, Economic andenvironmental problems and issues facing our society. **PSO5:** Students will demonstrate significant research and writing expertiseresulting in a meaningful scholarly contribution. **PSO6:** Develop the ability to communicate scientific information andresearch results in written and oral formats **PSO7:** Students will be prepared for advanced-level careers in academia,with governmental research and educational organizations, or within the private sector.

Department of Geography
Course Outcomes (Cos)

Course outcomes (Semester-wise)

Name of the Department	Class	Course code	Course Name	Course Outcome
Geography	F. Y. B. Com. Sem. I	Gg. 115C	Elements of Commercial Geography- I	**Co1**To Create the awareness of about Commercial Geography, Nature, Scope, and Developments. **Co2**Students understand the types of environment and human activities i.e. natural or physical environment and non-physical or cultural environment. **Co3**To introduce the students to the basic concepts Economic activities of Man. **Co4**To Understand the meaning and types of Resources. **Co5**To study the meaning, characteristics and advantage and Disadvantage of Population. **Co6**To acquaint the students with the dynamic aspect of resources and need for their conservation.
Geography	F. Y. B. Com. Sem. II	Gg. 125C	Elements of Commercial Geography- II	**Co1**Students can differentiate between natural and unnatural environment. **Co2**Students understands the effect of environment and geographical conditions on commercial activities. **Co3**Students define environment and human activities. **Co4**To introduce the students to the basic concepts Meaning of Industries, Role of Industrial Development, Factors affecting on Industrial Location, and Industrial Theory. **Co5** To introduce latest Trade and Transport, Way of Transportation. **Co6**To make the students aware about Meaning Tourism and Role of Tourism.
Geography	F.Y.B.A. Sem. I	Gg. 110A	Physical Geography (G1)	**Co1**The students will be familiar with the earth's interior. **Co2**Develop and idea about earth movements and the related topography. **Co3**Acquire knowledge about different types of rock and their origin .Influence of the rocks on land form and topography. **Co4**Getting familiar with the concept of hydrology **Co5**Understanding the processes of erosion, deposition and resulting landforms. **Co6**Understand different theories of the earth.
Geography	F.Y.B.A. Sem. II	Gg. 110B	Human Geography (G1)	**Co1**Understand the basic elements of culture. **Co2**Understand the types and levels ofeconomic activities. **Co3**Understand urban structure and development. **Co4** Gain knowledge about major themes of human

				geography. **Co5**Develop and idea about space and society. **Co6**Know about population –resource relationship.
Geography	S.Y.B.A. Sem.III	Gg. 201A	Environmental Geography (G2)	**Co1**Understand Structure, Components of Atmosohere. **Co2**To acquaints the students with fundamental concepts of environment geography for development in different areas. **Co3**To creates the awareness about dynamic environment among the student. **Co4**Study about Nutrient cycling. **Co5**Gain knowledge about concept, scope of environmental geography and components of environment. **Co6**Acquire knowledge about biodiversity.
Geography	S.Y.B.A. Sem. IV	Gg. 201B	Environmental Geography (G2)	**Co1**The students should be able to integrate various factors of Environment and dynamic aspect of Environmental geography. **Co2**To make aware the students about the problems of environment , their utilization and conservation in the view of sustainable development **Co3**Develop and idea about human-environment relationships. **Co4**Know about environmental programmes and policies. **Co5**Understand environmental problems there cause, effect and remedies. **Co6**Study of sustainable development and environmental management.
Geography	S.Y.B.A. Sem.III	Gg. 220A	Geography of Maharashtra –I (S1)	**Co1**Learn the geography of Maharashtra state. **Co2**Understand the Geographical Personality of Maharashtra. **Co3**Study of Climate, Drainage System, Soils, Natural Vegetation in Maharashtra. **Co4**To help students understand the recent trends in regional studies **Co5**Study of Minerals, Power resources, Human resources in Maharashtra. **Co6**Aware about problems and prospects of Maharashtra.
Geography	S.Y.B.A. Sem. IV	Gg. 220B	Geography of Maharashtra –II (S1)	**Co1**Aware about the problems and prospects of agriculture in Maharashtra. **Co2**Learn the distribution of population an patterns of settlements in Maharashtra. **Co3**Understand the relationship between geographic variations and society in Maharashtra. **Co4**Understand the prospectus of tourism activities in Maharashtra with role of MTDC in development. **Co5**Understand the role of MIDC in industrial development in rural Maharashtra. **Co6**Learn the concepts in rural development.

Geography	S.Y.B.A. Sem IV	Gg. 210A	Practical Geography – I (Scale and Map Projections) (S2)	**Co1**Learn the basic concepts in practical geography. **Co2**Able to develop and use of survey and mapping skills. **Co3** Knowledge about scale. **Co4**Aware of the new techniques, accuracy and map making skills. **Co5** To understand the projection and its types **Co6** Enable to students to use various projection and cartographic techniques.
Geography	S.Y.B.A. Sem.IV	Gg. 210B	Practical Geography – II (Cartographic Techniques, Surveying and Excursion / Village / Project Report) (S2)	**Co1**Learn the basic concepts in practical geography. **Co2**Able to develop and use of map scale and projections. **Co3**To acquaint the students with basics of maps and types of maps **Co4**To give the knowledge in principles of surveying its important and utility in geographical study **Co5** Aware of the new techniques, accuracy and map making skills. **Co6** Knowledge about latitude and longitude.
Geography	T.Y.B.A. Sem. V	Gg. 320A	Geography of India -I (S3)	**Co1**Identify natural regions of India based on physical environment andunderstand the regional variation due todifferences in physical environment. **Co2**Understand the location Physiography, Drainage, Climate, and Vegetation of India. **Co3**To understands river pattern and water resources. **Co4**They can know about their own countries land formation, climate and natural vegetation. **Co5**They can know about their own countries land formation, climate and natural vegetation. **Co6**To acquiring the knowledge about soil resources of India.
Geography	T.Y.B.A. Sem. VI	Gg. 320B	Geography of India -II (S3)	**Co1**The Students know the silent feature, problems and prospects of Agriculture. **Co2**Understand how economic activities in India are determined by both the physical as well as human environment. **Co3**They understand the economic resources of India. **Co4**Understand population of India in termsof their quality and spatial distribution pattern and the prospect and problems of population growth. **Co5**They understand the social distribution of population of their country. **Co6**Develop and idea about regionalization of India.

Geography	T.Y.B.A. Sem. V	Gg. 310A	Geography of Disaster Management-I (G3)	**Co1**Understand the concept of disaster & its relation with Geography. **Co2**To acquaint the students with the utility & application of hazards in different areas & its management. **Co3**aware of the need of protection & disaster management. **Co4**Understand the definition, classification of hazards and disasters **Co5**Gain knowledge about approaches to hazard study. **Co6**Develop and idea about factors, consequences and management of earthquake, landslide, flood and riverbank erosion.
Geography	T.Y.B.A. Sem. VI	Gg. 310B	Geography of Disaster Management-II (G3)	**Co1**To understand the geological and geomorphic disaster and there management. **Co2**Acquire knowledge about human induced disaster. **Co3**To the understand the concept of global environmental issues **Co4** To understand relation between disasters and climate crises. **Co5**To Study previous disaster and there management happened in India **Co6**To understands the magnitude of natural disasters.
Geography	T.Y.B.A. Sem. V	Gg. 301A	Practical Geography- I (Techniques of Spatial Analysis) (S4)	**Co1**Understand the basic concept of Map. **Co2**The students with SOI Toposheets and acquire the Knowledge of Toposheet Interpretation. **Co3**The students with Weather Maps and acquire the Knowledge of its interpretation. **Co4**Understand basic concepts and techniques of Geographical Analysis. **Co5**To study preparation of Thematic Maps. **Co6**Drawing of Maps with the help of Map Projection.
Geography	T.Y.B.A. Sem. VI	Gg. 301B	Practical Geography -II (Techniques of Spatial Analysis, Surveying and Excursion / Village / Project Report (S4)	**Co1**Study of various statistical Techniques in Geography. **Co2**Using Statistical Techniques in order to summarize, represent, analyze and interpret data. **Co3**To understand the explain elementary and essential principles on field of practical work. **Co4**To acquaint students with the spatial and structural characteristics of Practical Geography. **Co5**Introduce the students with Aerial Photographs and Satellite Images and acquire knowledge to interpret it. **Co6**Conducting field visit and preparation of field report on socio-economic data.

Department of Geography (2021-22)

Program outcome (POs)

Name of the Program	Program outcome
M.A./M.Sc.	**PO1** Instill confidence and develop a sense of identity in facing the real world. **PO2** Foster cooperation among students enabling them to connect and contribute towards teamwork activities. **PO3** Develop effective communications skills that promote leadership qualities individually as well as within a group. **PO4** Develop critical thinking and skills that train students to analyze problems and validate real life solutions. **PO5** Prepare objective scientific approach so that students can address research problems in Applied Geography and allied fields. **PO6** Strive towards making enlightened citizens with commitment and empathy to social concerns. **PO7** Inculcate a sense of environmental ethics that focus research and concerns on sustainability. **PO8** Inculcate strong moral and ethical values and a sense of discipline among the students. **PO9** Ensure that the lessons are self-directed and lead to lifelong learning. **PO10** Ability of Problem Analysis **PO11** Conduct Social Survey Project **PO12** Development of Communication Skill and Interaction Power

Department of Geography (2021-22)

Program specific outcomes (PSOs)

Name of the Department	Program specific outcome
M.A./M.Sc.	**PSO1:** Understand not only the place where they live in but also about the lives of people living in other areas of the interconnected world. It also enhances understanding of the relationship between the global and the local level and the outcomes of these relationships (relationship between global processes and their local manifestations). **PSO2:** Have deep knowledge about places, regions and spatial relationship as result of series of inter-related factors of nature, culture and individual human actions. **PSO3:** Make the social and cultural differences (race, ethnicity, gender, age, class) their geographical embeddedness. **PSO4:** Sensitise the need to conserve environment, resources in order to have a more sustainable earth. **PSO5:** Have the theoretical knowledge with local realities by making field visits to different areas. **PSO6:** Use and map the digital spatial data in more rational way. **PSO7:** Understand the paradigm shifts all along with the process of historical development of geography as a subject of learning.

Department of Geography (2021-22)

Course Outcomes (COs):

Course outcomes (Semester-wise)

Name of the Department	Class	Course code	Course Name	Course Outcome
Geography	M.A./M.Sc. Part –I	GGU T111	Principles of Geomorphology	**Co1**Acquire knowledge on the relationship between geomorphic processes and resultant landforms on the earth's surface. **Co2**Could explain the mechanism of plate movement and related tectonic activities. **Co3**Could assess the denudation processes and relate them in the real field. **Co4**Well versed with evolutionary concepts of various landforms from different climatic regions. **Co5**Develop and idea about geomorphology and different types of fundamental concepts. **Co6** Acquire knowledge about slope forms and processes.
Geography	M.A./M.Sc. Part –I	GGUT 112	Principles of Climatology	**Co1**Acquire knowledge about the Earth's atmosphere. **Co2**Apply knowledge about atmospheric pressure and winds influences on climate. **Co3**Understand the role of atmospheric moisture, **Co4**Apply the learned knowledge in day-to-day life role of weather and climatic changes. **Co5** Understand how atmospheric moisture works. **Co6** Understand the importance of the atmospheric pressure and winds.
Geography	M.A./M.Sc. Part –I	GGUT 113	Principles of Economic Geography	**Co1**Explain principal terms, definitions, concept, nature, scope and recent trends in Economic Geography. **Co2**Discuss types of hypotheses in economic geography and formation and testing of hypotheses. **Co3**Explain economic landscape, theories and models. **Co4**Describe resources and explain significance of natural and human resources in economic development. **Co5**Describe different Factors ofProduction and related aspects. **Co6**To Categorizes and compares different countries with their economic development.

Geography	M.A./M.Sc. Part –I	GGUT 114	Principles Population & Settlement Geography	**Co1**will be able to learn about population data sources **Co2**Understand the trends and patterns of the components of population change in India and the world. **Co3**Learn the concepts of the population theories and the population policies and link with population characteristics. **Co4**Get an idea about the settlement system both for rural and urban regions. **Co5**Understand the spatial distribution of rural settlements and can recognize their Shape, size and patterns. **Co6**Can identify different urbanized regions, can categorize settlement hierarchy and size-class distribution of towns
Geography	M.A./M.Sc. Part –I	GGUT 115	Practical in Physical and Human Geography	**Co1**Describe underlying theory and concepts of experiments in course. **Co2**Calculate agricultural efficiency and analysis of methods, network structures, Lorenz curve and location quotient, logarithmic graph papers, child women ratio, age sex pyramid & dependency ratio, infant mortality rate and age specific mortality and population growth rate and population projection. **Co3**Apply gravity model and nearest neighbor analysis **Co4**Document their results, using correct procedures and protocols. **Co5**Perform a quantitative analysis of experimental data including use of computational and statistical methods where relevant. **Co6**The student will be able to analyses drainage network, Drainage basin relief analysis, climatic elements and climatic classification.
Geography	M.A./M.Sc. Part –I	GGUT -121	Geoinformatics - I	**Co1**Understand the elements of geoinformatics. **Co2**GIS Applications, GIS Tasks- input, manipulation, management **Co3**Apply database and Data models **Co4**Apply structuring of spatial data **Co5**Data analysis: SQL attributes. **Co6**Apply knowledge Spatial data analysis.

Geography	M.A./M.Sc. Part –I	GGUT -124	Agricultural Geography	**Co1**Will be able to understand about the determinants of agricultural land use. **Co2**Have an idea on the concepts, trends and patterns of land holdings **Co3**Will know about the agriculturalregions in the world and in India. **Co4**To aware about different models in agricultural geography. **Co5**To know about different agricultural revolution and use of technology in agriculture. **Co6**To know about the importance of sustainable agriculture.
Geography	M.A./M.Sc. Part –I	GGUT -128	Industrial Geography	**Co1.**To understands the classification, evolution of Industry. **Co2**To get knowledge about Industrial Theory with present day relevance **Co3**To know about Industrial policy ofIndia, Industrial labor class, labor law. **Co4**To identify the Problems and issues of related to industry, resources, market **Co5** Know about the various industrial occupations. **Co6** Inculcate the knowledge of changing dynamics in the industrial sector that will help them in their research studies
Geography	M.A./M.Sc. Part –I	GGDP-131	Practical in Surveying	**Co1**Students get to physically verify the problems and issues related to urban and Rural areas by visiting the spot and interacting with the various stakeholders of the region. **Co2**To Measure a physical object/ area of a geographical space with survey instrument; Mathematical Calculation and drawing of a map/ plan. **Co3**Process of primary data collection through different methods. **Co4** Apply the theoretical knowledge gained in the practical aspects by using theodolite, dumpy level in the field **Co5** Develop the skill of spatial data acquisition, management, analysis and mapping **Co6** Applying the knowledge in producing appropriate and accurate cartographic images in dissertation work
Geography	M.A./M.Sc. Part –I	GGDT -132	Geography of Disaster Management	**Co1**Will able to understand the concepts of hazards and disasters. **Co2**Will know the different types of hazards and disasters. **Co3**Will understand the causes and consequences of hazards and disasters. **Co4**Will have an idea disaster management of hazards and disasters. **Co5** Develop an idea about factors, consequences and management of earthquake, landslide, flood and riverbank erosion. **Co6** Acquire knowledge about human induced disaster.

Geography	M.A./M.Sc. Part –I	GGUP-134	Practical of Statistical Techniques for Geography	**Co1**Are able to apply various statistical and cartographic techniques to deal with the available data in resolving geographical issues. **Co2**Can understand the techniques of sampling. **Co3**Knew how to correlate two or more variables. **Co4**Acquire knowledge about spatial measurements of network analysis. **Co5**Gets knowledge how to solve geographical data matrix. **Co6** They can know about the quantitative techniques in geography.
Geography	M.A./M.Sc. Part –II	GGUT-235	Geoinformatics-II	**Co1**Explain definition, concepts and principles, components. **Co2**Describe history of development of remote sensing and GIS in India **Co3**Describe methodologies of extracting data from remotely sensed imagery. **Co4**Explain processing and analysis ofdata collected from remote sensors. **Co5** Develop an idea about interpretation and application of remote sensing and GIS. **Co6** They understand about Aerial photography and Satellite Remote Sensing.
Geography	M.A./M.Sc. Part –II	GGUT-236	Geographical Thoughts	**Co1**To identify historical evolution of the progress of geographical knowledge **Co2**To gather knowledge about the philosophical contribution of philosophers and relate with different philosophical theorization. **Co3**To understand gradual Changing world and its geographical analysis, philosophical debate. **Co4**To discuss evolution of thought process the Indian geography. **Co5** Develop an idea about evolution of geographical thinking and disciplinary trends in Germany, France, Britain, and United States of America. **Co6** Know about the trends of geographical thoughts.
Geography	M.A./M.Sc. Part –II	GGUT-240	Urban Geography	**Co1**To gets information and Evolution of urban geography and urbanization in terms of spatio-temporal context. **Co2**To correlate the urban infrastructure associated with urban issues and environment. **Co3**To Symbiotic relationship between Urban economy and urban population. **Co4**Toanalyses critically the urban environmental problem. **Co5** To be able to identify the urban environmental problem and how to solve those problem. **Co6** They will know the characteristics of urban settlement.

Geography	M.A./M.Sc. Part –II	GGDP-241	Practical in Geoinformatics	**Co1**Explain concept, measurements, interpretation of aerial photographs and satellite images. **Co2**Describe GIS-concepts, GIS-definition, application and data models. **Co3**Apply GIS operations- digitization, raster and vector overlay. **Co4**Apply GIS operations **Co5**Digit from a toposheet quadrant. **Co6**Apply knowledge of map algebra and spatial interpolation from a toposheet quadrant
Geography	M.A./M.Sc. Part –II	GGUT-242	Hydrology	**Co1** To introduce the students basic concept of Hydrology. **Co2** Acquire the knowledge onhydrological parameters. **Co3**Apply the knowledge for estimation of groundwater resources and flow. **Co4**Apply the knowledge when society facing challenges like drought, floods, water conflicts, water contamination etc. **Co5**Suggest to public importance of water harvesting and conservation. **Co6** Know the importance of surface water hydrology and surface water resources in India.
Geography	M.A./M.Sc. Part –II	GGUP-247	Practical in Economic Geography	**Co1**Student will understand techniques in agriculture geography **Co2**Student will understand techniques in industrial geography **Co3**Student will understand techniques in transport geography **Co4**Student will use these techniques in research **Co5** Develop knowledge on geographical aspects of economy; types of economic activities **Co6** Conceptualize, demarcate and analyze the geographical determinates of agriculture and manufacturing activities
Geography	M.A./M.Sc. Part –II	GGUT-249	Geography of India	**Co1** To gets Knowledge of regions and regionalization of India with changing time scale. **Co2** To understands the regional issues, conflicts and regional disparities. **Co3** To comprehend the concept of Regional Cooperation. **Co4** To get the Policy Framework inRegional Development. **Co5** They understand the population problems in India. Access the population policies and reaction the countries. **Co6** They understand globalization and Indian economy. And also understand the regional distribution of resource.

Geography	M.A./M.Sc. Part –II	GGUT -250	Oceanography	**Co1**Retrieve the definition, nature andscope of Oceanography. **Co2**To understand categorize of landforms at Ocean floor according to their genesis. **Co3**To understand Classify the relief features in Pacific, Atlantic and Indian ocean **Co4**To Detect and analyze the properties of Ocean water like salinity, Temperature and density. **Co5**To Compare and conclude aboutocean water circulations like waves, tidesand ocean currents. **Co6**Arrange ocean deposits and proposes the ocean as a future resource for man.
Geography	M.A./M.Sc. Part –II	GGUT -251	Research Methodology	**Co1**Get to learn how to prepare a research work starting from identifying the problem, preparing the hypothesis and deriving the objectives to understanding the problem. **Co2**Learn to resolve the issues both quantitatively and qualitatively and finally how to present it as a report. **Co3**Understand formulate research based on specific problems in Geography and Disaster Management. **Co4**Know how to prepare hypothesis and ask research questions. **Co5**Know how to review literature from a specific field of research and how to devise methodologybased on different studies. **Co6**Know how to carry out research based on suitable statistical methods and how to analyses the data.
Geography	M.A./M.Sc. Part –II	GGUT -254	Political Geography	**Co1**will able to learn and understand nature and scope of political geography and its relationship with other disciplines. **Co2**Will understand the theories of politica geography. **Co3**Will understands the concepts and classification of state, nation, frontiers, boundaries, territory etc. **Co4**Will get an idea about electoral geography. **Co5**Will understand the geostrategic views. **Co6**Will have an idea about the conflicts and disputes based on religion, language, Resources and the conflict resolution through global and regional association and organizations.

Geography	M.A./M.Sc. Part –II	GGDP-257	Interpretation of Topographical Maps and GPS Survey	**Co1**Students get to physically verify the problems and issues related to urban and rural areas by visiting the spot and Interacting with the various stakeholders of the region. **Co2**To Measure a physical object/ area of a geographical space with survey instrument; Mathematical Calculation and drawing of a map/ plan. **Co3**Process of primary data collection through different methods, interaction and Knowledge of analysis of real society, identification of physio-socio-economic issues, connects social issues and geographical knowledge. **Co4** To define and classify maps. **Co5** Interpret SOI an OS toposheet maps. **Co6**To gain about GPS survey.
Geography	M.A./M.Sc. Part –II	GGUT-258	Geography of World	**Co1**To gets Knowledge of regions and regionalization of world with changing time scale. **Co2**Know the importance of climate, soil and natural vegetation. **Co3**To comprehend the concept of Regional Cooperation. **Co4**To get the Policy Framework in country Development. **Co5** To understand the regional issues, conflicts and regional disparities. **Co6** Learn the distributions, density and growth of world population.
Geography	M.A./M.Sc. Part –II	GGUT-258	Dissertation	**Co1**Acquire knowledge for preparation of research problem. **Co2**Know the frame objectives and research questions. **Co3**Know the collection of primary and secondary data. **Co4**Know the application of suitable statical methods according to research problem. **Co5**Acquire knowledge analysis of data on objectives oriented. **Co6**Acquire knowledge to delineate the results and conclusion.

HEAD
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Department of Psychology

Academic Year: 2021-22

Program outcomes (POs)

Name of the Programme	Program Outcome
B.A.	PO1 Identify basic psychological processes and their applications in day to day life. PO2 Create awareness about mental health problems in society. PO3 Apply to quality of life and promoting the good health. PO4. Evaluate multiple, probable causes and correlates of behaviours. PO5 Evaluate to various models of abnormality. PO6 Awareness of personal, Family and social wellbeing. PO7 Describe the all stages of life span and understand its good and bad impact on life PO8 Describe the mapping of human behaviour. PO9 Analyze statistical methods employed in behaviour analysis PO10 Discuss the selection and training programme. PO11 Analyze conduct testing project for behaviour analysis PO12 Analyze statistical methods employed in behaviour analysis

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Department of Psychology (Academic Year: 2021-22)

Program specific outcomes (PSOs)

Name of the Program	Programme Specific Outcomes
B.A.	**PSO1-**Enhancement of stress management of skills. **PSO2-**Able to measure attitude, aptitude, interest, adjustmentskill etc. Within the people. **PSO3-**To interpretation of data and make research. **PSO4-**Illustration of mental disorder and treatment. **PSO5-**Use of psychological test and experiment. **PSO6-**Use of motivation theory at work place. **PSO7** Apply the quality of life and promoting the good health. **PSO8** Describe the Help students to acquire the knowledge about the symptoms, diagnostic criteria, and causes of various psychological disorders **PSO9** Dicriminate the observe, interpret individual differences in behaviour in the lightof sound theoretical systems of personality.

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Department of Psychology (Academic Year: 2021-22)

Course outcomes

Class	Course Code	Course Name	Course Outcome
F. Y. B.A. SEM - I	11221	Foundations of Psychology	**CO-1**Explain the basic psychological processes and their applications inday to day life. **CO-2** Compare the ability to evaluation learning and memory of a life. **CO-3** Classify the personality and intelligence of the individuals by developing their psychological process and abstract potentials. **CO-4** Express the importance of motivation and emotional of the individual **CO.5** Prepare Career Avenues in Psychology **CO-6** Evaluate Behaviour through Methods in Psychology
F. Y. B.A. SEM - II	11222	Introductions to Social Psychology	**CO-1**Identify the basics of social psychology. **CO-2** Match The nature of self, attitude and prejudice of the individual. **CO-3** Assess the interactional processes, love and aggression in our day today life. **CO-4** Understand group dynamics and individual in the social world. **CO-5** Discuss the social perception **CO-6** Support the Formation of attitude and Prejudice eradication
S.Y.B.A. SEM - III	23221	Psychology Of Abnormal Behaviour- I	**CO-1** Classify the symptoms, diagnostic, criteria and causes of various psychological disorder. **CO-2** Evaluate multiple, probable causes andcorrelates of behaviours. **CO-3** Create awareness about mental health problemsin family and society. **CO-4** Evaluate the critiques, limitations, implications of diagnosis and classifications of psychological diseases. **CO-5** Describe the DSM and ICDS **CO-6** Identify the stress disorders
S.Y.B.A. SEM - III	23222	Development Psychology	**CO-1** Analyze the influences of various factors on development. **CO-2**Difine basic concept of human development forces. **CO-3** Compare birth and birth complication.

			CO-4 Use development of language. **CO-5** Formulate cognitive development process. **CO-6** Describe the all stages of life span and understand its good andbad impact on life.
S.Y.B.A. SEM - III	23223	Health Psychology	**CO-1** Definehealth psychology and arriveat the introduction to the roll of psychology in health. **CO-2** Plan the nature of stress and copping. **CO-3** Identify the various factors related to healthand diseases. **CO-4** Apply the quality of life and promoting the good health. **CO-5**. Evaluate the Physical Self, Achieving Self, Social Self & Private Selfood health **CO-6** Deside the life and Health Behaviour -
S.Y.B.A. SEM - IV	24221	Psychology of Abnormal Behaviour- II	**CO-1**Explain the descriptions, and theories underlying diagnostic nosology of psychiatric disorders. **CO-2** Apply benefits, critiques, limitations, and implications of diagnosis and classification **CO-**3Describe the Help students to acquire the knowledge about the symptoms, diagnostic criteria, and causes of various psychological disorders .**CO-**4 Anayze multiple probable causes and correlates of behavior **CO-5** Create awareness about mental health problems in society. **CO-6** Evaluate the Learning Disorders: Nature, Type Symptoms, Diagnostic Criteria & Causes
S.Y.B.A. SEM - IV	24222	Theories of Personality	**CO-1** Define concept of personality with various theories of personality on the basis of personality psychology. **CO-2** Explain the different frame work and theoretical aspects of personality. **CO-3** Dicriminate the observe, interpret individual differences in behaviour in the lightof sound theoretical systems of personality. **CO-4** Hypothesize the comprehensive overview of the theories of personality **CO-5** Memorize to Psychodynamic perspective **CO-6** CompareTrait & Motivation, Emotion perspectives
	24223	Positive	**CO-1** Identify positive psychology as the

S.Y.B.A. SEM - IV		Psychology	science of happiness, human strengths, positive aspects of human behavior and 'psychology of well-being. **CO-2** How we lead our lives, find happiness and satisfaction, and face life's challenges **CO-3** Show the positive psychology has become an evolving mosaic of research and theory from many different areas of psychology. **CO -4** Recognize personal goals. **CO-5** Apply toPositive beliefs, Virtue and Strengths of Character. **CO-6** Analyze Gender and happiness
T.Y.B.A. SEM - V	35223	Industrial and Organisation Psychology	**CO-1** Describe the industrial and organizational psychology. **CO-2** Discuss the selection and training programme. **CO-3** Evaluating job performance andapplication. **CO-4** Apply motivation at the workplace. **CO-5** Describe the leadership, leadership qualities and function of leaders of industrial psychology. **CO-6** Explain the new concept 'engineering psychology' for easier work for workers .
T.Y.B.A. SEM - V	35221	Psychological Testing (Theory) + (1)Testing Project	**CO-1**Describe the concept of psychological test, reliability, validity and norms **CO-2** Classify and categorize psychological tests, reliability- validity-norms types **CO-3** Identify the reliability and validity of psychological tests **CO-4** Evaluate the types of norms **CO-5** Analyze conduct testing project for behaviour analysis **CO-6**.Explain the reliability and validity of tests.
T.Y.B.A. SEM - V	35222	Psychological Tests + (1) Statics (Practical)	**CO-1** Describe the mapping of human behaviour. **CO-2**-Explain the general ability testing, personality, adjustmentand attitude. **CO-3** Classify the conducttesting and evaluateintellectual ability personality traits, adjustment and attitudes of participant.Analyze statistical methods employed in behaviour. **CO-4** Conduct testing and evaluate intellectual ability, personality traits, adjustment and attitudes of participants.

