

Janseva Foundation Loni Budruks
Arts and Commerce College, Shendi
Dept. Of English
PO's And Co's

Program Specific Outcome of English	
PSO1	Reading
PSO2	Nation and Tradition
PSO3	Critical Insight in Literary Texts
PSO4	Issues and awareness of Sexuality and Gender: Arts
PSO5	Realizing Moral Values
PSO6	Writing skills.
PSO7	Learning Effective Communication
Objectives:	
PO1	To expose students to the best examples of prose and poetry in English so that they realize the beauty and communicative power of English
PO2	To instill human values and develop the character of students as responsible citizens of the world
PO3	To develop the ability to appreciate ideas and think critically
PO4	To enhance employability of the students by developing their linguistic competence and communicative skills
PSO5	To revise and reinforce structures already learnt in the previous stages of learning.
F. Y. B. A- English	
After studying this course student will be able to:	
CO1	To expose students to the basics of literature and language and develop an integrated view about language and literature in them
CO2	To acquaint them with minor forms of literature in English and help them to appreciate the creative use of language in literature
CO3	To introduce them to the basics of phonology of English so that they can pronounce better and speak English correctly.
CO4	To prepare students to go for detailed study and understanding of Literature and language
CO5	To enhance the job potential of students by improving their language skills
F. Y. B. Com Compulsory English	
After studying this course student will be able to:	
CO1	To offer relevant and practically helpful pieces of prose and poetry to students so that they not only get to know the beauty and communicative power of English but also its practical application
CO2	To expose students to a variety of topics that dominate the contemporary socioeconomic and cultural life
CO3	To develop oral and written communication skills of the students so that their employability

	enhances d) To develop overall linguistic competence and communicative skills of students.
S. Y. B. A English Compulsory English	
CO1	To familiarize students with some excellent pieces of drama and poetry in English so that they realize the beauty and communicative power of English.
CO2	To enable students to become competent and effective users of English in real life situations
CO3	To contribute to the overall personality development of the students
CO4	To instil humanitarian values and foster sympathetic attitude in the students
CO5	To acquaint the students with the verbal and nonverbal communication
CO6	To impart knowledge of some essential soft skills to enhance their employability
T. Y. B. A. Compulsory ENGLISH	
CO1	To familiarize students with some excellent pieces of prose and poetry in English so that they realize the beauty and communicative power of English.
CO2	To enable students to become competent and effective users of English in real life situations
CO3	To contribute to the overall personality development of the students.
CO4	To instill humanitarian values and foster sympathetic attitude in the students.
CO5	To train the students in practical writing skills required in work environment.
CO6	To impart knowledge of some essential soft skills to enhance their employability
T. Y. B. A. Compulsory ENGLISH	
CO1	To familiarize students with some excellent pieces of prose and poetry in English so that they realize the beauty and communicative power of English.
CO2	To enable students to become competent and effective users of English in real life situations
CO3	To contribute to the overall personality development of the students.
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Janseva Foundation Loni Budruks
Arts and Commerce College Shendi
Dept. Of Marathi
PO's And Co's

PROGRAMME OUTCOMES MARATHI DEPARTMENT	
B.A	
After successful completion of three year bachelor and two master degree program in Marathi a student should be able to	
PO1	विषयाचा अभ्यास करणाऱ्या विद्यार्थ्यांस स्थूलपणे मराठी साहित्य, मराठी भाषा आणि मराठी संस्कृती यांचा क्रमशः परिचय होतो.
PO2	साहित्यासंबंधी – विशेषतः मराठी साहित्यासंबंधी रुची निर्माण होते.
PO3	विद्यार्थ्यांच्या वाङ्.मयीन अभिरुचीचा विकास होतो.
PO4	आस्वाद घेण्याची डोळस क्षमता विकसित होते.
PO5	साहित्याभ्यासातून जीवन विषयक समज विकसित होते
PO6	मराठी साहित्याभ्यासातून जीवन विषयक समज विकसित होते.
PO7	जागतिकीकरणात विविध क्षेत्रांना सामोरे जाण्यासाठी भाषिक क्षमता विकसित होते.
PROGRAMME OUTCOMES	
F.Y.B.A Marathi	
मराठी साहित्य कथा आणि भाषिक कौशल्य विकास सत्र दुसरे मराठी साहित्य एकांकिका आणि भाषिक कौशल्य विकास	
CO1	साहित्य संबंधी रुची निर्माण होते.
CO2	मराठी भाषा व संस्कृती विषयी ज्ञान प्राप्त होते.
CO3	कथा व कविता या साहित्य प्रकारचा आस्वाद घेण्याची क्षमता निर्माण होते.
F.Y.B.Com Marathi	
भाषा साहित्य आणि कौशल्य विकास	
CO1	भाषा व्यवहारहाचे स्वरूप समजते.
CO2	कार्यालयीन मराठी भाषा वापरण्याचे तंत्र विकसित होते.
SYBA GEN	
भाषिक कौशल्यविकास व आधुनिक मराठी साहित्यप्रकार	
CO1	भाषिक कौशल्य विकसित होतात.
CO2	चरित्र व आत्मचरित्र या साहित्य प्रकारचे ज्ञान प्राप्त होते.
CO3	आस्वाद आणि मूल्यमापन करण्याची क्षमता वाढते.
SYBA S1	
आधुनिक मराठी साहित्य : प्रकाशवाटा	
CO1	वेगवेगळ्या कालखंडातील परंपरा व संस्काराचा परिचय होते.
CO2	नाटक व कादंबरी या साहित्य प्रकारचे आस्वाद व आकलन होण्याची क्षमता निर्माण होते.