			CO5 : Analyze statistical methods employed in behaviour analysis **Co-6** Select ethical issues in test construction .
T.Y.B.A. SEM – VI	36223	Applied Psychology	**CO-1** Describe the concept of applied psychology, educational psychology, family structure and developmental patterns. **CO-2** Know the clinical psychology related mechanisms, social issues, and criminal behavior. **CO-3** Classify the intellectual ability, abnormality, criminal behavior. **CO4** Identify the problems and solutions in the field of education, **CO-5** Evaluate the interpersonal relations. **CO-6** Apply psychological remedies to assess abonormal behaviour, to tackle the social issues and to rectify the problematic behaviour..
T.Y.B.A. SEM – VI	36221	Experimental Psychology Theory + (1) Research Project	**CO-1** Describe the process of experiment in psychology, concept of psychophysics. **CO-2** Explain problem, hypothesis, variables, sampling in experiment. **CO-3** Identify and classify the learning system, methods of psychophysics. **CO-4** Understand the basics of social psychology. **CO-5** Conduct research based project.. **CO-6** Ethical issues in research based project.
T.Y.B.A. SEM – VI	36222	Psychological Experiments + (1) Statics (Practical)	**CO1**-Explain the psychophysics , various cognitive processes of human being. **CO2**-Classify and compare psychological experiments. **CO3**-Conduct laboratory experiments. **CO4**-Analyze statistical base of human behaviour. **CO-5** Identify and classify the learning system, methods of psychophysics. **CO-6** Ethical issues in research based experiments..

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The Outcomes of UG Course, B. A. in Political Science (General)

At the Completion of B. A. in Political Science (General) the Students:

Programme Outcomes (POs) – (Academic Year: 2021-22)

Name of the Program	Program code	Program outcome
Bachelor of Arts	BA	1. Students enable to develop academic proficiency in the subfields of Indian Government and Politics, Comparative Government, International Relations, Public Administration, Political Theory, and Political Ideology. 2. Students enable to develop and be able to demonstrate skills in conducting as well as presenting research in political science. 3. Students enable to analyze political and policy problems and formulate policy options. 4. Students enable to discuss the major theories and concepts of political science and its subfields, and also deliver thoughtful and well articulated presentations of research findings.

Program Specific Outcomes

Name of the Department	Program specific outcome
Department of Political Science	**PO1**: Students enable to discuss about Indian Constitution and Political process. **PO2:** Students enable to discuss Political thinking in western world. **PO3**:Ability to describe Administrative Process and thinking in western thinking, as well as Indian context **PO4:**Capacity to analyses Political Theory and its contemporary impact on civilization **PO5**: Serve as political party member, political adviser, and well citizen of India. **PO6:**Work in elections and political as well as administrative system

FYBA

Course outcomes (Semester I)

Introduction to Indian Constitution

Name of the Department	Class	Course Name	Course code	Course Outcome
Political Science G1	FYBA	Introduction to Indian Constitution	11161	1. Students enable to appreciate the various phases of Indian national movement. 2. Students enable to identify the causes, impact of British colonial rule. 3. Students enable to understand the philosophy of Indian constitution 4. Students enable to understand the fundamental Rights, Duties, and Directive Principles. 5. Students enable to understand federal structure of India

Course outcomes (Semester II)

Name of the Department	Class	Course Name	Course code	Course Outcome
Political Science G1	FYBA	Introduction to Indian Constitution	12161	1. Students enable to Know Structure And Power Of Union Legislature 2. Students enable to Know State Legislature – 3. . Students enable to Know Union Executive 4. Students enable to Know State Executive 5. Students enable to Know Judiciary 6. Students enable to Know Electoral System

SYBA

An Introduction to Political Science

SEM III				
Name of the Department	**Class**	**Course Name**	**Course code**	**Course Outcome**
Political Science G2	**SYBA**	**An Introduction to Political Science**	**23163**	1. Students enable to understand The Study of Political Science 2. Students enable to acquaint with Approaches to Study Political Science such as Normative, Empirical , Feminist 3. Students enable to know Basic Concepts of The State, The Market, The Civil Society. 4. Students enable to understand the various types of Democracy such as Representative, Deliberative, and Participatory.

SYBA An Introduction to Political Science SEM IV				
Name of the Department	**Class**	**Course Name**	**Course code**	**Course Outcome**
Political Science G2	**SYBA**	**An Introduction to Political Science**	**24163**	1. Students enable to understand The Study of Basic Political Values like Liberty ,Equality , Justice 2. Students enable to acquaint with : Rights: Definition and Meaning , Types and Challenges 3. Students enable to know the study of Ideologies such as Nationalism , Socialism ,Fascism 4. Students enable to understand concept of International Organisations like United Nations – Structures, Functions and Challenges , Regional organizations such as – European union , SAARC, OPEC, NATO and MNCs

TYBA: LOCAL SELF GOVERNMENT IN MAHARASHTRA G3
SEM V

Name of the Department	Class	Course Name	Course code	Course Outcome
Political Science G3	**TYBA**	**LOCAL SELF GOVERNMENT IN MAHARASHTRA** **SEM V**	**35164**	1. Students enable to study Evolution of Local Self Government Background of Panchayati Raj in British Era,. Community Development Program – 1952 and Balavantrai Mehata Committee – 1957 2. Students enable to acquaint with Varies committee of Local Self Government in Maharashtra such as Vasantrao Naik Committee – 1960 , L. N. Bongirwar Committee – 1970 and . P. B. Patil Committee – 1985 3. Students enable to know 73rd Amendment and Rural Bodies: Background of 73rd Constitutional Amendmen,. Constitutional change in Article 243 and Gram Sabha & Gram Panchayat **4.** Students enable to know about the 73rd Constitutional Amendment and Rural Bodies : Panchayat Samiti , Zilha Parishad and Schedule XI In Constitution

Name of the Department	Class	Course Name	Course code	Course Outcome
Political Science G3	**TYBA**	**LOCAL SELF GOVERNMENT IN MAHARASHTRA** **SEM VI**	**36164**	1. Students enable to know about the 74th Constitutional Amendment and Urban Bodies such as Urban Bodies before 74th Constitutional Amendment ,Constitutional change in Article 243 and Nagar Panchayat 2. Students enable to know about the 74th Constitutional Amendment and Urban Bodies 12 a. Municipal Council b. Municipal Corporation c. Schedule XII In Constitution 3. Students enable to understand about the Commissions about Local

				Self Government. State Election Commission State Finance Commission and Challenges before Commission **4.** Students enable to acquaint with Future of Local Self Government such as Control on Local Self Government, Limitations of Local Self Government and Challenges before Local Self Government

(Mr. Bijas R.S.)

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Department of History

(Academic Year: 2021-22)

Program outcome

PO 1: Understand the basic themes, concepts, chronology and the Scope of Ancient, Medieval, Modern Indian History.
PO 2: Become a responsible and dutiful citizen.
PO 3 : Be Acquaint with the range of issues related Indian History and its distinctive eras.
PO 4: Realize and follow eternal human values.
PO 5: Understand the history of the countries other than India with comparative approach.
PO 6: Nurture creativity in arts as well as in day-to-day life.
PO 7: Respect core constitutional values like equality, social justice secularism and scientific approach.
PO 8 : Think and argue historically and critically in writing and discussion.
PO 9: Take keen interest in language and literature, both regional and global.
PO 10: Critically recognize the Social, Political, Economic and Cultural aspects of History.
PO 11: Communicate thoughts and ideas fluently and effectively in formal and informal situations.
PO 12 : Prepare for and qualify all types of competitive examinations after graduation.

Course outcomes (Semester-wise)

Name of the Department	Class	Course code	Course Name	Course Outcome
History	FYBA Sem-I	11171	Early India: From Prehistory to the Age of the Mauryas	**Co1**.The course is aimed at helping the student to understand the history of early India from the prehistoric times to the age of the Mauryas. **Co2.**It attempts to highlight the factors and forces behind the rise, growth and spread of civilization and culture of India along with the dynastic history. **Co3**.It also attempts to help the students to understand the contribution of Early Indians to polity, art, literature, philosophy, religion and science and technology. **Co4**.It also aims to foster the spirit of enquiry among the students bystudying the major developments in early Indian history.
History	FYBA Sem-II	12172	Early India: Post Mauryan Age to the Rashtrakutas	**Co1** .The history of India after the Mauryas is very important to understand the developments in early India after the Mauryas, which finally led to the transition to medieval India. **Co2**.The course is aimed at introducing the students to the developments in different parts of India through a brief study of regional kingdoms up to the tenth century C.E. **Co3**.It attempts to highlight the consequences of the foreign invasions, particularly on the polity, economy, society and art and architecture.
History	SYBA G2 Sem-III		History of the Marathas: (1630-1707)	**Co1.**Student will develop the ability to analyse sources for Maratha History. **Co2**.Student will learn significance of regional history and political foundation of the region. **Co3.**It will enhance their perception of 17th century Maharashtra and India in context of Maratha history. **Co4.**Appreciate the skills of leadership and the administrative system of the Marathas.
History	SYBA Sem-III		Medieval India - Sultanate Period	**Co1.** Provides examples of sources used to study various periods in history. **Co2.** Relates key historical developments during medieval period occurring in one place with another. **Co3.**Analyses socio - political and economic changes during medieval period **Co4.**Estimate the foreign invasion and the achievement of rulers
History	SYBA Sem-III		Glimpses of the Modern World - Part I	**Co1.**It will enable students to develop the overall understanding of the Modern World. **Co2.**The students will get acquainted with the Renaissance, major political, socio-religious and economic developments during the Modern World. **Co3.**It will enhance their perception of the history of the Modern World. **Co4.**It will enable students to understand the

				significance of the intellectual, economic, political developments in the Modern World.
History	SYBA Sem-IV		Art and Architecture of Early India (From 3000 B.C. to 12th Century A.D.)	**Co1.**Students will get an overall understanding of the emergence and development of the art and architecture in Early India. **Co2.**They will understand the emergence of the Pottery, Terracotta figures, Ornaments, Town Planning, preparation of seals and coins. **Co3.**They will have an understanding of the art and architecture in early India.
History	TYBA Sem-V		Semester V Indian National Movement (1885-1947)	**Co1.**It will enable students to develop an overall understanding of Modern India. **Co2.** It will increase the spirit of healthy Nationalism, Democratic Values and Secularism among the Students. **Co3.**Students will understand various aspects of the Indian Independence Movement and the creation of Modern India
History	TYBA Sem-V		Semester –V Introduction to Historiography	**Co1.** Students will be introduced to the information and importance of Historiography. **Co2.**Students will be introduced to the different Methods and Tools of data collection. **Co3.**Students can study the interdisciplinary approach of History . **Co4.** Students will learn about the usefulness of History in the 21st century, its changing perspectives, the new ideas that have been invented, and the importance of History in a competitive World. **Co5.**This curriculum develops Research abilityand process of Research Methodology in History
History	TYBA Sem-V		Semester –V Maharashtra in the 19th Century	**Co1.**Student will develop the ability to analyse sources for 19th century Maharashtra History. **Co2.**Student will learn significance of Regional History and Socio- religious reformism foundation of the region. **Co3.**It will enhance their perception of 19th Century Maharashtra. **Co4.**Appreciate the skills of leadership and the Socio-religious System of the Maharashtra.

COURSE OUTCOMES: M.A. History

Academic Year: 2021-22

❖ PSO (Programme Specific Outcomes)

Sr. No	Course	Subject	Learning Outcomes
1	M.A.	PSO (Programme Specific Outcomes)	PSO-1. Sources of the reconstruction of Ancient Indian History, Literary, Archaeological, Numismatics and Epigraphy.
			PSO-2. Origin and Evolution of State-Manorial and Republican tradition
			PSO-3. Different literary tradition and their important Vedic, Buddhist, and Jain.
			PSO-4. History-one of the popular option in competitive examination through its study the students becomes acquainted with his or her National heritage.
			PSO-5. Different Method of archaeological exploration and excavation visits to selective sites.

❖ Course Outcome

Sr. No	Course	Subject	Learning Outcomes
1	M.A. I (Sem.I)	History : Theory &Method	CO-1. gain the theoretical knowledge in subject of history.
			CO-2. Able to understand nature, scope and importance of history.
			CO-3. Developed conceptual knowledge in research methodology and formulated hypotheses
			CO-4. Understand the relation between History and social sciences and increase the irinterdisciplinary approach.
		Evolution of Ideas & Institutions in Early India	CO-1. Analyze Perception Limitations & range of Sources of Ancient India
			CO-2.Understand political ideas & institutions of Ancient India
			CO-3.Able to illustrate emergence of caste based societies in Ancient India.
			CO-4. Able to explain emergence of state in ancient India
		Maratha Polity	CO-1. Able to analyz Administrative Systems of Marathas.
			CO-2. Able to identify Strength & weakness of Maratha Administrative system.
			CO-3. Understand the Socio- Political power Structure of Maratha period.
		Early History of Maharashtra – Satavahana to Yadav.	CO-1.Students understand the social, economic and institutional bases of Ancient India.
			CO-2.It is based on the premise that understanding of Ancient Indian history is crucial to understand Indian history as a whole.
2	M.A. I (Sem.II)	Approaches to History	C O - 1 . understand the different approaches to history
			CO-2.understand Political, Social, Economic and cultural history
			CO-3.gain knowledge in extreme field of the history writing
			C O - 4 . taking interest to find out local history
		Ideas and Institutions in Medieval India	CO-1.able to analyze Perception Limitations & range of Sources of Medieval India
			CO-2.understand political ideas & institutions of Medieval India
			CO-3.able to illustrate emergence of caste based societies in Medieval India.

			CO-4.able to explain emergence of state in Medieval India
		Socio-Economic History of the Marathas	CO-1.understand Basic concept related Medieval Maratha
			CO-2.understand the Social Ideas & institutions of Medieval Maratha.
			CO-3.understand the Economic Ideas & institutions of Medieval Maratha.
			CO-4.understand the Cultural transformation of Medieval Maratha.
		Marathas in 17th and 18th century Power Politics	CO-1. Students get knowledge of concept of Chatrapati Shivaji and his times.
			CO-2. Student view increased of Nationalism and Secularism.
			CO-3. Students get knowledge of administration of shivaji maharaj.
			CO-4. Introduced to student social, economic and religious condition.
3	M.A. II (Sem.III)	Cultural History of Maharashtra	CO-1. Write article and present their own view related the topic of modern Maharashtra.
			CO-2. Discuss and summaries current issue in the area of social religious reform movement in Maharashtra.
		Intellectual History of the Modern World	CO-1.understand the Renaissance, Scholasticism & it's Impact on the world
			CO-2.understand the intellectual revolution in 17th & 18th Century
			CO-3.understand the major concepts & ideology in modern west
			CO4: understand Progress of Science & technology
		Economic History of Modern India	CO-1."History of Modern India" is a very important section as far as the Syllabus of any competitive examination, especially Civil Services exams.
			CO-2. Importance of Modern Indian history For competitive examination
		East Asia : Japan (1853-2000)	CO-1. The course is designed to help the students to know Japanese history especially afterthe opening up of Japan;
			CO-2. Japan's modernization and its impact; post World War II developments and Japan's role in world politics.
3	M.A. II (Sem.IV)	Modern Maharashtra : History of Ideas	CO-1. Understand Meaning of the Micro to Macro history
			CO-2. Understand the conceptual difference

			between of the Indian Modernity &European modernity and also Indian Renaissance & European Renaissance.
			CO-3. Visit Library and take interest to read the biographies and original literature of eminent personalities related to 19 century of Maharashtra
		World after World War II (1945-2000)	CO-1. Understand the political development in the world after Second World War.
			CO-2. Developed the understanding of new military and political ideas and institutions
			CO-3. Understand the process and impact of globalization
		Debates in Indian Historiography	CO-1. The course is designed to introduce the student to some of the issues that have beendebated by historians and to introduce some perspectives with reference to Indian History.
		Modern India (History of Modern India)	CO-1. Understand of various term, Key concept related to Economic History of India.
			CO-2.Understand the change & continuity of Indian Economics system From Ancient to colonial period.
			CO-3.take interest to read various book related to British policy and ideology to ruling India.
			CO-4. Discuss the contemporary Economical issues in classroom and related to be history.

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Rayat Shikshan Sanstha's
Mahatma Phule Mahavidyalaya, Pimpri Pune -17
Department of Economics
(Academic Year: 2021-22)
Programme Outcomes (POs)

Name of the Program	Program Outcomes
Bachelor of Arts	**After successfully completing B.A. Economics Programme students will be able to: Program Outcomes (PO's) Economics** **PO1: Technical knowledge:** use various tools for economic analysis and apply knowledge of the Micro and Macro approach for the personal benefit and for the benefit of national and the global economy. **PO2 : Problem analysis:** recognize formulate and study the problems of various sectors of the Indian economy, regional economy and the global economy with the help of the economic ways of thinking, theories, concepts and laws **PO3: Design/development of solutions:** Design policies and solutions for the economic problems of India and the global economy at large. **PO4 :Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern IT tools for economic analysis **PO5: The student and society:** Apply the knowledge of economic concepts, laws and theories, for a better economic environment for the society at large. **PO6: Environment and sustainability:** develop an economic way of thinking leading to the economic growth, protecting environment with sustainable development **PO7 : Ethics:** inculcate ethical values in the business and the government sector and define responsibilities and norms in the business environment and the policies of the government in the context of the welfare of the society **PO8: Individual and team work:** work efficiently as an individual, and as a part or leader of a team, having interdisciplinary approach through the study of International Economics. **PO9**: **Communication:** Communicate effectively on the economic activities with the community and the society through the acquiring knowledge of the national and the global economy. **PO10**: **Project management and finance:** apply knowledge of the economic principles, functioning of various sectors of the economy as an individual on

	various private and government projects and devise sources of finance. **POS11: Life-long learning:** understand the nature of any discipline as a continuous process of development and welfare of the human being **POS12: Analysis** : to analyze historical and current events from an economics perspective.

Program Specific Outcomes

Name of the Program	Program Outcome
Bachelor of Arts	**PSO**: Explain the basic concepts, laws and theories related to the economic behaviour of the human being. **PSO**: Inculcate the economic way of thinking. **PSO:** Understand the nature of any discipline as a continuous process of development and welfare of the human being. **PSO:** Enable students to understand and comprehend the current business scenario, agricultural scenario and growth in the Indian context. **PSO:** Understand current industrial, service and other sectorial growth in the Indian context. **PSO**: Apply economic analysis in practice.

Rayat Shikshan Sansthas
Mahatma Phule Mahavidyalaya, Pimpri, Pune-17

Department of Economics
(Academic Year: 2021-22)
B.A. Cos, POs and PSOs (Semester -Wise)

Name of the Department	Class	Course Code	Course Name	Course Outcome
Economics	FYBA SEM-I	G-1	Indian Economic Environment	After successfully completing this course, students will be able to: **CO1**-To familiarize the students with the recent developments in the Indian Economy. **CO2**- To provide the students with the background of the Indian Economy with focus on contemporary issues like economic environment. **CO3**-To help the students to prepare for varied competitive examinations. **CO4**-To enable students to understand and comprehend the current business scenario, agricultural scenario and other Sectorial growth in the Indian context. **CO5**-To make the student aware of the developments such as MSMEs, Digital Economy, E-Banking, BPO & KPO, etc.
	FYBA SEM-II	G-1	Indian Economic Environment	**After successfully completing this course, students will be able to:** **CO1**- Students enable to create value in young youth regarding the patriotism. **CO2**- Students enable to understand the various Government of Indian acts their provision and reforms. Students enable to know the salient features in making of Indian constitution. **CO3**- Students enable to appreciate the socio-economic political factors which lead to the Freedom struggle. **CO4**- Students enable to appreciate the fundamental rights and duties and the directive principle of state policy. **CO5**- Students enable to evaluate the evolution, functioning and consequences of

				political parties in India.
	SYBA SEM-I	CC-1C	Financial System	**After successfully completing this course, students will be able to:** **CO1-** Descried evolution of Financial System in the west and in India. CO2- Describe functioning and working of the commercial and cooperative banks. **CO3-** Explain functions and working of the central bank of country and Reserve Bank of India. **CO4-** Explain principles of commercial banks, different types of accounts and customers of various types of these banks.
	SYBA SEM-II	CC-1D	Financial System	**After successfully completing this course, students will be able to:** **CO1-** Examine supply of money in economy and its control by the Reserve Bank of India. **CO2-** Analyse functioning and usage of various types of negotiable instruments used in financial sector of the economy. **CO3-** Evaluate developments and challenges in the sector of the cooperative banking India
	SYBA SEM-I	DSE – 1A	Micro Economics	**After successfully completing this course, students will be able to** **CO1:** Describe basic economic problems and look towards the economy with the microeconomic approaches. **CO2:** Explain division of market from consumer and supply of the products from the producers. **CO3**: Interpret concepts related to utility, demand and supply in market. **CO4:** Describe factors of production involved in process of production and theories related to their pricing.
	SYBA SEM-II	DSE – 2A	Micro Economics	**After successfully completing this course, students will be able to** **CO1:** Analyse process of production in economy, laws and variables related to the production function. **CO2**: Demonstrate various forms of market and price determination concept of firm. **CO3:** Describe welfare economics, and

				variables involved in the welfare function and thoughts of the welfare economists. **CO4**: Apply the tools used for economic analysis.
	SYBA SEM-I	DSE – 2A	Macro Economics	**After successfully completing this course, students will be able to:** **CO1:** Illustrate a macroeconomic approach towards economy in contrast with the microeconomic approach. **CO2:** Make a detailed enquiry into generation, calculation and measurement of national income **CO3:** Describe way of money facilitates exchanges and develop market and the economy.
	SYBA SEM-II	DSE – 2A	Macro Economics	**After successfully completing this course, students will be able to:** **CO1:** Analyse approaches towards value of money and price level in economy. **CO2**: Interpret causes and controlling measures of cyclical fluctuations in economy. **CO3:** Assess macro policies-monetary and fiscal and its applications in the functioning of the economy.
	SYBA SEM- I	SEC-I SEC2A	Basic Concept of Research Methodology -I (Skill Enhancement Course) (SEC)	**After successfully completing this course, students will be able to:** **CO1-** Demonstrate his/her understanding of sampling methods and the ability to use collection of data. **CO2-** Identify the appropriate sample techniques for different kinds of research questions.
	SYBA SEM- II	SEC-II SEC-2B	Basic Concept of Research Methodology – II (Skill Enhancement Course) (SEC)	**After successfully completing this course, students will be able to:** **CO1-** Identify the appropriate source of data in relation to the collection of Research data. **CO2-** Able to classify and present the

				collected data in the form of graph, bar diagram, chart etc.
	TYBA SEM-V	35153	Indian Economic Development (G3)	After successfully completing this course, students will be able to: **CO1:** To relate and recognize the concept and indicators of Economic Development. **CO2:** To describe and analyze the concept and indicators of Human Development **CO3:** To explain the characteristics of Developing and Developed Countries.
	TYBA SEM-VI	36153	Indian Economic Development (G3)	**CO4:** To describe the constraints to the process of Economic Development. **CO5:** To describe and examine the changing structure of planning process in India. **CO6:** To describe and explain the relation between Economic Development and Environment.
	TYBA SEM-V	35151	International Economics	**After successfully completing this course, students will be able to:** **CO1**: To relate and recall the concepts of International Economics and International Trade. **CO2**: To describe and apply the theories of international trade. **CO3**: To explain and comprehend the issues relating to Terms of trade and Balance of Payment.
	TYBA SEM-VI	36151	International Economics	**CO4:** Ability to relate and explain the concept of Exchange Rate and Foreign Exchange Market **CO5**: Ability to describe the trends in Growth, Composition and Direction of India's Foreign Trade **CO6:** Ability to comprehend the issues relating to Foreign Capital and Regional and International Co-Operation.

	TYBA	35152 SEM-V	Public Finance	**After successfully completing this course, students will be able to:** **CO1:** Describe role of Government in an economy and role of public finance in economic development. **CO2**: Describe sources of income, concepts and principles related to public revenue, taxation and status of Indian taxation., public expenditure in India and effects of current trend of growth in public expenditure **CO3:** Examine external and internal debts of government and ways to repay public debts.
		36152 SEM-VI	Public Finance	**CO4:** Illustrate concepts of budgeting and Indian budgeting with special reference to gender budget. **CO5:** Describe purpose and process of deficit financing in economy and trends in deficit financing in India. **CO6:** Describe federal finance in India and problems related to centre and state financial relationships.

	TYBCOM	302(A)	Indian and Global Economic Development	After successfully completing this course, students will be able to: **CO1**: Describe comparison of Indian economy with developed economies. **CO2**: Explain agricultural development in India science independence. **CO3:** Describe industrial development in India since 1991. **CO4**: Describe concept of Human Resource Development in world. **CO5:** Explain role of foreign capital in global economic development. **CO6:** Illustrate concept of balance of trade and balance of payment in relation with foreign trade **CO7:** Elaborate objectives and structure of reginal and international economic cooperation.

Name of the Department	**Class**	**Course code**	**Course Name**	**Course Outcome**
Economics	**M.A. II SEM-III**	**EC-3001**	**Macro Economic Analysis – I**	On completion of the course, students are able to **CO1:** To understand Macroeconomics is not only a scientific method of analysis; but also a body of empirical economic knowledge. **CO2:** To stimulate among the students an awareness on macroeconomic challenges and policy management in progressive nations **CO3:** To discuss the modern developments in macroeconomics.

				CO4: To understand Determination of output and employment Effects of change in Aggregate Demand and Supply Curves - Classical Approach **CO5:** To understand Fiscal policy and crowding out effect, Optimum Policy mix with IS-LM Model. **CO6:** To provide a thorough understanding of the principles of macroeconomics and the application of macro economic concepts in real-life situations.
		EC-3002:	**Growth and Development –I**	On completion of the course, students are able to **CO1:** Understand conceptualizing growth and development, Characteristics of LDCs. **CO2:** To understand the world distribution of income and Development gap. **CO3:** Understand concept of poverty & development **CO4:**Understand population & human development **CO5:** To understand Theories of Economic Growth and Development **CO6:** To analyze and evaluate the obstacles in the process of economic growth anddevelopment
		EC-3003	**Research Methodology -I**	On completion of the course, students are able to **CO1:** To learn and appreciate alternative methodologies in terms of sampling designs, data collection techniques and in the methods of data analysis. **CO2:** Understand concepts of research designing **CO3:** Understand concepts of

				hypothesis testing methods **CO4:** Able to understand methods of Correlation **CO5:** Understand contents of report writing **CO6:** To enable an understanding of Research and its methods under various areas of economics.
		EC-3004	**Demography -I**	On completion of the course, students are able to **CO1:** To understand Nature, Scope and Relationship between development and Population Growth. **CO2:** Understand various theories of Population. **CO3:** To understand Structure and characteristics Indian population. **CO4:** To understand an analysis of Indian population policy. **CO5:** To provide an understanding of Demography and its application under various topics under economics. **CO6:** To demonstrate the practical and the applied aspects of Demography and the study of Population and its relation to Economics.
	M.A. SEM-IV	**EC-4001**	**MACRO ECONOMIC ANALYSIS II**	On completion of the course, students are able to **CO1:** To understand theories of money supply and liquidity. **CO2:** To understand Classical and Modern theories of Demand for Money and Price. **CO3:** Students will be able to describe the determinants of the

				demand for money, the supply of money and interest rates and the role of financial institutions in the economy. **CO4:** Students will be able to define fiscal and monetary policies and how these affect the economy. **CO5:** To understand various Theories of Interest Rates. **CO6:** To provide a thorough understanding of the principles of macroeconomics and the application of macroeconomic concepts in various contexts.
		EC-4002	**GROWTH & DEVELOPMENT- II**	On completion of the course, students are able to **CO1:** Understand the role of agriculture and Industry in development. **CO2:** To understand the employment argument Police Environment. **CO3:** Understand issues & techniques of economic growth. **CO4:** Students will be able to describe Trade as an engine of growth. **CO5:** To understand the role of IMF, World Bank, FII and FDI. **CO6:** To analyze and evaluate the obstacles in the process of economic growth and development
		EC-4003	**RESEARCH METHODOLOGY-II**	On completion of the course, students are able to **CO1:** To learn and appreciate alternative methodologies in terms of sampling designs, data collection techniques and in the methods of data analysis. **CO2:** Understand concepts of research

				designing **CO3:** Understand concepts of hypothesis testing methods **CO4:** Able to understand methods of correlation **CO5:** To enable an understanding of Research and its methods under various areas of economics. **CO6:** To demonstrate the practical and the applied aspects of research in relation to Economics.
		EC-4004	**ECONOMICS OF ENVIRONMENT**	To develop an understanding of the economics of environment in the theoretical aswell as practical context. **CO1:** To discuss various analytical tools to comprehend various environmental issues. **CO2:** Analyze and evaluate the subject with reference to various aspects of the economics of environment. **CO3:** Develop an understanding of the economics of environment and various **CO4:** Analytical tools to comprehend environmental issues

Rayat Shikshan Sanstha's
Mahatma Phule Mahavidyalaya, Pimpri Pune -17
Department of Economics
(Academic Year: 2021-22)
Programme Outcomes (POs & PSOs)

Name of the Program	Program Outcomes
Master of Arts	After successfully completing M.A. Economics Programme students will be able to: Program Outcomes (PO's) Economics **PO1:** Technical knowledge: use various tools for economic analysis and apply knowledge of the Micro approach for the Individual benefit. **PO2 :** Problem analysis**:** student should be able to evaluate Micro economic concepts, models and its use in real life situations. **PO3:** Design/development of solutions: Design policies and solutions for the economic problems of India and the global economy at large. **PO4:** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern IT tools for economic analysis **PO5:** Environment and sustainability**:** develop an economic way of thinking leading to the economic growth, protecting environment with sustainable development **PO6:** Ethics**:** inculcate ethical values in the business and the government sector and define responsibilities and norms in the business environment and the policies of the government in the context of the welfare of the society. **PO7:** Prepare students to develop critical thinking to carry out investigation about various socio-economic issues objectively while bridging the gap between theory and practice. PO8: Equip the student with skills to analyse problems, formulate an hypothesis, evaluate and validate results and draw reasonable conclusions thereof. **PO9:** Prepare students for pursuing research or careers that provide employment through entrepreneurship and innovative methods. Because today's unemployment problem can also be solved by developing the micro and small entrepreneurship **PO10:** Prepare students to develop own thinking /opinion regarding current national or international policies and issues. **POS11: To** understand the nature of any discipline as a continuous process of development and welfare of the human being **POS12: T**o analyze historical and current events from an economics perspective.

Rayat Shikshan Sansthas Mahatma Phule Mahavidyalaya Pimpri, Pune 17 MA Economics Cos				
Name of the Department	**Class**	**Course code**	**Course Name**	**Course Outcome**
Economics	**M.A. I SEM-I**	EC-1001	**Micro Economic Analysis – I**	On completion of the course, students are able to 1) To provide a thorough understanding of the principles of economics 2) To enable students to apply micro economic concepts in various contexts. 3) To enable understanding the basic theories in microeconomics such as demand theory, production theory, market structures. 4) To discuss the modern developments in micro economics such as Modern Demand theories.
	M.A. I SEM-II	EC-1001	**Micro Economic Analysis – I**	1)To provide a thorough understanding of the principles of economics 2)To enable students to apply micro economic concepts in various contexts. 3)To enable understanding the basic theories in microeconomics such as demand theory, production theory, market structures.
Economics	**M.A. I SEM-I**	EC-1002	PUBLIC ECONOMICS I	**1)** To develop an understanding of the changing role of the government and the fiscal functions of the modern governments. **2)** To discuss and deliberate on the concepts and theories in public economies like public policy, principles of taxation, theories of public expenditure, etc. **3)** To develop an

				understanding of various policies in public economics like fiscal policy, taxation policy, public debt policy, public expenditure policy etc.
Economics	**M.A. I SEM-II**	EC-2002	PUBLIC ECONOMICS II	1) To develop an understanding of various policies in public economics like fiscal policy, public debt policy, fiscal finances, etc. 2) To help the students to understand the normative policies and compare it with the policies framed and followed by Indian economy. 3) To impart information to the students about the reforms like taxation reforms in India.
Economics	**M.A. I SEM-I**	EC 1003-	INTERNATIONAL TRADE	1) To develop an understanding of the theoretical concept in international trade. 2) To analyze international economics with reference to terms of trade, trade policy, trade agreements etc. 3) To provide knowledge to students regarding recent developments and changes in international banking, international banking agreements etc. 4) To make the students understand role of international economic organization and global crisis development.
Economics	**M.A. I SEM-II**	EC - 2003-	INTERNATIONAL FINANCE	5) To develop an understanding of the theoretical concept in international finance Balance of Payments, exchange rate policies, capital flows, etc. 6) To compare and contrast the scenarios on international trade in India vis-à-vis the world economy. 7) To provide knowledge to students regarding recent developments and changes in

				international banking, international banking agreements etc.
Economics	**M.A. I SEM-II**	EC.1004	-RURAL ECONOMICS	1) To develop an understanding of rural economics in the theoretical as well as practical context. 2) To discuss and debate the various issues and challenges faced by rural economies with reference to the farm and non-farm sector 3) To describe the growth and development of rural economies, etc.
Economics	**M.A. II SEM-III**	**EC-3001**	**Macro-Economic Analysis – I**	On completion of the course, students are able to 1) To understand Macroeconomics is not only a scientific method of analysis; but also a body of empirical economic knowledge. To stimulate among the students an awareness on macroeconomic challenges and policy management in progressive nations 2) Understand various concepts of National income. 3) To discuss the modern developments in macroeconomics. 4) To understand Determination of output and employment Effects of change in Aggregate Demand and Supply Curves - Classical Approach 5) Understand nature classical & Keynesian theories of employment 6) To understand Fiscal policy

				and crowding out effect, Optimum Policy mix with IS-LM Model.
		EC-3002:	**Growth and Development –I**	On completion of the course, students are able to 1) Understand conceptualizing growth and development, Characteristics of LDCs. 2) Toenable learning and understanding of the basic concepts and process to measure the growth and economic development etc. 3) To understand the world distribution of income and Development gap. 4) Understand concept of poverty & development 5) Understand population & human development 6) To understand Theories of Economic Growth and Development To analyze and evaluate the obstacles in the process of economic growth anddevelopment
		EC-3003	**Research Methodology-I**	On completion of the course, students are able to 1) To learn and appreciate alternative methodologies in terms of sampling designs, data collection techniques and in the methods of data analysis. 2) Understand concepts of research designing 3) Understand concepts of hypothesis testing methods 4) Able to understand measuring central tendency 5) Able to understand dispersion and co-efficient 6) Able to understand methods of Correlation.
		EC-3004	**Demography-I**	On completion of the course,

				students are able to 1) To understand Nature, Scope and Relationship between development and Population Growth. 2) Understand various theories of Population. 3) To understand Structure and characteristics Indian population. 4) To understand an analysis of Indian population policy. 5) To provide an understanding of Demography and its application under various topics under economics. 6) To demonstrate the practical and the applied aspects of Demography and the study of Population and its relation to Economics.
	M.A. SEM-IV	**EC- 4001**	**MACRO ECONOMIC ANALYSIS II**	On completion of the course, students are able to 1) To understand theories of money supply and liquidity. 2) To understand Classical and Modern theories of Demand for Money and Price. 3) Students will be able to describe the determinants of the demand for money, the supply of money and interest rates and the role of financial institutions in the economy. 4) Students will be able to define fiscal and monetary policies and how these affect the economy. 5) To understand various Theories of Interest Rates. 6) To provide a thorough understanding of the principles of macroeconomics and the application of macroeconomic concepts in various contexts.

		EC- 4002	**GROWTH & DEVELOPMENT- II**	On completion of the course, students are able to 1) Understand the role of agriculture and Industry in development. 2) To understand the employment argument Police Environment. 3) Understand issues & techniques of economic growth. 4) Understand some growth models 5) Students will be able to describe Trade as an engine of growth. 6) To understand the role of IMF, World Bank, FII and FDI . 6) To understand the role of the government and markets in the developmental process
		EC-4003	**RESEARCH METHODOLOGY-II**	On completion of the course, students are able to 1) To learn and appreciate alternative methodologies in terms of sampling designs, data collection techniques and in the methods of data analysis. 2) Understand concepts of research designing 3) Understand concepts of hypothesis testing methods 4) Able to understand dispersion and co-efficient 5) Able to understand methods of correlation 6) To demonstrate the practical and the applied aspects of research in relation to Economics.
		EC- 4004	**ECONOMICS OF ENVIRONMENT**	1) To develop an understanding of the economics of environment in the theoretical as well as practical context. 2) To discuss various analytical tools to comprehend various

				environmental issues. 3) Analyze and evaluate the subject with reference to various aspects of the economics of environment. 4) To Develop an understanding of the economics of environment 5 5) To develop Analytical tools to comprehend environmental issues 6) To analyze and evaluate the obstacles in the process of economic environment.

HEAD
Department of Economics
Mahatma Phule Mahavidyalaya
Pimpri, Pune-411 017.

PRINCIPAL
MAHATMA PHULE MAHAVIDYALAYA
PIMPRI, PUNE-411 017.

RAYAT SHIKSHAN SANSTHA'S

MAHATMA PHULE MAHAIVIDYALAYA, PIMPRI, PUNE – 17

DEPARTMENT OF COMMERCE
(ACADEMIC YEAR 2021-2022)

Program Outcomes (POs)

	Program Outcomes
PO1	In depth knowledge, understanding and skills in commerce.
PO2	Build a strong foundation of knowledge in different areas of Commerce.
PO3	Develop the skill of applying concepts and techniques used in Commerce for real life problems.
PO4	Inculcate reading, writing, speaking skills and Business correspondence.
PO5	Creates awareness among society about Law and Legislations related to commerce and business.
PO6	Use effectively recent Trends in Business, Organizations and Industries.
PO7	Communicate effectively about Economic Environment of Country as well as World.
PO8	Use effectively practical skills in real life related to banking and corporate world.
PO9	Provides a platform for overall development and develop knowledge level and awareness about Recent Trends of World
PO10	Use new technologies effectively to communicate ideas in the area of commerce.
PO11	Critically evaluate new research findings, ideas, methodologies and theoretical frame work in specialized study.
PO12	Work collaboratively and productively in groups.

RAYAT SHIKSHAN SANSTHA'S

MAHATMA PHULE MAHAIVIDYALAYA, PIMPRI, PUNE – 17

DEPARTMENT OF COMMERCE
(ACADEMIC YEAR 2021-2022)

Program: B.Com. (Undergraduate)

Program Specific Outcomes (PSOs)

	Program Specific Outcomes (Banking and Finance)
PSO1	Analyze the functioning and operations of the Indian money market, capital market, and foreign exchange market.
PSO2	Identify and describe the basic concepts and processes of the stock market, including primary and secondary markets, merchant banking, IPOs and FPOs.
PSO3	Understand the types and processes of stock trading, including cash market, future and option market.
PSO4	Analyze the functions and workings of non-banking financial institutions in India, including lease financing, mutual funds, housing finance companies, life insurance companies, and general insurance companies.
PSO5	Develop an understanding of the regulatory framework governing the banking and finance industry in India, including the legal aspects of various banking transactions and their implications for both bankers and customers.
PSO6	Develop an understanding of the role and responsibilities of paying and collecting bankers, and the legal and practical aspects of bank advances.
PSO7	Analyze the impact of recent developments in the banking and finance industry, including cybercrimes and the Insolvency and Bankruptcy Code, 2016.

	Program Specific Outcomes (Cost and Works Accounting)
PSO1	Demonstrate a solid understanding of fundamental accounting principles, including cost accounting.
PSO2	Apply analytical and problem-solving skills to make informed decisions related to financial management, budgeting and cost control.
PSO3	Communicate financial information clearly and effectively to stakeholders.
PSO4	Apply ethical principles and professional standards in accounting and financial management.
PSO5	Stay current with developments and trends in the accounting and finance industry.
PSO6	Ability to communicate effectively in oral and written forms.
PSO7	Ability to work effectively in a team.

RAYAT SHIKSHAN SANSTHA'S

MAHATMA PHULE MAHAIVIDYALAYA, PIMPRI, PUNE – 17

DEPARTMENT OF COMMERCE
(ACADEMIC YEAR 2021-2022)

Program: M.Com. (Postgraduate)

Program Specific Outcomes (PSOs)

	Program Specific Outcomes (Banking and Finance)
PSO1	Gain knowledge about legal framework in which the Indian banking is working today.
PSO2	Understand of the role of central banking especially in India.
PSO3	Understand of various aspects of foreign exchange market and financing of foreign trade.
PSO4	Creating awareness about structure and working of foreign banking and various instruments of foreign debt and equity market.
PSO5	To keep the students abreast with the innovative practices introduced by RBI in day-to-day banking in India.

	Program Specific Outcomes (Cost and Works Accounting)
PSO1	Able to understand the Scope of Cost Accounting in any business activity.
PSO2	Application of Cost Accounting treatment in relation to Material Cost Accounting, employee cost and overheads.
PSO3	To equip the students with knowledge and skill to design and implement Cost Control through Costing Techniques.
PSO4	Knowledge about recent trends in Cost Accounting.
PSO5	In depth Understanding of basic concepts of cost audit and its applicability in various areas.

RAYAT SHIKSHAN SANSTHA'S
MAHATMA PHULE MAHAIVIDYALAYA, PIMPRI, PUNE – 17
DEPARTMENT OF COMMERCE
(ACADEMIC YEAR 2021-2022)

Course Outcome (COs):

Program	Course Code	Course Name	Course Outcome
F. Y. B.Com. Sem. I & II	112 & 122	Financial Accounting	1. The concepts, nature and purpose of financial statements in relationship to decision making. 2. How to use the fundamental accounting equation to analyse the effect of business transactions on an organization's accounting records and financial statements. 3. How to use a basic accounting system to create the data needed to solve a variety of business problems. 4. How to use accounting information to solve a variety of business problems.
	114A & 124A	Business Mathematics and Statistics	1. Prepare for competitive examination. 2. Understand the concept of simple, compound interest. 3. Know about concept of population, sample & frequency distribution to make decision. 4. Understand technique of different type of Index Number (SENSEX & NIFTHY).
	115A & 125A	Org. Skill Development	1. To introduce the students to the emerging changes in the modern office environment. 2. To develop the conceptual, analytical, technical and managerial skills of student's efficient office organization and records management. 3. To develop the organizational skills of students. 4. To develop technical skills among the students for designing and developing effective means to manage records, consistency and efficiency of work flow in the administrative section of an organisation. 5. To develop employability skills among the students.

	115B & 125B	Banking and Finance	1. Student is acquaint with theoretical knowledge of Evolution, functions, services of banks. 2. Student can open and operate his bank account. 3. Student will know different instruments used in banking with their legal aspect.
	115C & 125C	Commercial Geography	1. The concept of Organization and Modern Office. 2. The role and Functions of Office Manager. 3. How to develop the insights regarding Organizational Skills for Office Managers. 4. The functioning of Modern office appliances equipment's and e-format records.
	116D & 126D	Consumer Protection and Business Ethics	1. Aware about consumer right, Duties and mechanism for resolving their disputes. 2. Understand about low relating to consumers. 3. Know students with role of business ethics in various functional areas.

RAYAT SHIKSHAN SANSTHA'S
MAHATMA PHULE MAHAIVIDYALAYA, PIMPRI, PUNE – 17
DEPARTMENT OF COMMERCE
(ACADEMIC YEAR 2021-2022)

Course Outcome (COs):

Program	Course Code	Course Name	Course Outcome
S. Y. B.Com. Sem. III & IV	231 & 241	Business Communication-I & II	1. The concept, process and importance of communication. 2. The new technologies in business communication. 3. How to use various soft skills in business. 4. How to draft various letters in business. 5. Business communication skills through the application and exercises. 6. To understand the Report Writing and Internal Correspondence.
	232 & 242	Corporate Accounting-I & II	1. Corporate Accounting in conformity with the provisions of Companies Act and Accounting as per Indian Accounting Standards. 2. The conceptual aspect of corporate accounting. 3. Various skills about Computerized Accounting and Accounting Standards. 4. Various concepts related to companies. i.e. liquidation, amalgamation, absorption, re-construction and holding company. 5. Conceptual Understanding of Holding Company Accounts. 6. Conceptual understanding on the concept of Absorption of companies.
	234 & 244	Business Management-I & II	1. Understand basic knowledge and business management concept. 2. Know about various function of management. 3. Understanding needs and expectations of group members and meeting them effectively. 4. Understanding followers and their views on various organizational

			matters. 5. Conflict Management. 6. How to coordinate group efforts Minimizing resource waste.
	235 & 345	Elements of Company Law-I & II	1. Student get key information from formation of company up to winding up of the company. 2. Student understands the roles, duties and responsibilities of key persons. 3. Student acquaint with the knowledge of various documents involved in from formation up winding up of company. 4. To Equip the students with procedure and practices. 5. To have Comprehensive understanding about the Key Managerial Persons and CSR. 6. To be able to appreciate the emerging E Governance and E-filing under the Companies Act, 2013.
	236B & 246B	Banking and Finance –I & II	1. Understand the evolution and structure of banking in India. 2. Recognize the role of banking in economic development. 3. Analyze the functions of the Reserve Bank of India and the present currency system in India. 4. Differentiate the features and performance of private and public sector banks in India. 5. Evaluate the challenges faced by the banking sector in India, including the impact of COVID-19. 6. Analyze the principles and features of cooperative banking in India.
	236E & 246E	Cost and Works Accounting- I & II	1. Understand the basic concepts of cost accounting. 2. Identify and differentiate between the elements of cost. 3. Prepare a cost sheet, tender, quotation and estimates. 4. Apply the techniques of inventory control and understand the importance of inventory Management. 5. Evaluate the role of a cost

			accountant in an organization. 6. Understand the various documents used in stores and calculate the issuing price of materials.

RAYAT SHIKSHAN SANSTHA'S
MAHATMA PHULE MAHAIVIDYALAYA, PIMPRI, PUNE – 17
DEPARTMENT OF COMMERCE
(ACADEMIC YEAR 2021-2022)

Course Outcome (COs):

Program	Course Code	Course Name	Course Outcome
T. Y. B.Com. Sem. V & VI	351 & 361	Busi. Regulatory Framework-I & II (M. Law)	1. Understand the concept of Contract and its contents. Equip the students with knowledge of nature and performance and breach of Contracts. 2. Understand the nature of partnership Rights and duties of Partner. 3. Compressive understanding about the sale of Goods Act. 4. To give Comprehensive insight about the emerging trend of Arbitration and conciliation and its regulatory mechanism. 5. To Equip the students with procedure and practices about negotiable instruments and liabilities of parties in case of dishonour of negotiable instruments. 6. Comprehensive understanding about the E Contracts, E-Commerce and their legal aspects.
	352 & 362	Advanced Accounting-I & II	1. To develop conceptual understanding about various Accounting Standards and its applicability and also introduce the students about IFRS – Fair Value Accounting. 2. To develop conceptual understanding about accounting for capital restructuring in the form of internal reconstruction. 3. To develop the skill & upgrade the knowledge regarding reorganization of venture capital and it's recording. 4. To understand the various legal provisions regarding banking companies. 5. To understand the meaning of different costs incurred in investment business. 6. To upgrade regarding legal provisions of co-operative accounting. - To develop the skill regarding preparation & presentation

			of final accounts of Credit Co-op. Societies & Consumer Co-op. Societies.
	354 & 364	Auditing and Taxation-I & II	1. Understanding the concept of Auditing, Various type of Audit 2. Help to Find out Errors frauds and help to improve internal control system in business organization. 3. To know the terms used in Audit Report, Certificate and Auditing Assurance Standard. 4. Enhance Provisions under Income Tax Act 1961 used for Conduct Tax Audit. 5. To understand the concept of Auditing, Various type of Audit, to find out Errors frauds and help to improve internal control system in business organization 6. To get knowledge of Computerized Systems and Forensic Audit used for new techniques applicable for new business trends
	355B & 365B	Banking And Finance – II	1. Analyze the Indian money market and its participants, credit instruments, and recent developments. 2. Understand the functions of the Indian capital market, its participants, credit instruments, and recent developments. 3. Explain the functioning of the foreign exchange market, including the determination of exchange rates and recent developments. 4. Identify and describe the basic concepts of the stock market, including primary and secondary markets, merchant banking, IPOs, and FPOs. 5. Understand the types and processes of stock trading, including cash market, future, and option market. 6. Analyze the functions and workings of non-banking financial institutions in India, including lease financing, mutual funds, housing finance companies, life insurance companies, and general insurance companies.
	355E & 365E	Cost and works	1. Identify and classify different types of overheads.

		accounting – II	2. Explain the cost accounting standards and the cost accounting standard board. 3. Analyze the stages involved in the accounting of overheads. 4. Analyze the applications of different methods of costing in manufacturing and service industries. 5. Prepare cost statements under different types of manufacturing industries and service industries. 6. Apply the applicability of cost accounting standards in the method of costing.
	356 B & 366B	Banking And Finance – III	1. Analyze the legal aspects of various banking transactions and their implications for both bankers and customers. 2. Familiarize themselves with the regulatory framework governing cooperative banks in India. 3. Develop an understanding of the Insolvency and Bankruptcy Code, 2016 and its various processes. 4. Analyze the concept of cybercrimes in the banking industry and their impact. 5. Develop an understanding of the role and responsibilities of paying and collecting bankers. 6. Develop an understanding of the legal and practical aspects of bank advances.
	356 E & 366E	Cost and works accounting – III	1. Apply Cost Accounting techniques in cost control and decision making. 2. Prepare various types of Budgets. 3. Learn the basic concept of Uniform Costing and Inter-firm comparison. 4. Impart knowledge about Standard Costing and Variance Analysis. 5. Know the related Cost Accounting Standards and Cost Management practices in specific sectors. 6. Provide a conceptual understanding of procedures and Provisions of Cost Audit.

RAYAT SHIKSHAN SANSTHA'S
MAHATMA PHULE MAHAIVIDYALAYA, PIMPRI, PUNE – 17
DEPARTMENT OF COMMERCE
(ACADEMIC YEAR 2021-2022)

Course Outcome (COs):

M.COM. PART- I

Program	Course Code	Course Name	Course Outcome
M.Com Part I (Semester I & II)	121 & 221	Management Accounting & Financial Analysis and Control	1. Student understands the various concept of Financial Accounting and its difference between Management Accounting and Cost Accounting. 2. Student understand the concept of Marginal Costing, its applications, different techniques of managerial cost accounting and Fixed and Variable Cost Analysis in decision making process. 3. Student understands the concept of budget and budgetary control, types of budgets and preparation of functional budgets in an organization. 4. Student understands the concept of Working Capital Management, determination of working capital, components of working capital and accounts receivable and inventory management.
	122	Strategic Management	1. Understanding of the concept of Strategic management, process of Strategic Management. 2. Understanding the External and Internal Business Environment for effective Strategy. 3. Developing Technical skills for evaluation of alternatives and analytical skills for choice among alternatives. 4. Development of Analytical and Managerial Abilities for critical evaluation.
	127 & 227	Advanced Cost Accounting &	1. Ability to understand the classification of costs, Trace the cost to cost centers, able to prepare cost sheet in various situations. 2. Understand the inventory related

		Application of Cost Accounting	treatments in Cost Accounting. 3. Understand the concept of Employee Cost and its relevance in the total cost. 4. Student can relate the CAS 7 to Employee Cost Concepts. 5. Student can understand the process of accounting of overheads and able to understand CAS 3. 6. Student is able to ascertain cost in different industries.
	128 & 228	Costing Techniques and Responsibility Accounting & Cost Control & Cost System	1. Students are expected to understand the role of Budget in the process of Cost Control and Decision Making. 2. Student skills in computation and analysis of various variances will develop. 3. Student will understand the concept of uniform costing and inter firm comparison. 4. Understand the relevance of Cost Accounting data as a part of monitoring various segments of business.
	135 & 235	Legal Framework of Banking & Banking Law & Practice	1. Student will acquaint the with legal framework in which the Indian banking is working today. 2. Students will aware about the latest developments in the field of banking law. 3. Students will able to understand modern banking practices. 4. Students will enable to establish a link between the legal provisions and the practical aspects of banking.
	136 & 236	Central Banking & Monetary Policy	1. Students will acquaint with RBI's various functions. 2. Students will aware about the latest developments in the field of Para banking and NBFCs in India. 3. Students will enable to understand the role of central banking especially in India. 4. Students will acquire sound knowledge of working and techniques of central bank.

RAYAT SHIKSHAN SANSTHA'S
MAHATMA PHULE MAHAIVIDYALAYA, PIMPRI, PUNE – 17
DEPARTMENT OF COMMERCE
(ACADEMIC YEAR 2021-2022)

Course Outcome (COs):

M.COM. PART- II

Program	Course Code	Course Name	Course Outcome
M.Com Part II (Semester III)	321	Business Finance	1. Students will be able to understand the role and importance of corporate finance, and learn the calculation value of money. 2. Students will be able to understand the financial planning, theories of capitalization and estimation of finance need of firm. 3. Students will be able to learn the sources of finance to be tapped for running business successfully.
	322	Research Methodology for Business	1. To understand the nature, scope and Types of Research. 2. To understand the basics of good research and research process. 3. To understand the concept and techniques of Research Problem. 4. To understand various aspects and methods of testing of Hypotheses. 5. To gain the fundamental knowledge about Methods of Data Collection and formulating questionnaire. 6. To understand the concept, type and classification of Measurement and Scaling.
	327	Cost Audit	1. In depth Understanding of basic concepts of cost audit and its applicability in various areas. 2. In Depth Knowledge on Rights, Duties, Responsibilities and Liabilities of Cost Auditor. 3. Knowledge to Conduct the Cost Audit Traditionally and Electronically. 4. Knowledge on Preparation of Cost Audit Report.
	328	Management Audit	1. In depth Understanding of fundamentals of Management audit. 2. Knowledge on Management Audit procedures.

			3. Knowledge on different areas of Management audit. 4. Detailed Understanding of operational Audit.
	335	Foreign Exchange	1. Students will be able to understand the role of foreign exchange market and types of trade performed in it. 2. Students will be able to know the role of intermediaries in foreign exchange market, types of accounts of NRI in banks. 3. Students will be able to understand finance trade and documents required while raising forex finance for business.
	336	International Finance	1. Students will be able to learn the working of international banking and money market and role of RBI in this regard. 2. Students will be able to expose to international debt and equity market. 3. Students will be able to understand the working of exchange rate regime with latest trends.

Program	Course Code	Course Name	Course Outcome
M.Com Part II (Semester IV)	421	Capital Market and Financial Services	1. Students will be able to learn the importance and working of capital market. 2. Student will be able to understand the working of BSE and NSE, and OTCEI in detail. 3. Students will be able to know the role of inter-mediatories, Mutual funds. Portfolio management.
	422	Industrial Economics Environment	1. To understand the concept of Economic Environment & its Constituents. 2. To understand the elements of Economic & Non-Economic environment. 3. To help students to know about changes in Industrial growth and pattern after 1991.
	427	Recent Advances in Cost Auditing and Cost System	1. Knowledge of Application of Cost Accounting Standards. 2. Detail understanding of GST and Productive Audit. 3. In -Depth knowledge of ERP. 4. Knowledge about recent trends in Cost Accounting.
	435	Recent Advances in Banking and Finance	1. Students may understand the importance of financial inclusion, progress till date of it, and also overview the role of micro financial institutions, customer management. 2. Students will be exposed to recent technological development in banking, and various electronic funds transfer.

H. O. D.
Department of Commerce
Mahatma Phule Mahavidyalaya
Pimpri, Pune-411 017.

PRINCIPAL
MAHATMA PHULE MAHAVIDYALAYA
PIMPRI, PUNE-411 017.

Rayat Shikshan Sanstha's

Mahatma Phule Mahavidyalaya, Pimpri, Pune-17

Department of Microbiology

2021-2022

Program outcome

(UG)

Name of the Program	Program outcome
B.Sc. (Microbiology)	**PO-1**: **Theoretical and practical Knowledge:** Science learners are encouraged to apply the knowledge of science fundamentals to solution of various complex global challenges. A student is exposed to a wide range of theory and practical topics in various subjects and is given intensive hands on training and laboratory related work in each of the courses. The learner is encouraged to use various scientific methods (observational, analytical and numerical) and experimental methods as an application to the acquired concepts and principles that help in studying various branches of sciences. At the end of the program, students are able to gain thorough knowledge in key areas in the subjects offered. **PO-2: Problem Analysis Approaches:** Students are able to understand and use analytical approaches to interpret and analyse results so obtained from experimental data and draw suitable conclusions against their supported data acquired. At the end of the program, students will be able to identify, formulate and analyse scientific problems and reach concrete solutions using various principles of mathematics and sciences. **PO-3: Experimental and Solution Designing Approaches:** Students are able to think out of box with proper acquired knowledge of various subjects, students are trained to think out of the box, design and conduct an experiment or a series of experiments that demonstrate their understanding of the methods and processes involved. **PO-4: Modern tool usage:** students are trained to create, select, and apply appropriate techniques and resources through practical knowledge and IT tools through training programmes. **PO-5: Communication Skill:** English being a language of instruction, learning, writing and communication skills of learners will be improved where students are capable of explaining complex things in easy way. Students can able to

	get placements in various fields. **PO-6: Employability of the Programme:** Equip students with skills needed to adapt better to the changing global scenario and gain access to versatile career opportunities in multidisciplinary domains. To equip learners with knowledge other than that of the subject such as skills required helping them qualify for jobs, all the science subjects offer skill enhancement courses and value added courses so that learners have a better edge over their counterparts. **PO-7: Ethical Values:** Spirit of competitiveness among students is ever emerging, therefore it is equally important to develop a strong sense of ethical values among the learners to develop positive attitudes and values. This includes appreciation of the various principles and theories that evolved in science, the impact that science has on social, economical and environmental issues. Motivation may come from our understanding of the natural world in which we live. Advances in physics, chemistry, biology, and other sciences in the past two or three centuries have enriched not only our understanding of, but our ability to shape, the natural world. **PO-8: Science for Environmental Sustainability:** Nature is under pressure as never before because of the population explosion, civilization and modernization. Our needs for food, water and land, and our demands for energy and more and more stuff are destroying habitats, polluting our air and water, and driving species of animals and plants to extinction. Academics should not remain quarantined from such issues. Through classroom discussions and research projects, this programme facilitates active dialogues with factors which influence human-ecology interactions. As such, at the end of this programme students will be able to identify and analyse socio-political, cultural and economic problems. **PO-9: Soft-Skill Development:** Apart from the attainment of knowledge and hands on skills in practical applicability of the subject, learners need to be equipped with soft-skills and values which will help them function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary groups. These soft skills include leadership, teamwork, project-management, positive outlook, innovative approaches etc. As such, at the end of

	this programme, students will be able to hone the soft-skills required in positively enhancing their academic, professional and personal pursuits towards self and societal advancement. **PO-10: Social Awareness:** To create awareness to become conscious citizens with a sense of responsibility towards their surrounding irrespective of any man made differences. **PO-11: Business Skills:** The course is reasoning and application based, making the students eligible for higher studies, jobs in various sectors and entrepreneurship abilities. **PO-12: Life-long learning:** With the pursuit of knowledge for either personal or professional reasons, learners are also encouraged to volunteer and be self-motivated that not only enhances society values, active participation and personality development, but also enhances self-sustainability, competiveness and employability.

Program Specific Outcome
(UG)

Name of the Program	Program Specific outcome
B. Sc. Microbiology	**PSO 1:** Develop the working knowledge and applications of instrumentation and laboratory techniques. Enabling the students to apply skills to design and conduct independent experiments and interpret. **PSO 2:**To enrich student knowledge and train them in a pure microbial science. **PSO 3:** To introduce the concepts of application and research in Microbiology. **PSO 4:** To inculcate sense of scientific responsibilities and social and environment awareness. Ability to understand the concepts of key areas in Microbiology. **PSO 5**: Learn and apply principles of microbiology in day today life and in applied fields like industry or institution. **PSO 6:** Provide a conductive environment to unleash their hidden talents, creative potential, nurture the spirit of critical thinking and encourage them towards higher education. **PSO 7:** Equip students with skills needed to adapt better to the changing global scenario and gain access to versatile career opportunities in multidisciplinary domains. **PSO 8:** The Human Microbiome will equip you to help solve some of the world's most pressing problems involving food, water, disease and the environment.

Rayat Shikshan Sanstha's

Mahatma Phule Mahavidyalaya, Pimpri, Pune-17

Department of Microbiology

2021-2022

Course Outcomes

(UG)

Name of the Department	Class	Course code	Course Name	Course Outcome
B.Sc. (Microbiology)	B.Sc.I Sem-I	MB-111	Introduction to Microbial world	**CO 1:** Introduce students about development of microbiology. **CO2:** Have developed a good knowledge of the development of the discipline of Microbiology and the contributions made by prominent scientists in this field. **CO 3:** Develop and understand the vast diversity and characteristics of microbial world. **CO4:** Provides an information about how to classify cellular microorganisms based on their general characteristics. **CO 5:** Introducing the student about morphological, structural characterization of microorganisms.
		MB-112	Basic techniques in Microbiology	**CO 1:** Introduction of the standard operating procedures in Microbiology **CO 2:** Introduce the student to different laboratory instruments. **CO 3:** Introduction of students to different staining techniques **CO 4:** Enable the student to understand basic techniques in laboratory. **CO 5:** To acquire the knowledge of different methods of disinfection and sterilization.
		MB-113	Practical Course based on MB-111 & MB-112	CO 1: Enabling the students to perform good laboratory practices. **CO 2:** Developing the student's ability to handle laboratory instruments. **CO 3:** Enabling the student to perform staining techniques. **CO4:** Develop the keen observational skill using different microscopy techniques and staining techniques. **CO5:** Gain knowledge about common laboratory glass wares. **CO6:** Students will able to observe

				motility of bacteria.
	B.Sc.I Sem-II	MB-121	Bacterial cell and Biochemistry	**CO 1:** To understand the bacterial cell structure. **CO 2:** Helps student to learn different bacterial cell organelles **CO 3:** To understand the biochemical characterization of components of microorganisms. **CO4**: Describe characteristics of bacterial cells, cell organelles, cell wall composition and various appendages like capsules, flagella or pilli. **CO5:** To learn about ICTV classification of viruses. **CO6:** Acquainted with chemical and molecular structures of biomolecules.
		MB-122	Microbial Cultivation and Growth	**CO 1:**To understand the different nutritional requirement of microorganisms. **CO 2 :** Help the student to learn different methods of cultivation of microorganism. **CO 3 :** To understand the concept of bacterial growth. **CO 4:** Enable the students to understand the methods of bacterial growth measurements. **CO 5:** To gain the knowledge of different methods of measurements of bacterial growth. **CO 6:** To gain the knowledge of different factors affecting bacterial growth.
		MB-123	Practical Course based on MB-121 & MB-122	**CO 1:** Enable the students to prepare laboratory media. **CO 2:** Enable the students to isolate bacteria for different sources. **CO 3:** Students are able to study practically the effect of different environmental factors on growth of microorganisms. **CO4:** Students will gain the knowledge about preservation of cultures in laboratory. **CO5:** Students will able to check sterilization efficiency of autoclave. **CO6:** Enable the students to perform

				special staining techniques.
	B.Sc. II Sem-III	MB-211	Medical Microbiology and Immunology	**CO 1:** To inculcate knowledge in relationship between human diseases and microorganisms. **CO 2:** Help student to understand different concepts in medical microbiology. **CO 3:** Give the student knowledge about various chemotherapeutic agent and their mode of action. **CO 4:** Develop the knowledge about human immune response towards microorganism concept related to cells and organs of immune system, immune response and immune mechanism **CO 5:** To acquaint with human pathogens & normal flora of the human body systems.
		MB-212	MB212 Bacterial physiology and Fermentation Technology	**CO 1:** To develop fundamental knowledge about various biomolecules. **CO2:** Understand the basic concept related to enzyme. **CO 3:** To understand various biochemical pathways. **CO4:** Student will be able to define various modes and techniques of fermentation. **CO 5:** Enable the student to get sufficient knowledge about development of industrially important strains. **CO6:** Students will able to understand commercial application of microorganism to produce commercially important product on large scale.
		MB-213	Practical course based on MB-211 &MB-212	**CO 1:** The aim is to deliver practical knowledge about implementation of the concept studied. **CO 2 :**It enable the students to perform lab diagnostic techniques like blood grouping, various biochemical reactions and to screen industrially important microorganisms **CO3:** To get acquainted with measurement of cell dimensions using micrometry. **CO4:** Practicing screening of industrially important

				microorganisms. **CO5:** To implement fundamentals of Medical Microbiology in determining Pathogenesis & Lab diagnosis.
	B.Sc. II Sem-IV	MB 221	Bacterial genetics	**CO 1:** Enable the student to get sufficient knowledge about concept of genes, chromosomes & mutations. **CO 2:** Help the student to understand deciphering of genetic code. **CO3:** Developing interest by studying history of genetics. **CO4:** Paraphrasing central dogma of life. **CO5:** Analysing different mutagens and their mechanism. **CO6:** Basic understanding of plasmid genetics and eventually plasmid as one of the tools in genetic engineering.
		MB 222	Air, Water & Soil microbiology	**CO 1:** To inoculate knowledge about micro flora of air, water and soil. **CO 2:** To introduce method of air sanitization water purification and sewage treatment. **CO3:** Able to check the potability of water by using appropriate tests. **CO4:** Students will acquire a fairly good understanding about rhizospheric microorganisms. **CO5:** A brief review on composting and humus formation. **CO6:** Students will get the knowledge about biogeochemical recycling, nitrogen fixing and use as biofertilizers. **CO7:** Students will understand the significance of various texts involving use of enumerating fecal *E. coli* for assessing quality of water.
		MB-223	Practical course	**CO1:** Enable the students to calculate the air flora. **CO2:** Enable the student to test potability of water to prepare bio-inoculant and to apply it. **CO3:** Students are able to isolate mutants by suitable method. **CO4:** Determination of settling velocity, & diversity of air flora. **CO5:** Learn to perform staining of cell organelles.
	B.Sc.	MB	Medical	**CO 1:** To analyse the human anatomy

	III SemV	MB351	Medical Microbiology - I	**CO 1:** To analyse the human anatomy & pathogen associated with disease. **CO 2:** To acquire knowledge of principles underlying establishment of pathogens in human body. **CO 3:** To interpret & analyse the concept of epidemiology. **CO 4:** To assess epidemiological patterns of microbial disease transmission at various modes, intensity at local & global level. **CO 5:** To recognise the appropriate tests to be used based on possible etiology. **CO6:** To utilize the various methods for prevention of diseases.
		MB 352:	Immunology - I	**CO 1:** Understand the importance of primary lymphoid organs in immune system. **CO 2:** Detailed study about structure and functioning of the its secondary lymphoid organ **CO 3:** Students should be aware about cellular components of the immune system. **CO 4:** Students will learn the Concepts of complement system. **CO 5:** Educating the students about the peculiar and key concepts falls under the Allograft rejection mechanism. & amp; its prevention **CO 6:** Comprehending & Exemplifying Immune complexes by the means of diverse techniques such as ELISPOT, RIA.
		MB353:	Enzymology	**CO 1:** To understand methods of active site determination, role of enzymes and its cofactor in microbial physiology. **CO 2:** To learn to perform enzyme assay, purification and quantification of enzymes activity, enzyme kinetics in terms of initial, final velocity, mathematical expression of enzyme kinetic parameters. **CO 3 :** To correlate regulation of metabolism at enzymatic levels and apply, methodology. **CO4:** To get acquainted with

				mechanism of allosteric enzymes, enzyme inhibition, feedback inhibition. **CO5:**To get good knowledge of different methods of immobilization of enzyme and its industrial applications. **CO6:**To learn about zymogens and their activation, isozymes.
		MB 354	Genetics	**CO 1:** To exhibit a knowledge base in Genetics and Molecular Biology **CO 2 :** To understand the central dogma of Molecular Biology **CO 3 :** To construct genetic map of bacteria and fungi **CO 4:** To get introduced to concept of recombination and bacteriophage Genetics **CO 5:** To understand the concept cloning in bacteria **CO 6:** To demonstrate the knowledge of common and advanced laboratory practices in Molecular Biology
		MB 355	Fermentation Technology– I	**CO 1:** Student's will be able to define various modes and techniques of fermentation **CO 2 :** Isolate, identify and develop the microbial inoculum for industrial processing. **CO 3 :** Students will be able to give examples of industrially important microorganisms and their applications. **CO 4:** Student's will grasp about fermentation economics,parent ability and validation of process. **CO 5:** Students will learn about upstream and downstream processes. **CO 6:** Student's will attain the knowledge about fundamentals of Intellectual Property Rights (IPR), Parent designs. **CO 7:** Students will get the information of different methods for quality assurance of fermentation products. **CO 8:** Students will learn strain improvement strategies,media optimization methods for production of various valuable products.
		MB 356	Agricultural Microbiology	**CO 1:**To understand plant growth improvement with respect to disease

				resistance, environment tolerance. **CO 2 :**To correlate stages of plant disease development, epidemiology, symptom based classification, control methods. **CO 3 :**To understand the importance of microorganisms in sustainable agriculture, biotechnological application of bio films, edible vaccines. **CO 4 :** To correlate Soil Micro biome and Role of microorganisms in soil health **CO 5 :** To determine the use of Microorganisms as tools in plant genetic engineering.
		MB – 357:	Diagnostic Microbiology and Immunology	**CO 1:** Application of identification systems for microbial disease diagnosis, disease treatment and preventives measures. **CO 2:** Students can develop strategies for diagnosis of diseases based on antigen and antibody reactions with emphasis on prevailing communicable diseases. **CO 3 :** Graduates can perform different hemato-pathological tests. **CO 4 :** To get acquaint to the epidemiological survey and its questionnaire preparation. **CO 5:** estimation and interpretation of the different hematological indices.
		MB 358:	Enzymology and Genetics	**CO 1:** Students can prepare buffers and able to calibrate pH meter. **CO 2**: Students can perform qualitative analytical tests using flow charts for Proteins. **CO3:** Students are able to separate and identify sugars from mixtures. **CO4:** Students will able to do isolation of genomic DNA from bacteria. **CO5:** Practicing quantitative estimation of DNA by Diphenylamine method. **CO6:** Students can perform quantitative estimation of carbohydrates.
		MB 359	Fermentation Technology- I and	**CO 1:** Experimenting isolation of Aspergillus niger from black rot of onion.

			Agricultural Microbiology	**CO2:** Performing & determining the outcomes MIC & MBC of antibacterial compounds **CO3:** Detecting the sterility of pharmaceuticals as test culture given as per IP guidelines. **CO4:** Validation of commercial formulation of bioinoculants based on BIS Standards. **CO5:** Executing the standard methodology to perform antibiotic assay.
		MB-3510	Marine Microbiology	**CO 1:** Help the students to impart the awareness of unseen and unexplored niche of marine ecosystem of microbes. **CO 2:** Student acquire advances in the knowledge of marine microbes and marine ecology.
		MB 3511	Dairy Microbiology	**CO 1:** Students acquire skills of processing of milk and dairy products. **CO 2:** Students are able to assess quality control in dairy industry.
		MB 361	Medical Microbiology II	**CO 1:** To get acquainted with different drug for designing of effective treatment. **CO 2:** To gain knowledge of development of drug resistance among pathogens & strategies to mitigate. **CO 3:** To become familiar with the various routs of drug administration. **CO 4:** To get acquainted with establishment of human viral pathogens, animal viral pathogens , fungal & protozoal pathogens. **CO 5:** To establish preventive measures to cope with transmission & treatment of viral, fungal & protozoal diseases. **CO 6:** To understand various methods of virus cultivation.
		MB 362	Immunology– II	**CO 1:** Highlighting the properties, attributes and Biological functions of cytokines. **CO 2 :**Tweeting about social values in vaccination programs. **CO 3:** Extending the basic knowledge about Antigen processing and

				presentation. **CO 4 :** Assimilation of basic ideas behind the immune response against tumors. **CO 5:** Thorough overview of key concepts lies in general principles of different types of hypersensitivity reactions. **CO 6 :** A brief understanding about autoimmune diseases.
		MB 363:	Metabolism	**CO 1:** To learn mechanisms of transport of solutes across the membrane. **CO 2 :**To get acquainted with mechanism of biosynthesis and degradation of biomolecules. **CO 3 :** To comprehend basic concept of autotrophic mode of metabolism of prokaryotes. **CO4:** To learn laws thermodynamics, free energy, entropy, enthalpy. **CO5:** To get knowledge of electron transport chain. **CO6:** Protein metabolism, role of urea cycle.
		MB-364:	Molecular Biology	**CO 1:** Graduates get introduced to concept of recombination and bacteriophage Genetics **CO 2 :**To understand the concept cloning in bacteria **CO 3 :** To demonstrate the knowledge of common and advanced laboratory practices in Molecular Biology **CO 4:** Understanding of phage life cycle and its application in genetic engineering. **CO 5:** Applications of tools of genetic engineering. **CO 6:** Basic understanding of techniques used in recombinant DNA technology.
		MB 365	Fermentation Technology – II	**CO 1:** Students will be able to describe each step required for successful fermentation and note any potential problems so they can be resolved. **CO 2 :**Students will get knowledge about large Scale production of milk

				and milk products. **CO 3 :** Students will acquire knowledge of production of primary metabolite & secondary metabolites. **CO 4 :** Students will gets introduced to microbial transformation of Steroids. **CO 5:** Studente will get aquainted with the concept of Immune sera. **CO 6 :** Student's will learn about the industrial production of Alcohol, beer, wine etc
		MB 366:	Food Microbiology	**CO 1:** Enable the student to get sufficient knowledge in relationship between food and microbes, techniques used in food microbiology and food processing. **CO 2: Introduce** the graduates about preservation technique used in food industries, **CO 3:** Aware the students about microbial food borne illnesses. **CO 4 :** Introduction of concept of prebiotic and probiotic
		MB 367	Diagnostic Microbiology and Immunology	**CO 1:** To recognize & differentiate between life cycle stages of fungal & protozoal pathogens. **CO 2:** Able to perform the antibiotic sensitivity testing required for designing of disease treatment. **CO 3:** To understand the immunohematological techniques used in pathology laboratory. **CO 4:** To get acquainted with the egg inoculation techniques required for cultivation of viruses. **CO 5:** To understand working of blood bank & preparation of visit report. **CO 6:** To know importance of cross matching useful in blood transfusion.
		MB 368	Practical Course II based on Metabolism and Molecular Biology	**CO 1:** Students will implement knowledge of biochemistry to detect the different bio-elements in the blood and serum. **CO 2:** Students will acquire the knowledge of large-scale production of enzyme its purification, quantification and determination of enzyme activity. **CO 3:** To perform immobilization of amylase enzyme. **CO4:** Student will able to isolate & enumerate bacteriophage.

				CO4: Student will able to observe mitotic cell division. **CO5:** Students are able to isolate plasmid DNA.
		MB 369	Fermentation Technology- II and Food Microbiology	**CO 1:** Lab scale production and estimation of ethanol. **CO 2 :** Understanding the solid state fermentation with taking reference of mushroom cultivation. **CO 3 :** students will get acquainted with different guidelines of with HACCP (Hazard Analysis and critical control point) for food industry. **CO 4:** Students will get the knowledge about isolation and Identification of probiotic microflora and health benefits associated with it. **CO 5:** Examining the values TDP and TDT. **CO 6:** Testing the Aflatoxin using UV trans-illuminator.
		MB 3610	Waste Management	**CO 1:** To learn the design and working of treatment plants and methods used for liquid and solid waste treatment. **CO 2 :**To impart the understanding of kinetics of biological systems used in waste treatment. **CO 3 :** To learn the standards of waste management and competent authorities involved at National and international level.
		MB 3611	Nano-biotechnology	**CO 1:**To learn fundamentals of nanotechnology as to Synthesis and characterization techniques of nanoparticles. **CO 2 :**To acquire knowledge of applications of nanomaterials in different disciplines of human life. **CO 3 :** To compare the merits of using nanotechnology with existing technologies.

Rayat Shikshan Sanstha's

Mahatma Phule Mahavidyalaya, Pimpri, Pune-17

Department of Microbiology

2021-2022

Program Outcome

(PG)

Name of the Program	Program outcome
M.Sc. (Microbiology)	**PO-1**: **Theoretical and practical Knowledge:** Application of knowledge of microbial science to resolve critical global issues. Pupil is manifested with a broad range of elements involved in the current industrially and research oriented skills. Students are acquainted with profound understanding involved in manuscript writing, epidemiological models and surveys to enhance the research approach and scientific attitude. **PO-2: Problem Analysis Approaches:** To escalate the prior knowledge and extending it to develop into technology. Students will have better perspective to solve given practical, epidemiological query by logical, statistical and analytical way of approach to retrieve better outcomes using the provided data and the interpretation of the acquired data using statistical tools. **PO-3: Experimental and Solution Designing Approaches:** Number of experiments which involve high order thinking that would aid students to look out for better solution designing, based on the pathways and mechanisms they have been studied, to develop mathematical and statistical approach for solution designing. **PO-4: Modern tool usage:** Students become familiar to use analytical, biophysical, molecular instruments and their precise implementation in various interdisciplinary fields. Associated application of software in research and development sectors, data analysis and molecular experiments. **PO-5: Scientific writing and Communication Skill**: By various means of activities viz. poster presentation, seminar, group discussion and attending conferences it strongly builds individuals' verbal and nonverbal skills. This significantly results in ability to expose diversified conditions and to tackle the problem confidently by interviewing and exchanging the knowledge.

	PO-6: Employability of the Programme: Polishing the skills needed for sustaining in the challenging world and also improving the better understanding for the incoming demands with respect to the future developmental projects. **PO-7: Ethical Values:** Developing the sense of ethical values as morals are equally important in development. An individual is filled with prudent point of view towards the societal and other living beings sharing the earth equally to maintain ecosystem and social well-being. **PO-8: Science for Environmental Sustainability:** Equip students with key responsibility of awareness towards environment. Also understands the micro form of life and their diversity helping in balancing of the ecosystem. **PO-9: Soft-Skill Development:** Introducing to achieve positive and professional attitude leads to build stronger relationship with co-workers. **PO-10: Social Awareness:** Creating a sense of responsible citizen which enables one to show empathy towards others from diverse background and also putting a valuable experience in their personality that result in changing the perspective towards society and nature. Make them aware of human rights and cyber security. **PO-11: Business Skills:** Enabling the students to implement and build their crude ideas into a potential business plan which in return bifurcate the possibility of employment and entrepreneurship. **PO-12: Life-long learning:** by extending the knowledge and skills which will consciously remain intact and build the values such as competitiveness, motivation and better outlook, adaptability critical thinking, logical reasoning and leadership, professional ethics.

Program Specific Outcome
(UG)

Name of the Program	Program Specific Outcome
M.Sc. (Microbiology)	**PSO 1:** Exploration of culturable and unculturable microbial diversity. **PSO 2:** Application of extremophiles and biomolecules for human health improvisation and technology development. **PSO 3:** Application of mathematics and statistics in microbiological processes. **PSO 4:** Acquaint students with research methodologies like literature survey, scientific writing, data handling and designing of research projects. **PSO 5:** Extending knowledge of immunological pathways and their key role in cancer development. **PSO 6:** Application of tools of genetic engineering in diagnosis and treatment of genetic disorders. **PSO 7:** Learning the need of understanding significant role of industrially important organisms and their commercial products and process of manufacturing. **PSO 8:** Comprehending the knowledge of prognosis, diagnosis. Treatment and prevention of prevalent diseases. **PSO 9:** Study of new therapeutic and biocontrol agents. Also studying the combinatorial applications of bacteriophage and other antimicrobial viruses against MDR pathogens as an alternative to antibiotics. **PSO 10:** Developing a key concept to build sustainable models to treat industrial waste water using selective microbes.

Rayat Shikshan Sanstha's

Mahatma Phule Mahavidyalaya, Pimpri, Pune-17

Department of Microbiology

2021-2022

Course Outcomes

(PG)

Name of the Department	Class	Course Code	Course Name	Course outcome
Microbiology	M.Sc. I Sem I	MBCT 111	Microbial Systematics	**CO 1:**Understanding the diversity of microbial world and their implications **CO 2:** Application of knowledge of the standard rules of classification system to identify and classify microorganisms. **CO 3:** Evaluation of Diversity index. **CO 4:** Exploration of un-culturable diversity and understanding of metagenomics. **CO 5:** Analysis of unculturable microorganisms using tools of metagenomics. **CO 6:**Understanding of adaptations and ew species generation by evolution
		MBCT 112	Quantitative Biology	**CO 1:** Applications of statistical methods and principles in research and biological experiments. **CO 2:** Analysis and interpretation of data using computer application. **CO 3:** Hypothesis formulation and analysis of possible outcomes. **CO 4:** Recognize, describe and calculate the measures of the spread of data: variance, standard deviation etc. **CO 5:** Illustrate whether two events are mutually exclusive and whether two events are independent. **CO 6:** Construct and interpret contingency table.
		MBCT 113	Biochemistry and Metabolism	**CO 1:** Application of biochemical and molecular techniques to plan and carry out experiment. **CO 2:** Understanding of structure and purpose of basic components of cell. **CO 3:** Learning of the various processes involved in plant and animal development. **CO 4:** Describe genetic, molecular

				and cellular technique used to investigate developmental and cell biology processes in various organisms. **CO 5:** Describe the general functions of directional microtubule motor proteins and how they work. **CO 6:** Knowledge of basic structure of proteins and importance in cellular function.
		MBCP 114	Biochemical techniques (Practical based on compulsory theory credits)	**CO 1:** Performance of good laboratory practices. **CO 2:** Isolation and identification of extremophiles. **CO 3:** Enable student to perform biochemical and molecular techniques. **CO 4:** Applications of molecular techniques in academic and research work. **CO 5:** Comprehension: cell cycle stages and comparison between normal and polyploidy condition. **CO 6:** Analysis of data obtained using molecular graphics visualization tools.
		MBET 116	Experimental Design and Quantitative approaches for Biologist	**CO 1:** Understanding of experiment designing. **CO 2:** Analysis and critical evaluation of research data. **CO 3:** Perception and Application of mathematics in biological processes **CO 4:** Implementation of statistical tools for data representation and analysis using computer software or statistical packages. **CO 5:** Paraphrasing theoretical basis of software based data representation.
		MBEP 116	Practical based on Experimental Design and Quantitative approaches for Biologist	**CO 1:** Designing of Mock Research Proposal. **CO 2:** Epidemiological study and statistical survey designing. **CO 3:** Enhancement of numerical microbiological problem solving potential. **CO 4:** Implementation of statistical tools for data representation and analysis using computer software or statistical packages. **CO 5:** Interdisciplinary approach for Mathematics and Biology.

	Sem II	MBCT 121	Instrumentation and Molecular Biophysics	**CO 1:** Prediction of behavior of biological systems from physical principles. **CO 2:** Determination of molecular structure of biomolecules using different Biophysical Techniques. **CO 3:** Perception of practical skills using biological instruments. **CO 4:** Practices the techniques of Chromatography and Spectroscopy. **CO 5:** Applications of radioisotopes in medical, agricultural and fundamental research. **CO 6:** Interpretation of age of the fossils by carbon dating.
		MBCT 122	Molecular Biology	**CO 1:** Understanding of structures, functions and internal genetic control of the individual cell. **CO 2:** Perception and application of genetic engineering. **CO 3:** Application of gene and protein activity pattern in disease diagnosis. **CO 4:** Implementation of antibiotic resistance in treatment of MDR associated infections. **CO 5:** Knowledge of basic tools used in genetic engineering. **CO 6:** Understanding of application of genome projects in various fields.
		MBCT 123	Enzymology, Bioenergetics and Metabolism	**CO 1:** Understanding of thermodynamics behind biological processes. **CO 2:** Deep understanding of structure and function of biomolecules. **CO 3:** Perception of basic and deep knowledge of enzymes and enzyme kinetics. **CO 4:** Application of purification techniques in isolation and extraction of industrially important novel enzymes. **CO 5:** Extending deep knowledge of critically important biomolecules in cellular functions and human health. **CO 6:** Analytical study of cellular processes via associating kinetics and metabolism.

		MBCP 124	Molecular biology, Enzymology and Instrumentation techniques (Practical based on compulsory theory credits)	**CO 1:** Exploration and analysis of classical and modern tools of rDNA technology **CO 2:** Understanding of principles and SOPs of bio-analytical Instruments. **CO 3:** Estimation of enzyme activity and enzyme kinetics. **CO 4:** Application of enzyme purification to isolate new enzymes. **CO 5:** Infer basic research tools and application and Improving scientific attitude and research skills. **CO 6:** Enhancing the analytical and interpretation skills.
		MBTE 126	Molecular biology tools and applications	**CO 1:** Perception and application of molecular biology tools. **CO 2:** Paraphrasing theoretical basis of industrial production of amino acids and antibodies. **CO 3:** Building the importance of Protein DNA interaction. **CO 4:** Learning the new combating CRISPR- Cas system and its applications. **CO 5:** Emphasizing the importance of biopolymers.
		MBEP 126	Practical based on molecular biology tools and applications	**CO 1:** Able to perform molecular biology techniques independently. **CO 2:** Developing the skills for screening of recombinant strains. **CO 3:** Application of techniques involved in genetic engineering. **CO 4:** Analysis of techniques such as PCR, protoplast fusion, blue white screening etc.
	M.Sc. II Sem III	MBCT 231	Immunology	**CO 1:** Students will understand the concepts of Immunology. **CO 2:** They will be able to understand the different effector mechanisms of host immune response. **CO 3:** To acquaint students with the cell surface receptors present on various cells for signal transduction pathways and regulation of immune responses. **CO 4:** Applications of different immunological techniques in analysis and diagnosis of diseases and immunological disorders. **CO 5:** Extending the knowledge of

				how the immune system mounts an immune response against tumor and how tumors evade immunity. **CO 6:** Comparing strategies to combat tumors based on immunotherapy, including passive and active immunization.
		MBCT 232	Molecular Biology	**CO 1:** Students will be able to understand the concept of Metabolomics. **CO 2:** Detail knowledge about the concept and applications of transgenic plants and transgenic animals. **CO 3:** Understanding the terms illustrating the extract of terms involved in genomics. **CO 4:** Gasping knowledge concerning the methods developed to study genomic variations. **CO 5:** Theoretically Manifesting the importance of applications in rDNA technology by learning transgenic plants and animals. **CO 6:** Core clearance of pre-requisite concepts of proteomics. **CO 7:** Streching the importance of learning GMOs and associated social and ethical issues. **CO 7:** Thorough overiew of key concepts lies in transposons with reference of maize and drosophila.
		MBCT 233	Clinical Microbiology	**CO 1:** Interpretation of host parasite interaction. **CO 2:** Knowledge of morphology, cultural characteristics, biochemical tests, epidemiology, laboratory diagnosis etc of bacterial pathogens. **CO 3:** Understand the basics and applications of various chemotherapeutic agents and their mode of action. **CO 4:** To develop informatics and diagnostic skills, including the use and interpretation of laboratory tests in the diagnosis of infectious diseases **CO 5:** Acquaint with knowledge of handling and disposal of medical waste. **CO 6:** Illustrate prognosis, diagnosis, incidence and prevalence of local and global diseases using epidemiological

				models.
		MBCP 234	Practicals based on Immunology, Molecular Biology and Clinical Microbiology	**CO 1:** Students will be acquainted with techniques in Clinical Microbiology, Immunology and Molecular Biology. **CO 2:** Analysis of serum proteins and importance of it. **CO 3:** Applications of immunological techniques in qualitative and quantitative antigen/ antibody in diagnostics. **CO 4:** Evaluate efficiency of recombinant DNA technology by various screening techniques. **CO 5:** Exemplifying regular pathogens to understand their disease manifestation.
		MBET 237	Microbial Virus Technology	**CO 1:** Students will understand the basics of isolation and characterization of bacteriophages. **CO 2:** Pupil will understand the need of bacteriophages and phage therapy for antibiotic resistant pathogenic bacteria. **CO 3:** Comparing phage therapy over antibiotic therapy. **CO 4:** Studying the interaction between host and phage.
		MBEP 237	Practicals based on Microbial Virus Technology	**CO 1:** Students' knowledge will grow up with isolation, purification and preservation of bacteriophages **CO 2:** They will be acquainted with various concepts of bacteriophage growth kinetics **CO 3:** It will also help to learn about applications of bacteriophages. **CO 4:** Application of bacteriophages as therapeutic as well as bio control agents.
	M.Sc II Sem IV	MBCT 241	Pharmaceutical Microbiology	**CO 1:** In addition to drug development students will also understand the concepts of drug discovery. **CO 2:** They will be able to know pharmacokinetics and pharmacodynamics. **CO 3:** Besides this students will know the recent trends for MDR therapy also. **CO 4:** Summarizing the general concepts and definitions fall under the

				medicinal chemistry. **CO 5:** Comprehending the theoretical concept of classification, and drug mechanism. **CO 6:** Detailed overiew of drug designing and development by **CO 7:** Assimilation of basic ideas behind clinical trials, definitions and methods to perform. **CO 8:** Extending the knowledge of drug metabolism in a circuitous way. **CO 9:** Extending the connotation of pharmacopeia in pharmaceutical industry.
		MBCT 242	Microbial Technology	**CO 1:** They shall acquire knowledge about various process control methods in fermentation. **CO 2:** Students will be acquainted with the applications of microorganisms in different industries. **CO 3:** Understanding the role of industrially important microorganisms in upstream and downstream process. **CO 4**: Extending the knowledge of production of industrially important products.
		MBCP 243	Dissertation	**CO 1:** Students will be able to choose a dissertation topic of research or application orientation **CO 2:** They will get an experience for gathering literature survey and apply it into practical dissertation work **CO 3:** They shall also be educated for use of statistical analysis and graphical presentations **CO 4:** Besides this they will also be able to analyze qualitative and quantitative data with evidence based explanation gathered supports the initial hypothesis. **CO 5:** This course will help students to craft an extensive and comprehensive piece of dissertation work with research or application orientation.
		MBET 244	Quality Assurance and Validation in Pharmaceutical Industry and Development of	**CO 1:** Students. will have knowledge of Good Manufacturing Practices (GMP) and Good Laboratory Practices (GLP) in pharmaceutical industry. **CO 2:** They will be accustomed with ISO, WHO and US certification and

			Anti Infectives from plants	also Safety in microbiology laboratory. **CO 3:** The knowledge of Therapeutic ratio, MIC and MBC Susceptibility Testing will be obtained by students **CO 4:** Learning the significance of rules and regulations fall under pharmacopeia.
		MBEP 244	Practicals based on Quality Assurance and Validation in Pharmaceutical Industry and Development of Anti Infectives from plants	**CO 1:** Students will have knowledge of Quality Assurance in the Pharmaceutical Industry. **CO 2:** Understanding about validation processes in the Pharmaceutical Industry will become easy. **CO 3:** They will be acquainted with the knowledge of development ofanti-infectives from plants.
		MBET 246	Industrial waste water treatment and Industrial production of vaccines	**CO 1:** Students will get to know the concepts of Industrial Waste Water Treatment **CO 2:** They will also learn about sludge treatment **CO 3:** The concept of Industrial Production of Vaccines will also be clear to them. **CO 4:** Understanding the composition of effluent. **CO 5:** handling and operating the parameters involved in effluent treatment and kinetics.
		MBEP 246	Practicals based on Industrial waste water treatment and Industrial production of vaccines	**CO 1:** They will learn about sludge treatment **CO 2:** Students get acquainted with the concepts of Industrial Production of Vaccines. **CO 3:** Critical analysis of industrial waste water.

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Rayat Shikshan Sanstha's

Mahatma Phule Mahavidyalaya, Pimpri Pune -17

Department of Physics (A.Y. 2021-22)

Program outcomes (POs) and Program specific outcomes (POSs)

After successful completion of three-year degree program in physics a student should be able to;

Program Outcome (POs)
PO1.Critical Thinking: Employ critical thinking and the scientific knowledge to design, carry out, record and analyse the results of Physics experiments. **PO2. Effective Communication:** Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology. **PO3.Social Interaction:** Produce something views of others, mediate disagreements and help reach conclusions in group settings. **PO4. Effective Citizenship:** Being the students of Physics they have to communicate with people, They have developed skills in Interactions among themselves in PPT Competition under curiosity programme. **PO5.Ethics**: The subject teaches students about the ethical approach, not to waste electricity. **PO6.Environment and Sustainability:** Conservation practices are studied for sustainable development **POs 7: Self-directed and Life-long Learning:** Acquire the ability to engage in independent and life-long learning in the broadest context socio technological changes. **POs 8:** Graduates will pursue higher studies in related fields including science. **POs9:** Graduates will perform as employers in private/government institutions rising up to top positions. **POs10.** Create an awareness of the impact of Physics on the society, and development outside the scientific community. **POs11**. To inculcate the scientific temperament in the students and outside the scientific community. **POs12.** Solve the problem and also think methodically, independently and draw a logical conclusion.

Program Specific Outcome (PSOs)

PSO1. To provide knowledge of Physics From Nano Particle to Macro Particle through Qualitative and Quantative Analysis..

PSO2.To make the students aware of applications of different physics aspects ..

PSO3. To highlights the potential of these studies to become an entrepreneur.

PSO4. To equipped with skills related laboratory as well as field based studies.

PSO5. To makes the students aware about conservation and sustainable use of energy

PSO6. To create an interest research field to national development..

PSO7. To address the socio-economical challenges related to physical sciences

PSO8. To facilitates students for taking up and shaping a successful career in Physics.

PSOs9: Graduates will acquire a comprehensive knowledge and sound understanding of fundamentals of Physics.

PSOs10: Graduates will develop practical, analytical and mathematical skill in Physics.

PSOs 11: Graduates will be prepared to acquire a range of general skills, to solve problems, to evaluate information, to use computers productively, to communicate with society effectively and learn independently.

PSOs 12: Graduates will acquire a job efficiently in diverse fields such as Science and Engineering, Education, Banking, Public Services, Business etc.

Course outcomes

Class	Course Name and Course code	Course Outcome
F.Y.B.Sc. SEM-I	**Mechanics and Properties of Matter PHY-111**	**CO1.** Demonstrate an understanding of Newton's laws and applying them in Calculations of the motion of simple systems. **CO2.** Understand the concepts of energy, work, power, the concepts of conservation of energy elasticity and be able to perform calculations using them. **CO3.** Understand the Concept of Viscosity ,Viscous Force, Equation of Continuity, Bernoulli's Principle. **CO4.** Understand the Concept of Surface Tension. **CO5.** To Learn the Properties of Matter like Stress and Strain. **CO6.** Demonstrate quantitative problem solving skills in all the topics covered.
F.Y.B.Sc. SEM-I	**Physics Principles and Applications PHY-112**	**CO1.** Understand the general structure of atom. **CO2.** Understand the atomic excitation and LASER principles. **CO3.** Understand the bonding mechanism and its different types. **CO4.** Demonstrate an understanding of electromagnetic waves and its spectrum. **CO5.** Demonstrate quantitative problem solving skills in all the topics covered. **CO6.** Understand the Propertise of Laser like Divergence.
F.Y.B.Sc. SEM-I	**Physics Practical PHY-113**	**CO1.** Acquire technical and manipulative skills in using laboratory equipment, tools, and materials. **CO2.** understand the Different types of Measuring Instruments Like Vernier calliper and Micrometer Screw gauge. **CO3.** understanding of Physical Properties of Material Like Modulus of Rigidity and youngs Modulus. **CO4.** To Understand the Propertise of Laser like Divergence. CO5.

		To Study motion of spring and calculate spring constant and value of g CO6. Demonstrate an ability to collect data through observation,
F.Y.B.Sc SEM-II	**Heat and Thermodynamics PHY 121**	CO1. Restate defination of system, surrounding, closed and open system, extensive and intensive properties. CO2. To understand the Fundamentals of thermodynamics. CO3. To Learn the Heat transfer Mechanism and to understand the different types Heat engine. CO4. To understand the concept of heat and temperature to Study the Principle of thermometry. CO5. Demonstrate quantitative problem solving skills in all the topics covered. CO6. Solve problems using the properties and relationships of thermodynamic fluids.
F.Y.B.Sc SEM-II	**Electricity and MagnetismCourse Code -** **PHY 122**	CO1. To understand the concept of the electric force, electric field and electric potential for stationary charges. CO2. Able to calculate electrostatic field and potential of charge distributions using Coulomb law and Gauss's law. CO3. To understand the dielectric phenomenon and effect of electric field on dielectric. CO4. To Study magnetic field for steady currents using Biot-Savart and Ampere's Circuital laws. CO4. To study magnetic materials and its properties. CO5. Demonstrate quantitative problem solving skills in all the topics covered. CO6. Understand the relationship between electric and magnetic field's
F.Y.B.Sc SEM-II	**Physics Practical PHY-123**	**CO1.** Acquire technical and manipulative skills in using laboratory equipment, tools, and materials. **CO2.** To understand P-V Diagram and theorotical Study of Carnots Cycle. **CO3.** To Understand Propertise Like thermal Conductivity,

		Specific Heat. **CO4**. To Study Charging Discharging of Capacitor and Kirchhoff's Laws. **CO5**. To Study Different Circuit like LR, LCR. CO6. to Study Characteristic of Diode.
S.Y.B.Sc. SEM-III	**Mathematical Methods in Physics** **PHY-231**	CO1. Understand the complex algebra. CO2. Understand the concept of partial differentiation. CO3. Understand vector algebra useful in mathematics and physics CO4. Understand the role of partial differential equations in physics. CO5. Apply Matrices in the study of electrical circuits, Quantum Mechanics and Optics. CO6. Solve differential equations like Legendre, Bessel and Hermite that are common in physical sciences.
S.Y.B.Sc. SEM-III	**Electronics** **PHY-232**	CO1. Apply laws of electrical circuits to different circuits. CO2. Understand the relations in electricity CO3. Understand the properties and working of transistors. CO4. Design circuits using transistors and operational amplifiers. CO5. Design and Analyze synchronous and asynchronous sequential circuits. CO6. Acquire knowledge of operational amplifier circuits and their applications.
S.Y.B.Sc. SEM-III	**Physics Practical** **PHY-233**	CO1. Design experiments to test a hypothesis and/or determine the value of an unknown quantity. CO2. Investigate the theoretical background of an experiment. CO3. Setup experimental equipment to Implement an experimental approach. CO4. Analyze the data, plot appropriate graphs and reach conclusions from data analysis. CO5.

		Work in a group to plan, implement and report on a project/experiment. CO6. Keep a well-maintained and instructive laboratory logbook.
S.Y.B.Sc. SEM-IV	**Oscillations, Waves and Sound** **PHY-241**	CO1. Understand the concepts of mechanics, acoustics and the properties of matter CO2. Understand the physics and mathematics of Oscillations. CO3. Solve the equations of motion for simple harmonic, damped, and forced oscillators. CO4. Explain oscillation in terms of energy exchange, giving various examples. CO5. Understand the mathematical description of travelling and standing waves. CO6. Solve wave equation to easily understand significance of transverse waves.
S.Y.B.Sc. SEM-IV	**Optics** **PHY-242**	CO1. Acquire the knowledge on various theories of light CO2. Describe how light can constructively and destructively interfere CO3. Understand optical phenomena such as polarization, birefringence, interference and diffraction in terms of the wave model. CO4. Analyze simple examples of interference and diffraction phenomena. CO5. Acquire the basic concepts of wave optics. CO6. Understand the concept of resolving power of different optical instruments..
S.Y.B.Sc. SEM-IV	**Physics Practical** **PHY- 243**	CO1. Use various instruments and equipment. CO2. Design experiments to test a hypothesis and/or determine the value of an unknown quantity. CO3. Set up experimental equipment to implement an experimental approach. CO4. Analyze data, plot appropriate graphs and reach conclusions from your data analysis.

		CO5. Study to handle oscilloscope and variety of electrical circuits. CO6. Understand the concepts of amplifier by using real life experience in laboratory.
T.Y.B.Sc. SEM-V	**Mathematical Methods in Physics-II PHY-351**	CO1. Convert the transformations of physical quantities in different systems of units. CO2. Understand the concept of differential equations like Legendre, Bessel and Hermite that are common in physical sciences. CO3. Solve the different partial differential equations encountered in physical problems and draw inferences from solutions. CO4. transfer functions in Instrumentation using Laplace transforms. CO5. Apply the knowledge of Tensors to understand phenomenon like stress and strain. CO6. the solving of problems in physics with matrices.
T.Y.B.Sc. SEM-V	**Electrodynamics PHY-352**	CO1. Understand the concept of Maxwell's equations. CO2. Acquire the knowledge of Gauge transformations. CO3. Investigate the theory behind Concept of retarded potentials. CO4. Gain significance of electromagnetic radiation from both localized and moving source. CO5. Solve the problems on Covariant formulation of Electrodynamics. CO6. Study the various aspects of wave propagation in plasma.
T.Y.B.Sc. SEM-V	**Classical Mechanics PHY-353**	CO1. Have a deep understanding of Newton's law. CO2. Be able to solve the Lagrangian & Hamiltonians equation. CO3. Solve advanced problems involving the dynamic motion of classical mechanical system. CO4. Explore the application of Hamilton's equations in solving the equation of motion of a particle in a central

		force field, projectile motion of a body. CO5. To know how to impose constraints on a system in order to simplify the methods to be used in solving physics problems. CO6. To know the importance of concepts such as generalized coordinates and constrained motion.
T.Y.B.Sc. SEM-V	**Atomic And Molecular Physics. PHY-354**	CO1. Understand evolution in structure of atom. CO2. Be able to make quantitative estimates of phenomena in elementary particle. CO3. Study and develop the Bohr theory of the hydrogen atom. CO4. Understand the significance that describe these phenomena of sodium doublet. CO5. Derive expressions for the energy levels of a rigid and a non rigid rotor. CO6. Rationalize the role selection rules in vibrational and rotational spectra.
T.Y.B.Sc. SEM-V	**Computational Physics. PHY-355**	CO1. Identify modern programming methods. CO2. Independently program computers using leading-edge tools. CO3. Writing programs in to solve numerical analysis programme. CO4. Solve the algebraic and polynomial equations. CO5. Acquire skills to apply different computational techniques to a different field of physics. CO6. The student will be able to formulate a strategy to solve a given problem using one or more computational methods.
T.Y.B.Sc. SEM-V	**Renewable Energy Sources PHY-ELECTIVE-I:356(D)**	CO1. Describe the challenges and problems associated with the use of various energy sources. CO2. Know the need of renewable energy resources, historical and latest developments. CO3. Compare Solar, Wind and bioenergy systems, Their prospects, Advantages and limitations.

		CO4. Understand the various forms of conventional energy resources. CO5. Acquire the knowledge of fuel cells, wave power, tidal power and geothermal principles and applications. CO6. Analyse the environmental aspects of renewable energy resources.
T.Y.B.Sc. SEM-V	**Python Programming PHY-3510 SEC (H)**	CO1. Use variables to store, retrieve and calculate information. CO2. Utilize core programming tools such as functions and loops. CO3. To write code for complex scientific computational requirement. CO4. Use Libraries like NumPy for numeric computation . CO5. Use Library SciPy for scientific and technological calculations CO6. Develop own functions for Physics or mathematics.
T.Y.B.Sc. SEM-V	**Physics Workshop Skill PHY-3511 SEC (L):**	CO1. After completion of this course students will able to handle and test various electrical instruments. CO-2: To know the concept of study of measurement. CO-3: To gain the knowledge of electrical and electronic skill. CO4: Study of introduction of prime mover(machine). CO5: Study of use bread board for designing the basic gates. CO6. Acquire the knowedge of circuit designs,errors in circuit used for daily purpose.
T.Y.B.Sc. SEM-V	**Physics Laboratory-3A PHY-357**	CO1. Work in a group to plan, implement and report on a experiment. CO2. Investigate the theoretical background to an experiment. CO3. Investigate value of 'g' by Kater's pendulum . CO4. Determine the Moment of Inertia by Bifilar suspension CO5. Determine Resolving Power of grating by using constant deviation spectrometer. CO6.

		Calculation of value of wavelength by Constant deviation spectrometer.
T.Y.B.Sc. SEM-V	**Physics Laboratory-3B PHY-358**	CO1. Demonstrate a deeper understanding of abstract concepts and theories gained by experiencing and visualizing them as authentic phenomena. CO2. Acquire the complementary skills of collaborative learning and teamwork in laboratory settings CO3. Study the difference between Charging and discharging of Capacitor and RC time constant CO4 Calculate the value of factorial of a number by simple and Recursive method by the use of C-Programming. CO5. Understand and formulate Position time data using kinematic equations by the use of C-Programming. CO6. Aquire the knowledge of computational physics to find Roots of polynomial (Newton Raphson) ,Numerical Integration by Trapezoidal rule , Numerical Integration by Simpson's 1/3 rule etc.
T.Y.B.Sc. SEM-V	**Physics Project-I PHY-359**	CO1. Work in a group to plan, implement and report on a project/experiment CO2. Investigate the theoretical background to an project. CO3. Understand research methodology CO4. Understand and formulate a research project CO5 Design and implement a research project . CO6 Identify and enumerate the scope and limitations of a research project.
T.Y.B.Sc. SEM-VI	**Solid State Physics PHY-361**	CO1. Study different types of crystal structures in terms of the crystal lattice and the basis of constituent atoms. CO2. Acquire the knowledge on theory of X-ray diffraction in the reciprocal lattice (k-space) formalism. CO3. Apply the theory of lattice vibrations (phonons) to determine thermal properties of solids. CO4. Study the problem of electrons in a periodic potential, examine its consequence on the band-structure of the solids. CO5.

		Gain knowledge about the experimental techniques for crystal growth from solution and melt. CO6. Be familiar with the basic phenomena in solid state physics.
T.Y.B.Sc. SEM-VI	**Quantum Mechanics PHY-362**	CO1. Understand the effect of symmetries in quantum mechanics. CO2. Be able to solve the Schrödinger equation for simple configuration. CO3. Study and understand the differences between classical and quantum mechanics CO4. Learn operator formalism for observables and basic commutation relations. CO5. Solve Schrödinger equation for simple potentials like linear Harmonic oscillator and Hydrogen atoms. CO6. Understand the space, time and displacement symmetries.
T.Y.B.Sc. SEM-VI	**Thermodynamics & Statistical Physics PHY-363**	CO1. You can master basic statistical methods and concepts like probability, expected value variance. CO2. Has thorough knowledge on different distribution functions. CO3. Can explain the procedures for deriving the relation between thermodynamic parameters such as pressure,temperature, entropy and heat capacity from the distribution functions. CO4. The discussion of thermodynamics of mixtures and multi-phase systems . CO5. Ability to conduct experiments regarding the measurement and calibration of temperatures and pressures in groups. CO6. Ability to apply the first Law of Thermodynamics on closed and control volume systems..
T.Y.B.Sc. SEM-VI	**Nuclear Physics PHY-364**	CO1. Demonstrate knowledge and understanding of laws definitions concepts scientific vocabulary, Scientific quantities and there determination. CO2. Understand the fundamental principles and concepts governing classical nuclear physics.

		CO3. Express the basic concepts of nuclear physics. CO4. Understand the fundamental principles of some quantities characterizing the decay such as half-life, decay constant. CO5. Express nuclear binding energy and nuclear masses. CO6. List the types of beta decays and can express reaction equations and related Q values and energy of beta particles
T.Y.B.Sc. SEM-VI	**Electronics PHY-365**	CO1. Know the special purpose Diode and Transistor Amplifier. CO2. Understand the FET, JFET,MOSFET. CO3. To study the Operational Amplifier and their types. CO4. Know the Timer IC- 555 and its classification. CO5. To study the Regulated Power supply. CO6. Understand the Sequential Logic Circuits
T.Y.B.Sc. SEM-VI	**Physics of Nanomaterials PHY-ELECTIVE-II:366(Q)**	CO1. Explain the effects of quantum confinement on the electronic structure and corresponding physical and chemical properties of materials at nanoscale. CO2. Choose appropriate synthesis technique to synthesize quantum nanostructures of desired size, shape and surface properties. CO3. Correlate properties of nanostructures with their size, shape and surface characteristics. CO4. Appreciate enhanced sensitivity of nanomaterial based sensors and their novel applications in industry. CO5. Manipulating or arranging matter at the nanoscale to provide better coatings, composites, or additives. CO6. Appreciate enhanced sensitivity of nanomaterial based sensors and their novel applications in industry.
T.Y.B.Sc. SEM-VI	**Scientific Data Analysis using Python PHY-3610 SEC (W)**	CO1. Know basic notions and definitions in data analysis. CO2. Know standard methods of data analysis and information retrieval. CO3. Be able to formulate the problem of knowledge extraction as combinations of data filtration, analysis and exploration methods. CO4. Be able to translate a real-world problem into mathematical terms.

		CO5. Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations. CO6. Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
T.Y.B.Sc. SEM-VI	**Photography** **PHY-3611 SEC** **(AD)**	CO1. Understand the basic principle, structure and handling techniques in digital photography. CO2. Including digital editing, saving, sizing, and posting of the images Student gets proficient at the technical aspect of photographing with a digital camera. CO3. Students can identify and apply appropriate business practices specific to the self-employed CO4. Students will be able to develop and apply photographic skills using digital photography tools. CO5. Students will be able to clearly communicate the content and context of their work visually, orally and in writing. CO6. Students will have sufficient mastery of one or more media to complete the technical and formal challenges pertinent to a body of original work.
T.Y.B.Sc. SEM-VI	**Physics Laboratory-4A** **PHY-367**	CO1. Set up experimental equipment to implement an experimental approach. CO2. Demonstrate a deeper understanding of e/m by Thomson method CO3. Learn the concept of Viscosity of Liquid by rotating cylinder method. CO4. Try to understand the theory behind Hall Effect and measure the Hall coefficient 6. Energy gap of a semiconductor CO5. Study of XRD spectrum of any material . CO6. Verify Stefan's fourth power law by bulb filament .
T.Y.B.Sc. SEM-VI	**Physics Laboratory-4B** **PHY-368**	CO1. Demonstrate an understanding of laboratory procedures including safety, and scientific methods. CO2. Demonstrate an ability to collect data through

		observation and/or experimentation and interpreting data Characteristics of JFET. CO3. Design and built astable multivibrator using IC 555/IC 741. CO4. Demonstrate and understand instrumental amplifier using three op-amps. CO5. Study concept of diffraction using a transmission/reflection grating (metal ruler) CO6. Study the characteristics of a laser beam and Determination of the diameter of a thin wire using a laser beam.
T.Y.B.Sc. SEM-VI	**Physics Project-II** **PHY-369**	CO1. Acquire the complementary skills of collaborative learning and teamwork in laboratory settings. CO2. Acquire technical and manipulative skills in using laboratory equipment, tools CO3. Understand the concept of measurement in research. CO4. Understand the significance and limitations of experimentation in research. CO5. Understand and formulate a research project, ethics and responsibility of scientific research. CO6. Study the different characterization techniques that are applied to material confirmation.

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Rayat Shikshan Sanstha's

Mahatma Phule Mahavidyalaya, Pimpri, Pune-17

Department of Botany (2021-22)

Program outcomes and Program specific outcomes

Program outcomes of B.Sc.

Name of the Department	Program outcome
Botany	**PO1.** Understood the basic concepts, fundamental principles and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life. **PO2.** Acquired the knowledge with facts and figures related to various subjects in pure sciences such as Chemistry, Botany, Zoology, Microbiology, Physics Mathematics, etc. **PO3.** Acquired the skills in handling scientific instruments, planning and performing in laboratory experiments. **PO4.** The skills of observations and drawing logical inferences from the scientific experiments. **PO5.** Analysed the given scientific data critically and systematically and the ability to draw the objective conclusions. **PO6.** Think creatively to propose novel ideas in explaining facts and figures or providing new ideas or new solutions to the problems. **PO7.** Realized the knowledge of subjects in other faculties such as humanities, performing arts, social sciences etc. can have greatly and effectively influence which inspires in evolving new scientific theories and inventions.

	PO8. Developed various communication skills such as reading, listening, speaking, etc., which will help in expressing ideas and views clearly and effectively. **PO9.** Imbibed ethical, moral and social values in personal and social life leading to highly cultured and civilised personality. **PO10.** Developed flair by participating in various social and cultural activities voluntarily, in order to spread knowledge, creating awareness about the social evils, blind faith, etc.

Program specific outcomes

Name of the Department	Program specific outcome
Botany	**PSO1.** Plant diversity such as algae, bryophytes, pteridophytes, gymnosperm and angiosperm which indicates the evolution of plants. **PSO2.** Environmental problems along with finding solutions. **PSO3.** Various aspects and disciplines of plant study such as plant anatomy, plant physiology, embryology, etc. **PSO4.** Different types of nutrition which are applied in growth of plants. **PSO5.** Characteristics of various plants to study identification classification and nomenclature under taxonomy and to know evolutionary relationship between different plant groups.

Rayat Shikshan Sanstha's

Mahatma Phule Mahavidyalaya, Pimpri, Pune-17

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Affiliated to Savitribai Phule Pune University, Pune (PU/PN/ACS/053)

Department of Botany

Course outcomes (Semester-wise)

Name of the Department	Class	Course Name	Course code	Course Outcome
Botany	F.Y. B.Sc. (SEM I)	**Botany I- Plant life and Utilization I**	**BO111**	**CO1.** Student will be able to differentiate plant diversity i.e. various plant groups such as Algae, Lichens, Fungi, Bryophytes, Pteridophytes, Gymnosperm and Angiosperms. **CO2.**Students will be able to identify the major groups of plants and be able to classify them as a general outline of classification. **CO3.** Students will be able to compare the characteristics of algae, lichen, fungi and bryophytes that differentiate them from each other and from other forms of life. **CO4.** Student will be able to describe life cycles of different plant specimens such as *Spirogyra*, Lichens, *Agaricus* and *Riccia.* **CO5.** Student will be able to integrate value of plant diversity for maintenance of entire ecosystem and environment. **CO6.** Student will be able to analyze how these plant diversity provides different resources for humans and other organisms.
		Botany II- Plant morphology and anatomy	**BO112**	**CO1.** Student will be able to compare different morphological characters of plants such as inflorescence, flower and its parts, fruits and seeds. **CO2.** Student will be able to analyze how these morphological characters are useful in identification, nomenclature, classification, phylogeny and plant breeding

				CO3. Student will be able to recognize the anatomical structure in plant system by studying different tissue systems in plants. **CO4.** Student will be able to describe the conducting system of the plants **CO5.** Students are able to identify the different kinds of tissues associated with plants. **CO6.** Student will be able to distinguish the internal structure of monocotyledonous and dicotyledonous plants with typical examples
		Practical based on BO111 and BO112	**BO113**	**CO1.** Student will be able to recognize life cycles of different plant specimens such as *Spirogyra*, *Agaricus* and *Riccia.* **CO2.** Student will be able to identify various forms of lichens and mushroom cultivation stages. **CO3.** Student will be able to compare different morphological characters of plants such as inflorescence and their types **CO4.** Student will be able to differentiate flower and its parts. **CO5.** Student will be able to identify types of fruits and seeds. **CO6.** Student will be able to examine and identify the internal structure of monocotyledonous and dicotyledonous plants with typical examples
	F.Y. B.Sc. (SEM II)	**Botany I- Plant life and Utilization II**	**BO121**	**CO1.** Students will be able to compare the detailed morphological and anatomical studies with reference to pteridophytes, gymnosperms and angiosperms. **CO2.**Students will be able to explain the characteristics of pteridophytes, gymnosperms and angiosperms that differentiate them from each other and from other plant forms. **CO3.** Students will be able to classify and describe life cycles of different plant specimens such as *Nephrolepis*, and *Cycas.*

				CO4. Students will be able to describe the outline of classification of Bentham and Hooker's system. **CO5.** Student will be able to analyze the concept of dicotyledons and monocotyledons. **CO6.** They will be able to demonstrate the utilization and economic importance of these plant groups in food, fodder, fiber, horticulture and medicine.
		Botany II- Principles of plant science	**BO122**	**CO1.** Student will be able to demonstrate the concepts Plant physiology such as osmosis, diffusion, plasmolysis etc. **CO2.** Student will be able to describe plant growth and factors affecting plant growth **CO3.** Student will be able to differentiate prokaryotic and eukaryotic cell **CO4.** Student will be able to explain plant cell structure and cell cycles in plants. **CO5.** Student will be able to analyze the structure of DNA, RNA and types of chromosomes. **CO6.** Student will be able to demonstrate the process of DNA replication.
		Practical based on BO121 and BO122	**BO123**	**CO1.** Student will be able to describe life cycles of *Nephrolepis* and *Cycas.* **CO2.** Student will be able to classify plants according to Bentham and Hookers system. **CO3.** Student will be able to differentiate monocotyledonous and dicotyledonous plants. **CO4.** Student will be able to distinguish between mitosis and meiosis **CO5.** Student will be able to realize about estimation of chlorophyll **CO6.** Student will be able to describe the concept of Plasmolysis and DPD
Botany	**S.Y. B.Sc. (SEM I)**	**Botany I- Taxonomy of Angiosperm**	**23141**	**CO1.** Students will be able to compare morphological and reproductive characters of plants and also describe the concept of identification, classification and nomenclature of plant families of Angiosperm.

		and plant ecology		**CO2.** Students will be able to differentiate various systems of classification and describe botanical nomenclature. **CO3.** Students will be able to classify various plant families. **CO4.** Student will be able to describe the concept of species, genetic and ecosystem diversity and hotspots in India. **CO5.** Students will be able to compare environmental basic concept of ecology and know about plant adaptation according to different ecological conditions such as xerophytes, halophytes, mesophytes and succulents. **CO6.** Students will be able to analyses and prepare hypothesis to know the tissue system and their adaptations among the different group of plants
		Botany II-Plant physiology	**23142**	**CO1.** Student will be able to describe basics of plant physiology its importance and scope in other branches like Ecology, Taxonomy, and Genetics etc. **CO2.** Student can describe the phenomenon like osmosis, imbibition, water absorption, transpiration and ascent of sap, and its importance in plants **CO3.** Students are able differentiate phenomenon like Transpiration, Guttation and Exudation. **CO4.** Students can able to demonstrate use of BGA in agriculture for Nitrogen fixation. **CO5.** Student will be able to explain the concept of Nitrogen metabolism, seed dormancy and germination, **CO6**. Students will be able to describe physiology of flowering and vernalization and they understand its use in agriculture.
		Botany III-Practical	**23143**	**CO1.** Student will be able to use tools of taxonomy and ecological instruments. **CO2**. Student will be able to describe plant families and their economic importance. **CO3.** Student will be able to differentiate ecological adaptations in xerophytes and hydrophytes

				CO4. Student will be able to calculate status of vegetation by list count quadrate method. **CO5.** Student will be able to demonstrate commercial bio fertilizers Ringing experiment etc. **CO6.** Student will be will be calculate seed germination percentage and vigor index.
		Botany I- Plant anatomy and embryology	**24141**	**CO1.** Student will be able to define scope and importance of plant anatomy. **CO2.** Students will be able to differentiate Epidermal tissue system, Mechanical tissue system. **CO3.** Students will be able to compare normal and anomalous secondary growth. **CO4.** Student will be able to describe microsporangium, mega sporangium, pollination and fertilization and the concept of endosperm and embryo and embryo development and types of embryo. **CO5.** Student will be able to describe process of fertilization and types of pollination. **CO6.** Students will be able to describe double fertilization and its importance in endosperm formation.
	S.Y. B.Sc. (SEM II)	**Botany II- Plant Biotechnology**	**24142**	**CO1.** Students will be able to describe plant Biotechnology, plant tissue culture and single cell protein. **CO2.** Students will be able to relate the application of micropropogation, Somoclonal variation, Haploid production, Production of secondary metabolite etc. **CO3**. Students will able to define basics of plant genetic engineering, genomics, proteomics and bioinformatics. **CO4.** Student will be able to compare various methods of bioremediation, microbial remediation and phytoremediation. **CO5.** Student are able to apply biofuel technology and able to describe concept of Biogas, Bioethanol, biodiesel and bio hydrogen. **CO6**.Student will be able to demonstrate media preparation, sterilization, and inoculation, incubation.

		Botany III-Practical	**24143**	**CO1.** Student will able to differentiate epidermal tissue system, mechanical tissue system, **CO2.** Student will be able to distinguish between normal and anomalous secondary growth. **CO3**.Student will be able to describe tetrasporangiate anther and types of ovules and monocot dicot embryo. **CO4.** Student will be able to demonstrate about laboratory instruments, preparation and sterilization of MS medium, surface sterilization, inoculation and incubation. **CO5.** Students will able to demonstrate *Spirulina* cultivation and describe transgenic crops. **CO6.** Student are able to use different instruments like Gel electrophoresis, centrifuge and spectrophotometer, Autoclave, oven etc.

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Rayat Shikshan Sanstha's

Mahatma Phule Mahavidyalaya, Pimpri, Pune -17.

Department of Zoology (A.Y. 2021-22)

Program outcomes (PO)

Name of the Department	Program specific outcome
Zoology	➢ **PO 1:** Explain, evaluate and effectively interpret factual claims, theories and assumptions in the students discipline i.e. Zoology, Chemistry, Microbiology, Botany and more broadly in the science and life. ➢ **PO 2:** Find, access, critically evaluate and ethically use information. ➢ **PO 3:** Integrate quantitative and qualitative information to reach defensible and creative conclusions. ➢ **PO 4:** Communicate effectively through writing speech and visual information to the scientific community and to the community at large. ➢ **PO 5:** Respectfully articulate the views of people with diverse perspectives ➢ **PO 6:** Demonstrate the capability to work both independently and in cooperation with others. ➢ **PO 7:** Apply concepts of sustainability to the analysis of one of the more major challenges facing human & earth's resources.

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Department of Zoology (A.Y. 2021-22)

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Name of the Department	Class	Course Name	Course code	Course Outcome
Zoology	F.Y. B.Sc. (SEM I)	Animal Diversity I	ZO111	**CO 1.** Student becomes aware about the Animals. They get knowledge about sponges, Jelly fish, flat worms Students knows about variety of animals i.e. biodiversity their uses and their phylogeny. **CO 2.** Students get knowledge of taxonomy and nomenclature. **CO 3.** Students can classify animals up to order level. **CO 4.** Students get knowledge about different types of flat worms and its pathogenicity. **CO 5.** Students can recognize symptoms of malaria, sleeping sickness etc. **CO 6.** Students understand importance of sponges, cnidarians and useful protist.
		Animal Ecology	ZO112	**CO 1.** Students understand about different types of ecosystems, food chain, food web, energy flow and Ecological pyramid **CO 2.** Students know about population density, natality, Mortality ,Fecundity, Exponential and logistic growth, Population regulation **CO 3.** Students know about Community characters Species richness, Ecological succession, Animal interactions like Commensalism & mutualism. **CO 4.** Students Understand about Animal behaviour and response of animals to different instincts. **CO 5.** Students avoid polluting environment. **CO 6.** Students avoid cutting of trees and plants new trees.

		Practical based on ZO111 and ZO112	**ZO113**	**CO 1.** Student gets the Practical knowledge about different animal specimen by studying its morphological characters. **CO 2.** Students perform practical's like dissolved oxygen , Co2 and Alkanity. **CO 3.** Students perform practical's about water holding capacity of soil. **CO 4.** Students can culture paramecium and other zooplanktons. **CO 5. Field visit for students:** Students observe and aware of different types of wild animals, poisonous & non-poisonous snakes. **CO 6.** Students can apply their knowledge to avoid infestation of Tapeworm and liver fluke.
	F.Y. B.Sc. (SEM II)	**I-Animal Diversity II**	**ZO121**	**CO 1.** Students Student becomes aware about the Animals. They about Roundworms, Annelids, Arthropods, Echinoderms etc. **CO 2.** Students know about variety of animals i.e biodiversity their uses and their phylogeny. **CO 3.** Students can identify symptoms of Ascarisis, Ancylostomiasis, Enterobiosis, Trychinosis, Filariasis etc. **CO 4.**They can apply their knowledge prevent such a diseases. **CO 5.**They can discuss information regarding about disease with family. **CO 6.**They can prepare vermicompost.
		-Cell Biology	**ZO122**	**CO 1.** Student identifies different cell organelles, structure of cell, functions. **CO 2.** Student gets knowledge about the structure of DNA and RNA its function and replication. **CO 3.** They can use different types of microscopes. **CO 4.** They identify prokaryotic and eukaryotic cell. **CO 5.** They can explain process of cell division. **CO 6.** They can compare mitosis and meiosis.

		Practical based on ZO121 and ZO122	**ZO123**	**CO 1.** Student gets the Practical knowledge about different Animal specimen by studying its morphological characters. **CO 2.** The practical's of cell biology make them aware about structure of cells, cell division. **CO 3.** They can prepare blood smear and observe blood cells. **CO 4.** They can prepare mitosis slide and can identify different stages of mitosis. **CO 5.** Students aware about Ascaris symptoms, prevention and control. **CO 6.** They can prepare vermicompost and can maintain vermicompost unit.
	S.Y. B.Sc. (SEM I)	**Animal Diversity III**	**231**	**CO 1.** Students understands characters of urochordates, cephalochordates. **CO 2.** Students understand thoroughly about fishes and amphibians **CO 3.** Students know about parental care in amphibians. **CO 4.** They can differentiate between chordates and nonchordates. **CO 5.** Students explain different system of scolidon animal. **CO 6.** They can differentiate between cartilaginous and bony fish.
		Applied Zoology I	**232**	**CO 1.** Students understand about Sericulture and lifecycle of silkworm, **CO 2.** Student identifies instruments required for Sericulture, Mulberry plantation. **CO 3.** Students can plan to start business of equipment's.. **CO 4.** Students understand about Insect pests and their control, **CO 5.** Students can understand different equipment used for pest control. **CO 6.** They can plan to select sericulture and pest control as business in future.

		Practical	**233**	**CO 1.** Students learn about Internal organ system of locally available fish. **CO 2.** Students know different fish amphibians like toad, hyla. **CO 3.** Students learn about silkworm. **CO 4.** They learn about specimens like Herdmania , Doliolum ,Myxine. **CO 5.**Students learn about different types of pest and pest control. **CO 6.** Students understand characters of urochordates, cephalochordates.
	S.Y. B.Sc. (SEM II)	**Animal Diversity IV**	**241**	**CO 1.** Students know about general characters of reptiles and birds. **CO 2.** Students understand peculiar characters of mammals. **CO 3.** Students can identify poisons and non-poisons snake. **CO 4.**They can create awareness about snake bites symptoms and treatment. **CO 5.**They learns about detail study of Rat and their systems. **CO 6.** They can identify beak and leg modification.
		Applied Zoology II	**242**	**CO 1.** Students know about fish breeding methods. **CO 2.** Students know about types of bees, artificial hive, uses of honey , types of bee products. **CO 3.** Students learn about different types of fresh water fish,. **CO 4.**Students know about types of nets and instruments of fishing. **CO 5**.Students discuss important of apiculture and fisheries with friends and relatives. **CO 6.** They can plan to select Apiculture and fisheries as business in future
		Zoology III-	**243**	**CO 1.**Students can identify different chordate reptile and bird specimen from museum .

		Practical		**CO 2.** Students know about difference between venomous and non-venomous snake **CO 3.** Students can tell about equipment's for fish catching. **CO 4.** Students can explain equipment's for Apiculture. **CO 5.** They can identify different types of honey bees and their communication. **CO 6.** They can identify beak and leg modification.

Short Term Course Outcomes:

Name of the Department	Class	Course Name	Course Outcome
Zoology	**F.Y. B.SC.**	**Certificate course in Aquarium maintenance**	**CO 1.** Students Understand the basic techniques for maintenance of fish aquarium **CO 2.** They able to construct fish aquarium **CO 3.** Student aware about different types of aquarium fishes, fish diseases, fish food etc. **CO 4.** Student knows how to take care of fish in different season. **CO 5.** Students get knowledge about calming effect on mind of aquarium fish. And helps to reduce blood pressure. **CO 6. Aquarium Shop Visit:** Students observe and aware of different types of aquarium fish and maintaince of fish aquarium.

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Department of Mathematics
(A.Y. 2021-22)

S. Y. B. Sc Mathematics Semester III
MT-231: Calculus of Several Variables

Unit-1 Limits and Continuity:

CO 1. Students will be able to define functions of two or more variables and identify their domain and range.

CO 2. Students will be able to draw and interpret level curves of functions of two or more variables.

CO 3. Students will be able to compute limits and determine continuity of functions of two or more variables.

Unit-2 Partial Derivatives and Differentiability:

CO 1. Students will be able to compute partial derivatives of functions of two or more variables and understand their geometric interpretation.

CO 2. Students will be able to apply the chain rule and differentiate homogeneous functions.

CO 3. Students will be able to define differentiability and compute differentials of functions of two or more variables.

CO 4. Students will be able to use Clairaut's theorem and partial differential equations to solve problems.

CO 5. Students will be able to apply the second derivative test to find extreme values of functions of two variables.

Unit-3 Extreme Values:

CO 1. Students will be able to find extreme values of functions of two variables using necessary conditions.

CO 2. Students will be able to apply the Lagrange multiplier method to find extreme values subject to one constraint.

Unit-4 Multiple Integrals:

CO 1. Students will be able to evaluate double integrals over general regions and use Fubini's theorem to change the order of integration.

CO 2. Students will be able to evaluate double integrals in polar coordinates.

CO 3. Students will be able to evaluate triple integrals and use spherical coordinates to simplify integrals.

CO 4. Students will be able to use change of variables and Jacobians to evaluate multiple integrals over non-rectangular regions.

MT-232(A): Numerical Methods and Its Applications

Unit 1: Solution of Algebraic and Transcendental Equations:
CO 1. Students will be able to identify and compute different types of errors in numerical methods.
CO 2. Students will be able to apply the bisection method, false position method, and Newton-Raphson method to solve algebraic and transcendental equations.

Unit 2: Interpolation:
CO 1. Students will be able to define and compute finite difference operators and their relations, such as forward difference, backward difference, and shift operator.
CO 2. Students will be able to compute differences of a polynomial and apply Newton's interpolation formulae (forward and backward) and Lagrange's interpolation formula to approximate functions.

Unit 3: Numerical Differentiation and Integration:
CO 1. Students will be able to compute numerical derivatives using Newton's forward difference formula.
CO 2. Students will be able to apply general quadrature formulae, trapezoidal rule, Simpson's 1/3 rule, and Simpson's 3/8 rule to approximate integrals.

Unit 4: Numerical solution of first-order ordinary differential equations:
CO 1. Students will be able to apply Taylor's series method, Picard's method of successive approximations, Euler's method, modified Euler's method, and Runge-Kutta methods to solve first-order ordinary differential equations.

MT 233: Mathematics Practical

Practical 1-4: Problems on Units 1-4 from MT-231:

1. Students will be able to apply concepts and techniques from Unit 1 (Limits and Continuity), Unit 2 (Partial Derivatives and Differentiability), Unit 3 (Extreme Values), and Unit 4 (Multiple Integrals) of MT-231 to solve practical problems.
2. Students will be able to demonstrate their understanding of the theoretical concepts and their ability to apply them to real-world problems.

Practical 5-6: Problems on Units 1-4 from MT-231 using Maxima software:

1. Students will be able to use Maxima software to solve problems related to Units 1-4 of MT-231.
2. Students will be able to demonstrate their ability to use computational tools to solve mathematical problems and interpret the results.

Practical 7-10: Problems on Units 1-4 from MT-232:

1. Students will be able to apply concepts and techniques from Unit 1 (Solution of Algebraic and Transcendental Equations), Unit 2 (Interpolation), Unit 3 (Numerical Differentiation and Integration), and Unit 4 (Numerical solution of first-order ordinary differential equations) of MT-232 to solve practical problems.
2. Students will be able to demonstrate their understanding of the theoretical concepts and their ability to apply them to real-world problems.

Practical 11-12: Problems on Units 1-4 from MT-232 using Maxima software:

1. Students will be able to use Maxima software to solve problems related to Units 1-4 of MT-232.
2. Students will be able to demonstrate their ability to use computational tools to solve mathematical problems and interpret the results.

S. Y. B. Sc Mathematics Semester IV
MT-241: Linear Algebra

After studying this course, students should be able to:

Unit-1: Matrices and System of Linear Equations

CO 1. Understand the concept of row echelon form and reduced row echelon form of a matrix.
CO 2. Determine the rank of a matrix using row echelon or row reduced echelon form.
CO 3. Represent a system of linear equations in matrix form and identify row equivalent matrices.
CO 4. Determine the consistency of homogeneous and non-homogeneous systems of linear equations using rank and understand the condition for consistency.
CO 5. Solve systems of equations using Gauss elimination and Gauss- Jordan elimination method.

Unit-2: Vector Spaces-I

CO 1. Define a vector space and provide examples.
CO 2. Understand the concept of subspaces.
CO 3. Identify linear dependence and independence of vectors.
CO 4. Determine the basis of a vector space.

Unit-3: Vector Spaces-II

CO 1. Determine the dimension of a vector space.
CO 2. Identify the row, column, and null space of a matrix.
CO 3. Determine the rank and nullity of a matrix.

Unit-4: Linear Transformations

CO 1. Define linear transformations and provide examples.
CO 2. Understand the properties and equality of linear transformations.
CO 3. Identify the kernel and range of a linear transformation.
CO 4. Apply the rank-nullity theorem.
CO 5. Understand composite and inverse transformations.
CO 6. Represent linear transformations using matrices.
CO 7. Perform basic matrix transformations in R^2 and R^3.
CO 8. Understand the concept of linear isomorphism.

MT 242(A): Vector Calculus

After studying this course, students should be able to:

Unit 1: Vector-Valued Functions

CO 1. Understand curves in space and the concept of limits and continuity for vector-valued functions.
CO 2. Calculate derivatives and apply differentiation rules for vector functions.
CO 3. Determine the vector functions of constant length.
CO 4. Calculate integrals of vector functions.
CO 5. Find arc length along a space curve, speed on a smooth curve, and unit tangent vector.
CO 6. Calculate curvature of a plane curve, circle of curvature for plane curves, and curvature and normal vectors for a space curve.

Unit 2: Integrals

CO 1. Calculate line integrals of scalar functions, understand additivity, and apply line integral in the plane.
CO 2. Understand vector fields, gradient fields, and calculate line integral of vector fields, line integrals with respect to dx, dy, dz.
CO 3. Calculate work done by a force over a curve in space, flow integrals and circulation for velocity fields, flow across the simple closed plane curve.
CO 4. Understand path independence, conservative and potential functions.
CO 5. Understand divergence, two forms for Green's theorem, and apply Green's theorem in the plane (proof for special regions).

Unit 3: Surface Integrals

CO 1. Understand parameterizations of surfaces and implicit surfaces.
CO 2. Calculate surface integrals, and understand the orientation of surfaces.
CO 3. Calculate surface integrals of vector fields.

Unit 4: Applications of Integrals

CO 1. Understand the curl vector field, Stokes' theorem (without proof), and conservative fields and Stokes' theorem.
CO 2. Understand divergence in three dimensions and the divergence theorem (without proof).

CO 3. Unify the integral theorems.

MT 243: Mathematics Practical

CO 1. Develop an understanding of concepts in linear algebra and vector calculus through practical problem-solving.

CO 2. Apply theoretical concepts of linear algebra and vector calculus to solve real-world problems.

CO 3. Use software tools such as Maxima to perform computations and solve problems related to linear algebra and vector calculus.

CO 4. Enhance analytical and critical thinking skills through the process of problem-solving.

CO 5. Develop communication skills by presenting solutions to problems both in written and oral formats.

CO 6. Acquire practical skills in the use of mathematical software tools for solving problems related to linear algebra and vector calculus.

CO 7. Develop an appreciation of the importance of mathematical methods in various scientific and engineering fields.

CO 8. Demonstrate an ability to work effectively both independently and in a team to solve problems related to linear algebra and vector calculus.

F. Y. B. Sc Mathematics Semester I

MT 111 - Algebra:

Unit 1: Sets Relations and Functions

CO 1. Understand the concept of sets, subsets, power sets, and the cardinality of a set

CO 2. Define relations and their types, and learn how to determine whether a relation is an equivalence relation or a partial order

CO 3. Understand the concept of functions, their domain, range, and different types of functions

CO 4. Learn how to find the inverse of a function and perform the composition of functions

Unit 2: Divisibility Theory in the Integers

CO 1. Understand the principle of mathematical induction and the well-ordering principle

CO 2. Learn the division algorithm and its applications in finding the greatest common divisor and the least common multiple

CO 3. Understand Euclid's lemma and its applications in proving the fundamental theorem of arithmetic

Unit 3: Primes and the theory of Congruence

CO 1. Understand prime numbers and their properties, and learn how to determine whether a number is prime or composite

CO 2. Learn the basic properties of congruence and modular arithmetic

CO 3. Understand Fermat's theorem and its applications in cryptography

Unit 4: Complex Numbers

CO 1. Understand the properties of complex numbers, their algebraic operations, and the exponential form of a complex number

CO 2. Learn how to find the modulus and complex conjugate of a complex number, and perform operations like multiplication and division

CO 3. Understand the nth roots of unity and their geometric representation in the complex plane

MT 112: Calculus I

CO 1. Understand the algebraic and order properties of real numbers, includingthe arithmetic mean-geometric mean inequality and Bernoulli's inequality.

CO 2. Understand the absolute value function and its properties, including the triangle inequality and its consequences.

CO 3. Understand the completeness property of R, including the definitions of upper bound, lower bound, supremum, and infimum of subsets of R.

CO 4. Apply the supremum property of R to the Archimedean property and density theorem.

CO 5. Understand sequences and their limits, including the definitionand examples of sequences of real numbers and the definition of limit of a sequence.

CO 6. Apply limit theorems, including the definition of bounded sequence, algebra of limits, and monotone convergence theorem.

CO 7. Understand sub-sequences and the Bolzano-Wierstrass theorem.

CO 8. Understand functions and their graphs, including the definition of cluster point and limit of a function.

CO 9. Apply limit theorems to algebra of limits and squeeze theorem.

CO 10. Understand the concept of continuity, including the definition of a continuous function at a point and on intervals.

CO 11. Apply the sequential criterion for continuity and the divergence criterion.

CO 12. Understand the properties of continuous functions on intervals, including the boundedness theorem, the minimum-maximum theorem, and the location of root theorem.

CO 13. Apply the Bolzano's intermediate value theorem and the preservation of interval theorem to continuous functions that map closed bounded interval to closed bounded interval.

MT 113: Mathematics Practical

CO 1. Develop problem-solving skills: Students will develop problem-solving skills through solving problems from different units of MT-111 and MT-112 using both written methods and Maxima software.

CO 2. Understand the mathematical concepts: Students will be able to understand the mathematical concepts from different units of MT-111 and MT-112 and apply them to solve problems.

CO 3. Enhance computational skills: Students will enhance their computational skills by performing calculations manually and using Maxima software.

CO 4. Analyze and interpret data: Students will be able to analyze and interpret data obtained from calculations and use it to draw conclusions.

CO 5. Learn to use mathematical software: Students will learn to use Maxima software to perform mathematical calculations and solve problems.

CO 6. Develop communication skills: Students will develop communication skills through presenting their solutions to problems in a clear and concise manner.

F. Y. B. Sc Mathematics Semester II

MT 121-Analytical Geometry

CO 1. Understand the concept of change of axes in two dimensions, and be able to perform translations and rotations.
CO 2. Understand the concept of conic sections and be able to derive the general equation of second degree in two variables.
CO 3. Be able to reduce the equation of a conic section to standard form, find its center, and determine its nature.
CO 4. Understand the concept of direction cosines and direction ratios, and be able to derive the equation of a plane in normal form and intercept form.
CO 5. Be able to find the distance of a point from a plane, and the distance between parallel planes.
CO 6. Be able to determine the angle between two planes and find the bisector plane.
CO 7. Be able to derive the equation of a line in symmetric and unsymmetric forms, and find the line passing through two points.
CO 8. Understand the concept of coplanarity and the condition for two lines to be coplanar.
CO 9. Be able to find the perpendicular distance of a point from a plane, and determine the angle between a line and a plane.
CO 10. Understand the concept of a sphere and be able to derive its equation in different forms.
CO 11. Be able to find the plane section of a sphere, the equation of a circle, and the sphere passing through a given circle.
CO 12. Be able to find the intersection of a sphere and a line, and derive the equation of the tangent plane to a sphere.

MT 122: Calculus-II

CO 1. Students will understand the concept of derivative of a function at a point, and its applications in real-life situations.
CO 2. Students will be able to use the rules of differentiation, including the chain rule and the derivative of inverse function.
CO 3. Students will be familiar with the mean value theorems and their applications in determining extrema and intervals of increasing and decreasing functions.
CO 4. Students will be able to apply L'Hospital rule to evaluate indeterminate forms and use Taylor's theorem and Maclaurin's theorem with Lagrange's form of remainder in approximating functions.
CO 5. Students will be able to compute the nth derivative of a function and apply Leibnitz theorem for successive differentiation.

CO 6. Students will be able to solve linear and separable first-order ordinary differential equations, and understand the existence and uniqueness of solutions for nonlinear equations.

CO 7. Students will be able to transform nonlinear equations into separable equations and solve exact differential equations using integrating factors.

CO 8. Students will be able to apply their knowledge of differentiation and differential equations to real-life situations, such as modeling population growth or the spread of disease.

MT-123 : Mathematics Practical

CO 1. Develop proficiency in solving mathematical problems related to Units 1 to 4 of MT-121 and MT-122.

CO 2. Acquire hands-on experience in using Maxima software for solving mathematical problems related to Units 1 to 4 of MT-121 and MT-122.

CO 3. Apply mathematical concepts learned in MT-121 and MT-122 to solve practical problems related to real-life scenarios.

CO 4. Enhance problem-solving skills and critical thinking abilities by applying mathematical concepts to solve problems.

CO 5. Develop communication skills by presenting solutions to problems in a clear and concise manner.

CO 6. Learn how to use mathematical software tools effectively to solve complex problems in a timely and efficient manner.

CO 7. Gain practical knowledge of various mathematical concepts such as calculus, linear algebra, probability, and statistics.

CO 8. Improve analytical and numerical skills by using mathematical tools and techniques to analyze and solve problems.

CO 9. Overall, the course aims to provide students with practical experience in applying mathematical concepts and tools to solve real-world problems. By the end of the course, students should be able to demonstrate proficiency in solving mathematical problems and using mathematical software effectively.

Program Specific Outcome

First Year Mathematics Course

By the end of this course, students will be able to:

PSO 1. Solve mathematical problems using algebraic, trigonometric, and calculus techniques.

PSO 2. Understand and apply the concept of limits and derivatives to functions.

PSO 3. Interpret and graphically represent mathematical data.

PSO 4. Analyze and apply mathematical principles to real-world problems.

PSO 5. Understand the concept of matrices and perform basic operations on them.

PSO 6. Understand the principles of probability and statistics and apply them to real-world scenarios.

PSO 7. Develop a solid foundation in mathematics that can be built upon in future courses.

Second Year Mathematics Course

By the end of this course, students will be able to:

PSO 1. Understand and apply the concept of integration to functions.

PSO 2. Use mathematical software to solve complex problems.

PSO 3. Understand and apply the principles of differential equations to real-world problems.

PSO 4. Analyze and interpret mathematical data using statistical techniques.

PSO 5. Understand the concepts of complex numbers and perform basic operations on them.

PSO 6. Understand the principles of linear algebra and apply them to real-world problems.

PSO 7. Develop critical thinking skills through mathematical problem-solving.

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Department of Statistics (A.Y.: 2021-22)

Program specific outcomes

Name of the Department	Program specific outcome
Statistics	**PSO1.**To provide knowledge of Statistics, Qualitative and Quantative data Analysis,various statistical distributions. **PSO2.**To make the students aware of applications of different statistical aspects. **PSO3.**To highlights the potential of these studies to become an entrepreneur. **PSO4.**To equipped with skills related to theorotical as well as practical based studies. **PSO5.**To inform students about how Statistics is used in real life. **PSO6.**To create: an interest research field to national development.. **PSO7.**To facilitates students for taking up and shaping a successful career in Statistics.

Department of Statistics (A.Y.: 2021-22)

Course outcomes

Name of the Department	Class	Course Name	Course code	Course Outcome
Statistics	**F.Y.B.Sc . SEM-I**	**Descriptive Statistics I**	**ST-111**	After completing this course student will be able to **CO1)** Define- Mathematical Averages (AM,GM,HM) , Positional Averages (Median, Mode Partition values), Absolute (Range, Q.D., M.D., S.D. and Relative measures of dispersion, Moments Skewness and Kurtosis, Characteristics of Attributes. **CO2)** Explain- Constructions of Diagrams and Graphs , Mathematical Averages and Positional Averages, Absolute and Relative measures of dispersion, Moments Skewness and Kurtosis, Characteristics of Attributes. **CO3)** Write- Relation between AM ,GM, HM,Derivation of Median and Mode, Properties of Measures of central tendency and dispersion, First four raw and central moments, measures of Skewness and Kurtosis, concept of consistency in attributes, Yules coefficient of association, coefficient of colligation and relation between them.

		Discrete Probability and Probability distributions -I	**ST-112**	After completing the course, students will able to- **CO1)** Define- Sample space (Finite and countable infinite), Power set, Axiomatic definition of probability, Probability Mass function (pmf), Cumulative distribution function (cdf),Mathematical expectation,Binomial distribution,Hypergeometric distribution. **CO2)** Explain- Random experiment, events and types of events, Conditional Probability and Independence of events. **CO3)** Write- Examples on sample space, simple examples on probability based on permutation and combination, Theorems on probability, Properties of cdf.
		Statistics Practical	**ST-113**	**CO1.** Diagramatic representation of data,Histogram,Frequency polygon,ogive curves. **CO2.** Use of MS-Excel to draw random numbers and sampling **CO3.** Data interpretation from various graphs and diagrammes. **CO4.** Computation of measures of central tendency and dispersion **CO5.** Measures of skewness,kurtosis and box plot **CO6.** Computation of summary statistics using MS-Excel

	F.Y.B.Sc SEM-II	**Descriptive Statistic II**	**ST-121**	After completing the course, students will able to- **CO1)** Define- Types of correlation, fitting of line of Regression, Coefficient of Determination, Residual, and Unweighted and Weighted index numbers. **CO2)** Explain- Bivariate data, Correlation, Regression, Multiple and Partial correlation, Multiple Regression, Index Number, Types of Index Number.
				CO3) Write- Interpretation of r if r=1,r= -1, r= 0, Properties of correlation coefficient, Derivation of the formula for Spearman's rank correlation coefficient, Fitting of regression plan by method of least square, Properties of Multiple and Partial correlation coefficient, Price , Quantity and Value index number
		Discrete Probability and Probability distributions -II	**ST-122**	After completing the course, students will able to- **CO1)** Define- Random Variable, Expectation of random variable , Mean, Variance, Raw and central moments based on expectation of random variable, Poisson distribution, Geometric Distribution, Bivariate discrete random variable. **CO2)** Explain- Results on expectation of random variable, Mean and variance by using pgf. **CO3)** Write- Properties of pgf, Probability mass function-Mean-Variance-moments- cdf for standard discrete probability distribution, Recurrence relation, concept of marginal and conditional probability, Theorems on expectation, conditional mean and

				conditional variance.
		Statistics Practical	**ST-123**	**CO1.** Scatter Diagram,Correalation coefficient,Fitting of line of regression. **CO2.** Fitting of second degree curve,exponential curve. **CO3.** Fitting of Binomial distribution. **CO4.** Fitting of Poisson distribution **CO5.** Applications of Binomial, Poisson, geometric distributions **CO6.** Index numbers **CO7.** Scatter Diagram, Correalation coefficient, Fitting of line of regression, Fitting of second degree curve, exponential curve using MS-Excel
	S.Y.B.Sc. SEM-I	**Discrete Probability Distribution and Time Series**	**ST-231**	After completing the course, students will able to- **CO1.** Learn Negative Binomial Distribution, Multinomial Distribution, Truncated Distribution, with their Mean, Variance .moments and other properties. **CO2.** Learn the Meaning and need of time series analysis. Do Measurement of trend
		Continuous Probability Distribution	**ST-232**	After completing the course, students will able to- **CO1.** Understand concept of continuous distributions with real life situations **CO2.** Learn Uniform, Exponential, NormaL distribution. **CO3.** Compute mean, mode, variance, moments, cumulants for all Distributions **CO4.** Learn properties of each specified distribution

		Statistics Practical	**ST-233**	**CO1.** Fitting of Negative Binomial distribution. **CO2.** Fitting of Normal distribution. **CO3.** Model sampling from exponential distribution Implement an experimental approach. **CO4.**Time series-Estimation and forecasting of trend by exponential smoothing, moving averages, plotting of residuals, Fitting of AR model **CO5.**Estimation of trend, seasonality **CO6.** Fitting of Negative Binomial distribution, Fitting of Normal distribution using MS-Excel
	S.Y.B.Sc. SEM-II	**Statistical Methods and use of R-Software**	**ST-241**	After completing this course student will be able to **CO1** Learn basic concepts of multiple linear Regression Model **CO2** Learn Testing of Hypothesis **CO3** Understand Large Sample Tests **CO4**Understand the need of vital statistics and concept of mortality and fertility **CO5** Solve examples on Demography **CO6** Understand Queueing Models and Solve examples.

		Sampling distribution And inference	**ST-242**	After completing this course student will be able to **CO1** Learn Exact Sampling Distributions **CO2** Understand Chi-Square distribution, Student's t- distribution, Snedecores F distribution **CO3** Know the relations among the different distributions **CO4** Learn Testing of Hypothesis **CO5** Understand Large Sample Tests **CO6** Learn Testing of Hypothesis **CO7** Understand Small Sample (Exact) Tests
		Statistics Practical	**ST-243**	**CO1** Test for means & construction of confidence interval **CO2** Test for proportions & construction of confidence interval **CO3** Test based on chi square distribution i) Goodness of fit ii) Independence of attributes iii) Mc Neamar's test **CO4** Test for means & construction of confidence interval using MS-Excel **CO5** Tests using R-software

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DEPARTMENT OF CHEMISTRY

Rayat Shikshan Sanstha's

Mahatma Phule Mahavidyalaya, Pimpri, Pune - 17

DEPARTMENT OF CHEMISTRY (A.Y.: 2021-22)

Program Outcome

Name of the Program	Program outcome
B.Sc.	PO1. At the Completion of B. Sc. in Chemistry the Students: PO2. Provide a broad foundation in chemistry that stresses scientific reasoning and Analytical problem solving with a molecular perspective. PO3. Achieve the skills required to succeed in graduate school, the chemical industry and professional school. PO4. Get exposures of a breadth of experimental techniques using modern instrumentation PO5. Understand the importance of the Periodic Table of the Elements, how it came to be, and its role in organizing chemical information. PO6. Understand the interdisciplinary nature of chemistry and to integrate knowledge of mathematics, physics and other disciplines to a wide variety of chemical problems. PO7.Learn the laboratory skills needed to design, safely and interpret chemical research. PO8.Acquire a foundation of chemistry of sufficient breadth and the depth to enable them to understand and critically interpret the primary chemical literature. PO9. Develop the ability to communicate scientific information and research results in written and oral formats. PO10. Learn professionalism, including the ability to work in teams and apply basic
M.Sc.	PO1.This two year programme offers the opportunity to study chemistry at an advanced level,covering both the traditional core areas of chemistry as well as more specialist courses aligned to the research groupings of the department. PO2 The course provides opportunity for students to develop and demonstrate advanced knowledge understanding and practical / research skill.

Program Specific Outcomes:

Name of the Department	Program Specific Outcomes
Department of Chemistry	**B.Sc. Course:** On the completion of B.Sc. Chemistry the students: **PSO 1**:- Understand the scope, methodology and application of modem chemistry **PSO 2**:- Study theoretical and practical concepts of instruments that are commonly used in most chemistry field.

	PSO 3:- Plan and conduct scientific experiments and record the results of such experiments. **PSO 4:-** Get acquaint with safety of chemicals, transfer, and measurement of chemicals, preparation of solutions, and using physical properties to identity compounds and chemical reactions. **PSO 5:-** Describe how chemistry is useful to solve social, economic and environmental problem and issues facing our society in energy, medicine and health.
	M.Sc. Course Programme specific outcomes:- A Student **PSO1:** Gains complete knowledge about all fundamental aspects of all the elements of chemistry **PSO2**: understands the background of organic reaction mechanisms, complex chemical structures,Instrumental method of chemical analysis, molecular rearrangements and separationtechniques. **PSO3:** Appreciates the importance of various elements present in the periodic table, coordination chemistry and structure of molecules, properties of compounds, structural determination of complexes using theories and instruments. **PSO4:** Gathers attention about the physical aspects of atomic structure, dual behaviour, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, significance of electrochemistry, molecular segregation using their symmetry. **PSO5:** Learns about the potential uses of analytical industrial chemistry, medicinal chemistry and green chemistry. **PSO6:** Carry out experiments in the area of organic analysis, estimation, separation, derivative process, inorganic semi micro analysis, preparation, conductometric and potentiometer

Rayat Shikshan Sanstha's

Mahatma Phule Mahavidyalaya, Pimpri, Pune

Reaccredited with 'A' Grade by NAAC/ DST-FIST funded /An ISO 9001:2015 Certified College
Affiliated to Savitribai Phule Pune University, Pune (PU/PN/ACS/053)

Department of Chemistry

B.Sc Chemistry (A.Y. 2021-22)

UG Course outcome

Name of the department	Class	Course name	Course code	Course outcome
Department of Chemistry	**F.Y.B.Sc. Sem-I**	**Physical Chemistry**	**CH 101**	CO 1. Describe the laws of thermodynamics CO 2. Calculate enthalpy, bond energy, bond dissociation energy, resonance energy CO 3. Relate free energy and equilibrium CO 4. Compare exergonic and endergonic reaction CO 5. Differentiate strong, moderate and weak electrolytes CO 6. Analyse factors affecting degree of ionization
	F.Y.B.Sc.	**Organic Chemistry**	**CH 102**	CO 1. Describe inductive effect, electromeric effect, resonance and hyperconjugation CO 2. Compare homolysis and heterolysis CO 3. Differentiate between geometrical and optical isomerism CO 4. Apply E/Z nomenclature to various organic compound CO 5. Explain alkanes, alkenes and alkynes CO 6. Interpret preparation methods for alkanes, alkenes and alkynes

	F.Y.B.Sc.	**Chemistry Practical Couse I**	**CH 103**	CO 1. Recognize the importance of chemical safety and lab safety CO 2. Determine the thermochemical parameters and related concepts CO 3. Measure pH of various solutions by using pH meter CO 4. Prepare various buffer solutions CO 5. Analyze various elements from the given organic compound CO 6. Apply chromatographic techniques for separation of constituents of mixtures
	F.Y.B.Sc. **Sem-II**	**Inorganic Chemistry**	**CH 201**	CO 1. Define origin of quantum mechanics and its need CO 2. Describe various theories and principles related atomic structure CO 3. Illustrate Schrodinger equation for hydrogen atom CO 4. Discuss periodic table and periodicity of elements CO 5. Explain characteristics of various chemical bonds CO 6. Summarize Born-Lande equation and Born-Haber cycle
	F.Y.B.Sc.	**Analytical Chemistry**	**CH 202**	CO 1. Define analytical chemistry and common analytical problems CO 2. Describe various calculations used in analytical chemistry CO 3. Differentiate between mass and weight CO 4. Explain qualitative analysis of organic compounds CO 5. Compare between paper and thin layer chromatography CO 6. Illustrate pH measurement
	F.Y.B.Sc.	**Chemistry**	**CH 203**	CO 1. Synthesize commercially important

		Practical Couse II		inorganic compounds CO 2. Apply volumetric analysis for various inorganic compound estimation CO 3. Analyze commercial products containing inorganic substances CO 4. Draw polar plots of s and p orbitals CO 5. Use various purification techniques for organic compounds CO 6. Prepare derivatives of various organic compounds

Name of the department	**Class**	**Course name**	**Course code**	**Course outcome**
Department of Chemistry	**S.Y.B.Sc.** **Sem-III**	**Physical & Analytical Chemistry**	**CH 301**	CO 1. Define kinetics, rate laws and rate constants CO 2. Explain factors affecting rate of reaction CO 3. Apply adsorption process to real life problem CO 4. Illustrate different terms related to errors in quantitative analysis CO 5. Interpret calculations involved in volumetric analysis CO 6. Compare various titrations
		Inorganic & Organic Chemistry	**CH 302**	CO 1. Define the terms related to molecular orbital theory CO 2. Distinguish between atomic and molecular orbital CO 3. Apply IUPAC nomenclature to coordination compound CO 4. Correlate reagent and reactions CO 5. Compare nucleophilic substitution (SN^1, SN^2 and SN^i) reactions CO 6. Differentiate between alcohols, phenols and ethers

		Chemistry Practical - III	**CH-303**	CO 1. Examine chemical kinetics by various experiment CO 2. Analyze inorganic compounds by quantitative and qualitative analysis CO 3. Separate binary mixture of organic compounds CO 4. Prepare various organic compounds CO 5. Determine equivalence point of neutralization of acetic acid and sodium hydroxide CO 6. Estimate various compounds from given solution and find errors in quatitative analysis
	S.Y.B.Sc. Sem-IV	**Physical & Analytical Chemistry**	**CH-401**	CO 1. Define system, phase in system, degree of freedom, one /two component system CO 2. Explain Gibb's phase rule and its thermodynamic derivation CO 3. Derive distribution law and its thermodynamic proof CO 4. Apply conductometric methods of analysis to real problem in analytical laboratory CO 5. Illustrate Lambert-Beer's law and its derivation CO 6. Predict separation of ions using resins
		Inorganic and Organic Chemistry	**CH-402**	CO 1. Describe isomerism in coordination complexes CO 2. Identify inner and outer orbital complexes CO 3. Calculate field stabilization energy and magnetic moment for various complexes CO 4. Perform inter conversion of functional groups CO 5. Relate reagent and reactions of

				carboxylic acids and their derivatives CO 6. Explain stereochemistry of cyclohexane
	S.Y.B.Sc.	**Practical Chemistry IV**	**CH-403**	CO 1. Determine the cell constant by using conductometric titration CO 2. Separate binary mixture of cations by column chromatography CO 3. Analyze variation of mutual solubility temperature with % concentration for the phenol-water system CO 4. Verify the Freundlich and Langmuir adsorption isotherm for adsorption of acetic acid on activated charcoal CO 5. Synthesize various coordination compounds CO 6. Determine the unknown concentrations of various solutions

Name of the department	Class	Course name	Course code	Course outcome
Department of Chemistry	**T.Y.B.Sc. Sem-V**	**Physical Chemistry** DSEC-I	**CH 501**	CO 1. Describe the De Broglie hypothesis and uncertainty principle CO 2. Solve Schrodinger equation for 1D, 2D and 3D model CO 3. Differentiate between Rayleigh, Stokes and anti-stokes lines in a Raman spectrum CO 4. Classify molecules on the basis of moment of Inertia CO 5. Analyse quantum yield and explain reasons for high and low quantum yield CO 6. Categorize various photochemical reactions
		Analytical Chemistry	**CH 502**	CO 1. Define the terms- gravimetry, co-precipitation, post precipitation CO 2. Explain applications of gravimetry in determination of various ions CO 3. Classify basic radicals in groups CO 4. Illustrate factors affecting thermogravimetric analysis CO 5. Review various parts of spectrophotometer CO 6. Select a particular method of analysis of a sample
		Physical Chemistry Practical I	**CH 503**	CO 1. Determine the specific refractivity's of the given liquids and their mixture CO 2. Determine the refractive index of a series of salt solutions CO 3. Estimate various ions by colorimetry CO 4. Analyze acid vs base conductometrically CO 5. Evaluate the molecular weight of a high polymer by using viscometer CO 6. Determine the radius of glycerol molecule from viscosity measurement

	DSEC-II	**Inorganic Chemistry - I**	**CH-504**	CO 1. Describe the electroneutrality principle and different types of pi bonding CO 2. Explain MOT of octahedral complex CO 3. Classify reactions of coordination compounds CO 4. Justify position of d-block elements in periodic table CO 5. Differentiate between d-block and f-block elements CO 6. Illustrate metals, semiconductors and Insulators on the basis of band gap
	DSEC-II:	**Industrial Chemistry - I**	**CH-505**	CO 1. Describe the importance of chemical industry CO 2. Compare between batch and continuous process CO 3.Explain manufacturing process and uses of basic chemicals CO 4. Illustrate processes involved in sugar industry and fermentation CO 5. Review the manufacturing of soaps and detergents CO 6. Explain synthesis, structures, properties and applications of dyes and pigments
	DSEC-II	**Inorganic Chemistry Practical - I**	**CH-506**	CO 1. Estimate various ions using gravimetric analysis CO 2. Analyze sodium bicarbonate from mixture by thermal decomposition CO 3. Determine water of crystallization by thermal decomposition CO 4. Synthesize various inorganic complexes CO 5. Separate ions by Inorganic qualitative analysis CO 6. Analyze iron, chloride and sulphate from pharmaceutical raw material by limit test

	DSEC-III:	**Organic Chemistry - I**	**CH-507**	CO 1. Define and classify polynuclear and heteronuclear aromatic hydrocarbons CO 2. Describe meaning of active methylene group, its preparation and applications CO 3. Explain various reactions and mechanisms CO 4. Illustrate different types of intermediates in rearrangement reaction CO 5. Differentiate between 1,1 and 1,2-elimination CO 6. Interpret mechanisms of E^1, E^2, E^{1cB} reactions
	DSEC-III	**Chemistry of Biomolecules**	**CH-508**	CO 1. Describe cell and differentiate between a bacterial cell, plant cell, and animal cell CO 2. Explain biological composition and organization of cell membrane CO 3. Discuss carbohydrates and their biochemical significance in living organisms CO 4. Illustrate the types of lipids, structure of lipids and properties of lipids CO 5. Recall amino acids and proteins CO 6. Infer the importance of enzymes and hormones
	DSEC-III	**Organic Chemistry Practical-I**	**CH-509**	CO 1. Separate, purify and analyse binary mixtures CO 2. Describe the techniques involved in drying and recrystallization method CO 3. Synthesize various organic compounds through greener approach CO 4. Predict alternative solvent media and energy sources for chemical processes CO 5. Expert in various techniques of preparation and analysis of organic substances CO 6. Plan to use the purification technique for chemical reaction

		Introduction to Medicinal Chemistry	**CH-510 (A)**	CO 1. Describe the basics of drug chemistry CO 2. Explain bio-physicochemical properties in drug action and design CO 3. Illustrate drugs for infectious diseases CO 4. Recognize drugs for non-infectious diseases CO 5. Review biological activity parameters and importance of stereochemistry of drugs and receptors CO 6. Predict mechanism of action of drugs belonging to the classes of infectious and non-infectious diseases
		Environmental Chemistry	**CH-511 (A)**	CO 1. Describe importance and conservation of environment CO 2. Explain biogeochemical cycles of C, N, P, S and O CO 3. Compare organic and inorganic pollutants CO 4. Interpret water quality parameters CO 5. Review water quality parameters and standards CO 6. Plan waste water treatment
	T.Y.B.Sc. Semester-VI	**DSEC-IV Physical Chemistry-II**	**CH-601**	CO 1. Describe the components of an electrochemical cell 2. Determine the e.m.f. of an electrochemical cell 3. Calculate the mass of a unit cell 4. Explain the sign convention for electrode potentials 5. Estimate the equilibrium constant of a cell reaction 6. Predict crystal structure of NaCl using Bragg's method

	DSEC-IV	**Physical Chemistry-III**	**CH-602**	CO 1. Describe the principles and applications of colligative properties of dilute solutions CO 2. Understand the relation between Vant Hoff's factor and degree of dissociation of electrolyte CO 3. Calculate the molecular weight of nonelectrolytes using colligative properties CO 4. Evaluate the factors affecting the rate of reactions in solids CO 5. Compare the electronic structure of solids, conductors and insulators CO 6. Classify polymers in various types
	DSEC-IV:	**Physical Chemistry Practical-II**	**CH-603**	CO 1. Determine the pKa value of given monobasic weak acid by potentiometric titration CO 2. Calculate the formal redox potential of Fe^{+}/Fe^{3+} system potentiometrically CO 3. Estimate the dissociation constant of oxalic acid by pH-metric titration with strong base CO 4. Evaluate pKa of given weak acid by pH metry titration CO 5. Determine the molecular weight of solute by depression in freezing point method CO 6. Estimate the molecular weight of agiven polymer by turbidometry
	DSEC-V	**Inorganic Chemistry - II**	**CH-604**	CO 1. Define the organometallic chemistrty CO 2. Understand M-C bonding in binary metal carbonyls CO 3. Differentiate homogeneous and heterogeneous catalysis CO 4. Illustrate the cycles of homogeneous catalysts like Wilkinson's catalyst, hydroformulation reaction, Monsanto acetic acid synthesis, Heck reaction CO 5. Categorize various heterogeneous catalysts 5. Explain catalytic reaction mechanism 6. Elucidate the biological role of inorganic ions and compounds

	DSEC-V	**Inorganic Chemistry - III**	**CH-605**	CO 1. Describe the concept of acid-base and their theories CO 2. Compare the strength of different acids and bases CO 3. Identify the C.N. of an ionic solid CO 4. Solve problems based on Born-Haber cycle CO 5. Classify zeolites on the basis of building units CO 6. Plan the synthesis of various nanoparticles
	DSEC-V:	**Inorganic Chemistry Practical-II**	**CH-606**	CO 1. Estimate ions by using volumetric analysis CO 2. Determination of elements (e.g. Na, K) by flame photometry CO 3. Purify water using cation/anion exchange resin CO 4. Synthesize various nanoparticles CO 5. Verify periodic trends using solubility of alkaline earth metal CO 6. Analyze degradation of H_2O_2 using Fe catalyst
	DSEC-VI:	**Organic Chemistry-II**	**CH-607**	CO 1.Define the various regions of electromagnetic spectrum CO 2.Understand the principles of various spectroscopy like UV-Visible, IR and NMR CO 3.Calculate λmax value for various compounds CO 4.Interpret IR frequencies of various molecules CO 5. Estimate structure of organic compounds by using NMR spectroscopy CO 6. Predict the structure of organic compounds on the basis of spectral data such as λmax , IR frequencies and chemical shift

	DSEC-VI:	**Organic Chemistry-III**	**CH-608**	CO 1. Describe the terms used in retrosynthesis like disconnection, synthons, synthetic equivalence, FGI, TM CO 2.Apply retrosynthetic approach to various target molecules CO 3.Explain chemistry of reactive intermediates CO 4. Discuss various commonly used chemical reactions and rearrangements CO 5.Illustrate various oxidizing and reducing reagents CO 6.Predict synthesis of natural products such as terpenoids and alkaloids
	DSEC-VI	**Organic Chemistry Practical-II**	**CH-609**	CO 1.Explain 'fingerprint region' of an infrared spectrum CO 2.Identify the functional group or groups present in a compound CO 3.Calculate coupling constants from 1H NMR spectra CO 4.Determine molecular weight of given tribasic acid CO 5.Apply the principles of extraction CO 6.Separate organic compounds by using column chromatography
	SEC-III	**Chemistry of Soil and Agrochemicals**	**CH-610 (A)**	CO 1.Describe the different components and properties of soil CO 2. Classify soil on the basis of pH CO 3. Identify the problematic soil and recommended method for their reclamation CO 4. Predict the plant nutrients and related functions CO 5. Relate the role of various fertilizers and manures required for plant growth CO 6.Apply various methods for soil analysis

	SEC-IV	**Analytical Chemistry-II**	**CH-611(A)**	CO 1. Describe the principle and application of solvent extraction CO 2. Explain instrumental methods of Chromatographic Analysis CO 3. Summarize high performance liquid chromatography CO 4. Illustrate basics of gas chromatography CO 5. Surrey components of Atomic Absorption Spectroscopy CO 6. Apply Atomic Absorption Spectroscopy to determine trace elements.

PG Outcomes

Name of the department	Class	Course name	Course code	Course outcome
Department of Chemistry	**M.Sc I Sem I**	**Physical Chemistry**	**CHP110**	CO 1 Describe the importance of quantum chemistry CO 2 Interpret Valence bond theory, hybrid orbitals, geometry and hybridization, molecular orbital theory CO 3 Explain the facts of Thermodynamics CO 4 Analyze Kinetics of Complex Reactions & Molecular Reaction Dynamics
		Inorganic Chemistry	**CHI130**	CO 1. Summarize chemistry of s and p block elements w.r.t. their compounds, their reactions and applications. CO 2. Describe the advance chemistry of boranes, fullerene, zeolites, polymers etc. CO 3. Identify Organometallic chemistry of some important elements from the main groups and their applications CO 4. Illustrate molecules in 3 dimensions. CO 5. To infer concept of symmetry and able to pass various symmetry elements through the molecule. CO 6. Interpret the concept and point group and apply it to molecules.
		Organic Chemistry	**CHO150**	CO1. Describe some fundamental aspects of organic chemistry, to learn the concept aromaticity, to understand the various types of aromaticity CO 2. Define and describe heterocyclic compound containing one and two hetero atoms with their structure, synthesis and reactions. CO 3. To interpret stereochemistry of organic compounds; able to do interconversion of Fischer to Newmann, Newmann to Sawhorse and vice versa, Able to assign R and S to given molecules; understand stereoselective and stereospecific reactions; acquire

				knowledge on topicity. CO4. To study structure, formation, stability and related name reaction of intermediates like Carbocation, Carbanion, Free Radical, Carbenes and nitrenes; Recognize neighboring group participation
		Introduction to Chemical Biology-I	Elective Option-C:	CO1) Analyze new areas of research in both chemistry and allied fields of science and technology. CO 2) Students will be able to function as a member of an interdisciplinary problem solving team. CO3) To summarize thorough idea in the chemistry of carbohydrates, amino acids, proteins and nucleic acids etc. CO4) Interpret the chemical basis for replication, transcription, translation and how each of these central processes can be expanded to include new chemical matter.
	M.Sc. I Sem II	**Physical Chemistry**	**CHP 210**	CO1 Summarize Applications of Radioactivity CO2 Explain discovery of nuclear fission CO3 Infer the introduction to Molecular Spectroscopy
		Inorganic Chemistry	**CHI 230**	CO1 Explain the importance of bioinorganic chemistry. CO2 Interpret Role of metals in Metalloprotein and metalloenzymes. CO3 Predict the similarities in coordination theory for metal complexes and metal ions complexed with biological ligands. CO 4 Summarize the importance and transport of metal ions. CO5. Estimate no of microstates and meaningful term symbols, construction of microstate table for various configuration CO6 Infer Hund's rules for arranging the terms according to energy. CO7 Interpret interelectronic repulsion. CO8 Interpret concept of weak and strong ligand field.

		Organic Chemistry II	CHO – 250	CO1. Predicting reaction mechanism and stereochemistry of electrocyclic reactions. CO2 Describe free radical reactions, mechanism and the stereo chemical outcomes. CO3. Summarize the basic principle of spectroscopic methods and their applications in structure elucidation of organic compounds using given spectroscopic data or spectra.
		Introduction to Chemical Biology-II	**CHG 190**	CO 1 Interpret the new areas of research in both chemistry and allied fields of science and technology. CO 2 Students will be able to function as a member of an interdisciplinary problem solving team. CO 3 Summarize thorough idea in the chemistry of carbohydrates, amino acids, proteins and nucleic acids etc. CO 4 Compare the chemical basis for replication, transcription, translation and how each of these central processes can be expanded to include new chemical matter.
		Chemical Biology-II Practical		CO1 Interpret the chemistry of carbohydrates, amino acids, proteins and nucleic acids etc. CO2 Describe the chemical basis for replication, transcription, translation and how each of these central processes can be expanded to include new chemical matter.
Department of Chemistry	**M.Sc II**	**Organic Chemistry**		CO1 Summarize the various reaction, their mechanism and thus synthesis. CO2 Interpret various spectroscopic techniques and thus they are able to predict structures of unknown compounds using spectroscopic data. CO3 In medicinal chemistry the students Summarize structure activity relationship of various drugs.

		Practical	**Ternary Mixture Separation**	CO1 Summarize pre-experiment (Reading MSDS, purification of reactants and reagents, mechanism, stoichiometry etc) and post-experiment skills (work-up, isolation and purification of products, physical constants characterization using any spectroscopic Technique CO 2. Collect and Examine reasonable quantities of color pigments to do the characterization (Physical Constant, Elemental analysis functional group test etc) and should also form the appropriate derivative. CO 3.Prepare pigments for developing food grade natural colors from lesser known plant sourcess
				CO 1. Interpret and analyze the concept of type determination and separation CO 2. Meticulously record physical constants CO 3. Perform micro scale chemical elemental analysis CO 4. Perform qualitative estimation of functional groups CO 5. Recrystallize /distill the separated compounds CO 6. Extend these skills to organic synthesis

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Rayat Shikshan Sanstha's

Mahatma Phule Mahavidyalaya, Pimpri, Pune

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Affiliated to Savitribai Phule Pune University, Pune (PU/PN/ACS/053)

Department of Mass Communication (B.Voc)
Program outcomes (A.Y.: 2021-22)

Name of the Program	Program outcome
Mass Communication (B.Voc)	• POs 1: Demonstrate an understanding of mass media communication values including timeliness, impact, and storytelling ability as portrayed in written, visual and spoken formats. • POs 2: Learn and apply Audio- Video skills and media management principles to excel in professional career in the field of Mass Communication. • POs 3: Exhibit professional ethics, Media regulations and communication skills, engage in lifelong learning and to adapt emerging technologies and developing creative solutions for target audience. • POs 4: Develop and use original content for different media formats, including written, visual, radio, internet, and apps. • POs 5: Ability to understand the concepts of key areas in Mass Communication. • POs 6: To apply the objectivity and critical thinking for communicating to masses through a variety of mediums such as Short Films, Documentary Films, Television, Advertising and PR Campaign, Event Management, Broadcast Journalism and New Media. • POs7: To impart the knowledge of Mass communication & Journalism covering wide areas of studies. • POs8: To empower learners by communication, professional and life skills. • POs9: To imbibe the culture of research, innovation, entrepreneurship and incubation. • POs10: Create awareness to become an enlightened citizen as well as a dynamic professional with commitment to deliver one's responsibilities strictly adhering to highest standard of ethics and professionalism. • POs11: The program focuses on in-depth knowledge practical and theoretical aspects of Video Production. • POs 12: The program is designed to create awareness among the students about Brand management.

Program Specific outcomes

Name of the Program	Program Specific outcome
Mass Communication (B.Voc)	• Understanding the fundamental relations between society, culture and communication. • Provide advanced knowledge on communication theories and models. • Introduce students to the practical arena of exploring the potential of communication tools to become an able communicator. • To develop the learner into competent and efficient Media & Entertainment Industry ready professionals • To inculcate professional ethics, values of Indian and global culture. • To prepare socially responsible media Professional, media academicians, researchers, professionals with global vision.

	• The students will be able to write specialized stories for various media. • The students will understand the importance of media research and Advertising. • The students will be able to make specialized Audio Video Programmes for various media. • The students will learn to use Public Relation tools like Press release, news writing etc • An ability to develop professional skills and use in the field of print media, electronic media and development communication • To develop the learner into competent and efficient Media & Entertainment Industry ready professionals.

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Mass Communication B.Voc (A.Y.: 2021-22)

Course outcomes (Semester-wise)

Name of the Department	Class	Course Name	Course Outcome
B.Voc (Semester I)	First Year	Introduction to Mass Communication MC 101	1.Understand Meaning and Need of Mass Communication 2. Gain the knowledge of mass Communication field and understand the functioning of Mass media. 3. Understanding the process of communication, including different forms, levels and barriers. 4. Knowledge about communication models and its application 5. Understanding Media Systems and Communication Theories 6. Learning about the wide array of communication from folk media to Social media.
	First Year	Introduction to Media MC102	1. Gain the understanding of the traditional Media. 2. Understanding the electronic and web media and inculcate the knowledge of growth of print, electronic Media and Films. 3. To understand the working pattern of electronic media platform. 4. To create understanding of electronic media content creation 5. Gain the understanding of the New Media. 6. To understand the media Organization structure.
	First Year	Basics of Visual Communication MC103	1 Develop the knowledge of basic elements of visual Communication through Which create scenes of Visual Communication. 2 Students will be able to articulate the fundamental elements and principals of formalist design that enable a visual message to meaningfully engage an audience. 3 Students will be able to conceive a visually unified and balanced design using various two and three-dimensional media that communicates a clear message to an audience.

			4 Students will be able to articulate the fundamental elements and principals of formalist design that enable a visual message to meaningfully engage an audience. 5 Students will be able to articulate the role of visual communication within society, and implement the creative process to solve diverse visual communication problems
	First Year	Communication and Soft Skills MC 104	1. To strengthen oral communication skills in 2. Hindi 3. Regional Language 4. English 5. Develop the knowledge of written in Hindi/ English/Regional Language. 6. To impart knowledge about the elements of effective communication skills. 7. To inculcate the knowledge of employment communication about job interview.
	First Year	Computer Application MC105	1. To learn about Computer. 2. To understand Software and Operating System. 3. To understand IT Communication. 4. To learn about Office Automation Package. 5. .To learn about Document, creation, manipulation and storage of Chart and Slide Show Package 6. Gain an understanding of Software's and Operating System to learn Computer to strengthen in IT skill
	First Year	Basic Photography MC106	1. To learn and earn throw photography. 2. Develop a sense to operate Professional camera in advance Audio- Video Field. 3. Understand the mechanism of DSLR Camera. 4. To learn about different camera lenses and their creative usage in photography 5. Understanding about photographic basic framing. 6. Learn the indoor and outdoor photography

Name of the Department	Class	Course Name	Course Outcome
B.Voc (Semester II)	**First Year**	**Social issue and Idea (Mc 201)**	1. Understand the sociological concept and theories 2. Understand the importance of sociology 3. Create understanding of the human society 4. To develop the knowledge of Indian culture and Society 5. Inculcate the knowledge of current socio-cultural issues.
B.Voc (Semester II)	First Year	Introduction To journalism (Mc 202)	1. Introduce students to the basics of journalism. 2. Inculcate the knowledge of elements of journalism. 3. Acquaint them with important aspects of the process of Journalism. 4. Develop the knowledge of skills of journalism. 5. Enhance understanding of the technical terms and jargons of Journalism. 6. To understand the theory, methods, and practice of gathering information and writing news.
	First Year	Language skills (MC 203)	1. Improved language skills. 2. Corporate languages and skill. 3. Stages of languages skills. Develop Career base skill 4. Learn the vocabulary 5. Principles of organizing & developing a paragraph, Topic sentence, Argument-Counter argument.
	First Year	Advance photography and Photojournalism (MC 204)	1. Photography hardware and software with equipments specific. 2. Prepare photo journalist. Encourage self employment. 3. Encourage creative skills. 4. Develop interest in photo journalism knowledge about photography and lighting. 5. Developed a skill in the photo editing.
	First Year	Design and Graphics (Mc 205)	1. Introduction to graphics design. 2. Learn Graphics and graphics related software's. 3. Logo branding and graphics industry how it work? 4. How graphics and entertainment industry co related with each other and their details.

	First Year	Experimental Journal (Mc 206)	1. Understand basics of news writing. 2. To understand the theory, methods, and practice of gathering information and writing news. 3. To understand different writing techniques. 4. To develop the knowledge of web writing. 5. To inculcate the knowledge of news and backgrounder.
B.Voc (Semester III)	Second Year	Introduction to Mass communication theory (MC 301)	1. Impart basic concepts meaning and models of mass communication 2. Make students aware about problems and issues of the mass communication. 3. Inculcate knowledge of communication and relations with media and society. 4. Know the functioning of media in mass communication coverage. 5. Understanding the India and its problems with mass communication theory.
	Second Year	Introduction to television (MC 302)	1. Impart basic concepts of Television and its development. 2. Aware importance of television in media. 3. Encourage graduates for self employability. 4. Inculcate knowledge of economy of television media. 5. Knowledge of the functioning of television channel, agencies, production house etc. 6. Develops skills to write and direct the Television Shows.
	Second Year	Indian political System (MC 303)	1. Create understanding of the world in historical and contemporary context. 2. To create understanding of the world politics and economics. 3. Impart knowledge of writing on global issues. 4. Inculcate the knowledge of international important developments. 5. Develop the knowledge of India's foreign policy.
	Second Year	Basic of Videography (MC 304)	1. Learn and earn throgh videography. 2. To understand operation of video camera. 3. Learn to operate various camera equipments during the shooting. 4. Learn and work about various types of videography and its related terminology. 5. Learn the three point lighting for

			videography and its creative usage. 6. Understanding the various lenses and its creative use in the shooting.
	Second Year	Video Editing (MC 305)	1. Familiarize the students with the basics of editing. 2. Understand the process of online form and offline editing. 3. How to earn through editing. 4. Inculcate the knowledge of dummy, printing and layout. 5. Develop the knowledge of edit. 6. Relation of VFX, sound and edit.
	Second Year	Broadcast journalism (MC 306)	1. Understand Television journalism while practicing in the studios how to handle and use various television gadgets. 2. Students will understand new trends in television journalism. 3. Introduce student's techniques and skills for presentation, anchoring for television programme production. 4. Students will know the procedure and techniques of different programme formats of television news and news based programme such as Field Report, Special Report, Election Report, Ground Report and walk and talk programme. 5. Students will acquire skills and learn to use different software's for editing television Programmes.
B.Voc (Semester Iv)	Second Year	Radio Programming (MC 401)	1. Understand radio journalism while practicing in the studios how to handle and use various radio instrument and the mixers. 2. Engage students in new trends in radio journalism 3. Introduce students to the presentation, interviewing skills for new online radio. 4. Visit radio commercial radio studios 5. Acquaint students with the real world of radio production and transmission. 6. To learn about Radio Production and Programming.
	Second Year	Brand management (MC 402)	1. Understand the brand. 2. Brand concept in media. 3. How and why brand marketing exits. 4. Various types of brands and their structure and study. 5. To understand the Product. 6. To learn about Brand Value & Management

	Second Year	Public Relation (MC 403)	1. Provide knowledge about the definitions and concepts of public relations, publicity, propaganda, advertising and e-PR. 2. To know the difference between public relations and corporate communications, public relations and advertising, public relations and propaganda, public relations and publicity ,propaganda and publicity. 3. To understand the basic tools of public relations. 4. Impart the fundamentals of public relations writings. 5. learn the ethics and laws of public relations
	Second Year	Film appreciation (MC 404)	1. Understand the film language. 2. Understand the making of films. 3. Understand the various aspect of film. 4. Understand the film Theory 5. Understanding the film movement in India (parallel cinema) 6. Understanding about regional films in India.
	Second Year	Digital media and marketing (MC 405)	1. Provide knowledge about the definitions and concepts of Digital media concept 2. To know the difference between Digital media and other media. 3. Understand the basic tools of digital media. 4. Impart the fundamentals of digital media and marketing career options.
	Second Year	Audio production (MC 406)	1. Introduction to Audio production 2. Learns various aspects about sound recording sync sound and non sync. 3. Learn various software audio production 4. Film and audio relations 5. How audio and entertainment industry co related with each other and their details. (film project) 6. Learn about dubbing for films in sound studio.
B.Voc (Semester V)	Third Year	Media Research (MC 501)	1. Impart the definitions and basic concepts of research, communication research, media research, social research and difference between communication research, media research and social research. 2. Understand the need, role, importance functions and ethics of research. 3. Know the elements of research.

			4. Learn the types of research. 5. Impart the knowledge of basics of statistics and media metrics. 6. Students would be able to identify, and choose different approaches to mass communication research
	Third Year	Script writing (MC 502)	1. Introduction to script writing. 2. Learn the scripting structure and elements in the fiction and nonfiction form. 3. Various types of scripts study. 4. Writing project scripts. 5. Learn the script writing software. 6. Learn how register the final draft and pitch the script to Production houses.
	Third Year	Basic Advertising (MC 503)	1. Impart basic concepts of advertising and its development. 2. Aware importance of advertising in media. 3. Encourage graduates for self employability. 4. Inculcate knowledge of economy of media. 5. Knowledge of the functioning of advertising agencies. 6. Learn the craft of Advertisement making And create Advertising for various products.
	Third Year	Research seminar(MC 504)	1. Practical about research study. 2. To understand the importance of Research, to study Research in Media, to go through the Research process.
	Third Year	Video production (MC 505)	1. Understand about various audio – video format 2. Learn about Production design 3. Role of Pre Production in shooting 4. Role of Production in shooting 5. Role of Post production 6. Learn the Formation of team delivering the Audio – video Product.
	Third Year	Internship (MC 506)	Internship Period – Any media production house.
B.Voc (Semester V)	Third year	Media management - Laws and ethics (MC 601)	1. Have an understanding of Indian Constitution. 2. Shall get aware of legal aspects of the media and its values. 3. Shall have an overview of recent changes and future challenges of media regulation 4. Shall have understanding of media ethics. 5. Shall know how media laws and ethics empower media practitioners to perform

			their duties with commitment. 6. Students will know the Codes of ethics of news papers, television and Press Council of India
	Third Year	Current Affair (MC 602)	1. Impart the extensive knowledge about general knowledge, general awareness and contemporary activities at local, regional, national and international level about socio – economic issues. 2. Develop the extensive knowledge about general knowledge, general awareness and contemporary activities at local, regional, national and international level about political issues. 3. To inculcate the extensive knowledge about general knowledge, general awareness and contemporary activities at local, regional, national and international level about educational and cultural issues. 4. To impart the extensive knowledge about general knowledge, general awareness and contemporary activities at local, regional, national and international level about religious and spiritual issues. 5. To develop the extensive knowledge about general knowledge, general awareness and contemporary activities at local, regional, national and international level about media related issues.
	Third Year	Media Culture (MC 603)	1. Acquaint students with the glorious journey of media culture. 2. To enhance understanding of the origin of the traditional print, electronic and web media with local and relevant culture 3. To inculcate the knowledge of growth of print, electronic and cinema. And media culture. 4. Inculcate knowledge of development communication and relations with media and society. 5. Know the functioning of media in development coverage. 6. Understanding the rural India and its problems.
	Third Year	Projects	And 3 project – which are the practicals.
		MC 604 Vocational Project -1	(Short Film or Documentary) Group Activity 1. At the end of the session the student will be able to do research, storytelling process. 2. Students will be able to record video as

			per the concept of Short film 3. At the end of the session the student will be able to do Story development, Interviewing. 4. After completing the programme will able to make fiction film and documentary film. 5. At the Completion of the Project the student will be able to Production Design. 6. At the end of the session the student will be able to capture a drama.
		MC 605 Vocational Project -2	(Mini-Dissertation) Individual Activity 1. Student would gain conceptual knowledge of communication research. 2. Students would be able to finalize research design, and use various research tools to conduct research. 3. Students would be able to conduct survey(s), use sampling techniques, and conduct quantitative research.. 4. Students get clarity on the research tools and techniques during this course as they themselves design it under the guidance of their guide. 5. Students do their Dissertation under the guidance of media academicians or practitioners who help them in relating the theoretical skills of research to practical field research. 6. This course also provides them further direction to work in the given media platform pertaining to the development issues they might come across.
		MC 606 Vocational Project -3	Vocational Project -3 (In-depth Report Writing) Individual Activity 1. Student will able to cover and write balanced reports through objectivity, accuracy, and brevity and understand the duties and qualities of a responsible reporter. 2. Student will able to demonstrate an awareness of journalism as an ethical practice. 3. Student will able to demonstrate preparation for an entry-level position in the profession through a portfolio exhibiting their work.

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Academic Year 2021-22

Department of BBA(CA)

Program Outcomes

- POs 1: Ability to understand the concepts of key areas in computer Applications.
- POs 2: Learn and apply computing and managerial principles with computer Programming in professional career in the field of Computer Applications as an individual, as part of a team, and to deliver within constraint limits as a professional.
- POs 3: To adopt cyber regulations and communication skills, engage in learning and to learn technologies and methods for developing innovative solutions.
- POs 4: Exhibit professional ethics, cyber regulations and communication skills, engage in lifelong learning and to adapt emerging technologies and tools for developing innovative software solutions.
- POs 5: To adapt emerging technologies and tools for developing innovative web solutions for emerging online platform.
- POs 6: Ability to design and develop system, component or process as well as test and maintain it so as to provide promising solutions to industry and society.
- POs 7: To Enhance various Programming to develop programming skills with several managerial skills and also forecasting good team members for industrial environment.
- POs 8: To Provide adequate knowledge of Advanced web technologies with latest technologies enhance to groom business with digital marketing, web development, software development and marketing skills.
- POs 9: To create a solid platform for programmer to adapt themselves to upgrade their knowledge through post graduate programs and also for multidisciplinary programs like business administration and technologies
- POs 10: To capture knowledge of software project management and also to develop skills so graduate can work with different environment and also can provide different employment with their own business framework.
- POs 11: To implement various methods to solves societal goals, and also learn various objectives of industrial outcomes to make awareness and to find solutions on real world problems.
- POs 12: To capture the things and make solution through various methods, like mobile application development, website development and also providing wide range solutions.

Program Specific Outcomes

- PSOs 1: Students should be able to apply modern practices and strategies in software project development using open-ended programming environments, to deliver quality product for business success in context with societal needs.

- PSOs 2: An ability to gain knowledge on design and control strategy; techniques to secure information and adapt to the rapidly changing world of information technology needs.

- PSOs 3: Design and develop Web and Mobile based computer applications

- PSOs 4: An ability to use and develop cloud software, administrative features. infrastructure services and architectural patterns; ethical hacking and forensic security technologies.

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Mahatma Phule Mahavidyalaya, Pimpri Pune 17

Academic Year 2021-22

Department of BBA(CA)

Course outcomes (Semester-wise)

Name of the Department	Class	Course code	Course Name	Course Outcome
BBA(CA)	FYBBA (CA) Sem-I	CA-101	Business Communication	• To adept to communicate and writing skills effectively. • Developing and delivering effectivepresentations. • To enhance brief about organizational method of so they work smoothly with communication skills. • Create awareness among students aboutMethods and Media of communication. • Make students familiar with information technology and improve job seeking skills. • To deliver best knowledge about various types and levels of communication
		CA-102	Principles of Management	• Practice the process of management's fourfunctions: planning, organizing, leading, and controlling • To enhance knowledge of management and level of management • Evaluate leadership styles to anticipate theconsequences of each leadership style. • Understand the working of businessorganization • Inculcate Entrepreneurial skills • To develop managerial skills in students with good managerial skills.
		CA-103	C Language	• To Understand how to use programming in day-to-day Applications • Improve the problem-solving ability using programming skills • Understand and develop well-structured programs using C language • To understand to basics of Procedure Oriented Programming • To acquire knowledge of file

				handling with c Programmin • To gain the Particulars of Programming to achieve job-oriented skills.
		CA-104	Database Management System	• To understand the file structure and its organization. • An introduction about Database management system • Helps student to learn different types of data models • Student gets knowledge about designing relational database • To enhance knowledge of SQL database • To develop the practical skills using database through PL/SQL
		CA-105	Statistics	• To understand the power of excel spreadsheet in computing summary statistics. • To develop the statistical skills • To enhance the skills regarding analytical skills using different statistical methods • To understand the concept of various measures of central tendency and variation and their importance in business. • To understand the concept and applications of probability, probability distributions in real life situations. • To understand simulations in business world and decision making.
		CA-106	Practical Based on 103 - 104	• To develop the skills to implement Programming through C and DBMS • To develop ability to use data and manage it through skills enhanced • To develop logical ability for programming outcomes • To develop the problem-solving ability • To enhance real world problems and solve them through acquired skills • To develop view to sort out logical problems through programming and store them using database knowledge.

		CA-107	\ Principles of Programming Algorithms	• Ability to analyze the performance of algorithms. • Ability to choose appropriate algorithm design techniques for solving problems. • Ability to choose appropriate algorithm design techniques for solving problems. • Ability to Create a program-based flowchart • Ability to Understand flowcharts symbols • Ability to Complete and correct flowchart algorithms
		CA- 201	Organizat ion Behavior & Human Resource Management	• Helps the students to understand the impact that individual, group & structures have on their behavior within the organizations. • Enhance and apply the knowledge they have received for the betterment of the organization. • Helps in understanding the basics related to individual behavior and its impact on their performance • To develop knowledge of organizational structures and theories of it • To understand the concepts through Human resource • To enforce the skills about human resource management as per organizational policies

	FYBB A (CA) SEM II	CA-202	Financial Accounting	• Helps students to acquire sound knowledge of basic concepts of accounting • To aware students with the financial accounting and related concepts • To develop basics of accounting and account keeping • To improve the skills about to manage account and maintain account of organization • To gain the knowledge of recent applications of accounting • Gains basic accounting knowledge Impart the knowledge about recording of transactions and preparation of final accounts. • Acquaint the students about accounting software packages (Tally)
		CA-203	Business Mathematics	• Students learned basics of fundamental math's • To solve mathematical problems and make solutions • Studied business problems and conversion into business math's • Learned the concept of LPP and transportation problem • Implement the problem-solving ability and through basics of business mathematics • To find out the solutions and implement all mathematical concepts to solve problems • Studied matrices and determinants and solve issues
		CA-204	Relational database	• Students get the knowledge of Relational Database concepts which is the basic requirements of every organization. • Student will get the knowledge to acquire job oriented capability • Students can go for certification too which helps to get good opportunities in them carrier. • Students will be able to write SQL queries for a given context in relational database • Students will be able to apply and relate the concept of transaction, concurrency control and recovery in database. • Students will be able to recognize and identify the use of

				normalization and functional dependency, indexing and hashing technique used in database design.
		CA-205	Web Technology HTML-JS-CSS	• Give students the basic understanding of how things work in the Web world from the technology point of view as well as to give the basic overview of the different technologies. • To achieve the knowledge about basic web technologies liker HTML, CSS, XML. • To utilize these technologies in Project work and to develop small websites • To gain detailed knowledge of these scripting and utilize as per industrial requirements. • To prepare students to gain the advanced wed technologies and utilize them • To fulfill the requirements of society of all online platform with the web development
		CA-206	Practical Based on 204-205	• Database Management Creating Views Creating Column Aliases Creating Database Users Using GRANT and REVOKE Cursors in Oracle PL / SQL Writing Oracle PL / SQL Stored Procedures, trigger, cursor, function. • Retrieving Data from a Database the SELECT statement Using the WHERE clause Using Logical Operators in the WHERE clause Using IN, BETWEEN, LIKE, ORDER BY, GROUP BY and HAVING Clause Using Aggregate Functions Combining Tables Using JOINS Sub queries • Creating Database Creating a Database Creating a Table Specifying Relational Data Types Specifying Constraints Creating Indexes • Design and develop any suitable web application using HTML, CSS and XML • Perform validation of all fields by using Java Script and J Query • Add all dynamic web application essence in Servlet, JSP, MYSQL, PHP, AJAX.
		CA-301	Digital Marketing	• Students will able to implement best practices for creating, measuring, and optimizing display ad campaigns. • Students will able to effectively build

				users lists, deliver e-mails & generate relevant clicks. • Understand mobile marketing measurement and analytics. • Make business decisions from the metrics available in Digital Media. • Students will able to analyses cross-cultural and ethical issues in globalized digital markets. • Students will able to Comprehend the importance of conversion and working with digital relationship marketing
	SYBBA (CA) Sem-III	CA-302	Data Structure	• Students get the knowledge of data structures using c programming • Students get brief knowledge of data structure Tree, Graph, Linked List, Array, Stack, Queue • Students will able to use the appropriate data structure in context of solution of given problem. • Students will able to learn the basic types for data structure, implementation and application. • Students will able to analyze algorithms and algorithm correctness. • Students will able to summarize searching and sorting techniques
		CA-303	Software Engineering	• Students are knowledgeable of the ethics, professionalism, and cultural diversity in the work environment. • Students can prepare and publish the necessary documents required throughout

				the project lifecycle. • Students can effectively contribute to project discussions, presentations, and reviews. • To enhance ability to develops Problem solving Skills • To develop things to act as good team member for software development • Students will able to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
		CA-304	Angular JS /PHP	• Give students the basic understanding of how things work in the Web world from the technology point of view as well as to give the basic overview of the different technologies. • Understand how to develop web-based applications. • To develop students for advanced web technologies to develop web applications and websites • Students get detailed knowledge about dynamic web sites and get implemented through project work. • To improve the skills of web development • Students are able to work in web-based environments
		CA-305	Block chain	• Blockchain technology landscape • Applications and implementation strategies • State-of-the-art, open research challenges, and future directions • Learn about Bitcoin, Cryptocurrency, Ethereum • Design, build, and deploy smart contracts and distributed applications • Integrate ideas from blockchain technology into their own projects.
		CA-306	Practical Based on 303, 304 and 305	• To solve issues using programming logics • To aware students to crypto currency and their logics • To enhance logical ability and to solve digital currency logical development • To gain logical gain of currency and its transfer and use of Ethereum • To implement advanced

				scripting technologies like angular JS to develop dynamic web pages • To use appropriate database with the use of blockchain and data structure like tree and graph.
		CA-307	Environmental Awareness	• To develop students, approach to save environment • To enhance ability to develop environmental awareness • To know about global warming and measures to avoid it • To know about various environmental things to protect it • Capture the knowledge and aware the peoples to protect the environment • To gains the facts and develop policies to protect enviroment
	SYBBA (CA) Sem-IV	CA-401	Networking	• Students can get job as a NetworkAdministrator in any organization. • Students will able to analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions. • Students will able to Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles • Students will able to understand the concepts of Data Communication. • Students will able to understand fundamental concepts in Routing, Addressing & working of Transport Protocols. • Students will able to understand Wireless LANs & Wireless Sensor Networks Operation.

		CA-402	Object Oriented Concepts Through CPP	• To learn basic object-oriented concept • To write C++ programs that use object-oriented concept such information hiding, constructors, destructors. • To know Inheritance, Polymorphism and its implementation in programming • Basic understanding of Template and Exception handling • To gain the basics of object-oriented programming and file handling so they can work with same environment • To develop the skills and utilize them with practical knowledge
		CA-403	Operating System	• To know system programming • Helps to understand services provided by operating system • To know Scheduling concept and scheduling algorithm

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