SYBA S2	
साहित्यविचार	
CO1	विशिष्ट कालखंडातील साहित्याच्या प्रेरणा समजतात.
CO2	ऐतिहासिक परंपरांचे ज्ञान होते.
SYBSC	
मराठी साहित्य आणि उपयोजित मराठी	
CO1	विज्ञान साहित्य विषयी आवड निर्माण होते.
CO2	भाषिक कौशल्य विकसित होतात.
TYBA G3	
आधुनिक मराठी साहित्य आणि व्यावहारिक मराठी	
CO1	विविध साहित्य प्रकाराचा परिचय होतो.
CO2	ग्रंथ परिक्षणाची आवड निर्माण होते.
TYBA S3	
आधुनिक मराठी साहित्य आणि व्यवहारिक मराठी	
CO1	साहित्याचे विविध स्वरूप समजते.
CO2	साहित्याची वाङ्.मयीन मुल्ये समजतात.
TYBA S4	
वर्णनात्मक भाषाविज्ञान	
CO1	भाषाविषयी सखोल ज्ञान मिळते.
CO2	भाषेतील 'स्वनिम' संकल्पना समजते.

Janseva Foundation Loni Budruks
Arts and Commerce College Shendi
 Tal- Akole Dist- Ahmednagar
 Dept. of Geography

F.Y.B.A.	
Gg- 110 (A) PhysiCl Geography Semester I	
On completion of the course students will be able to	
CO1	To introduce the students to the basic concepts in Physical geography.
CO2	To introduce latest concept in Physical geography
CO3	To acquaint the students with the utility and application of Physical geography in different regions and environment.
CO4	To make the students aware about Earth system (Lithosphere, Atmosphere, Biosphere and Hydrosphere)
Gg- 110 (B) Human Geography Semester II	
On completion of the course students will be able to	
CO1	To introduce the students to the basic concepts in Human geography.
CO2	To introduce latest concept in Human geography
SYBA	
Environment Geography (SEM- III)	
CO1	To create the awareness about dynamic environment among the students
CO2	To acquaint students with fundamental concept of environment. Geography for development in different aria
CO3	To students should be able to integrate varies factors of environment dynamic accept environmental geography
CO4	To make aware the student about the problems of environment, their utilization and conservation in the view of sustainable development
SYBA	
Environment Geography (SEM- IV)	
CO1	To create the awareness about dynamic environment among the students
CO2	To acquaint students with fundamental concept of environment. Geography for development in different aria
CO3	To students should be able to integrate varies factors of environment dynamic accept environmental geography
TYBA SEM- V	
Geography of Tourism- I CC1E (G3)	
CO1	To understand the history of Tourism
CO2	To introduce the students to the basic concepts in Tourism Geography.
CO3	To understand the types of Tourism
CO4	To gain knowledge different aspects of Tourism Geography.

Geography of Tourism- II CC1F (G-3) (SEM – VI)	
CO1	To understand the history of Tourism
CO2	To introduce the students to the basic concepts in Tourism Geography.
CO3	To understand the types of Tourism
CO4	To gain knowledge different aspects of Tourism Geography.
Practical Geography- I (Techniques of Spatial Analysis) DSE- 2 C (S-4) (SEM-VI)	
CO1	To introduce the basic concepts and techniques of Geographical Analysis.
CO2	To introduce the students with SOI Top sheets and acquire the Knowledge of Top sheet interpretation
CO3	To introduce the students with Weather Maps and acquire the Knowledge of its interpretation
CO4	To introduce the students with Aerial Photographs and Satellite Images and acquire knowledge to interpret it
CO5	To acquaint students with the spatial and structural characteristics of Practical Geography.
Practical Geography- II (Techniques of Spatial Analysis, Surveying and Excursion /Village/ Project Report) DSE- 2 D (S-4) (SEM-VI)	
On completion of the course students will be able to	
CO1	To introduce the basic concepts and techniques of Geographical Analysis.
CO2	To introduce the students with SOI Top sheets and acquire the Knowledge of Top sheet interpretation.
CO3	To introduce the students with Weather Maps and acquire the Knowledge of its interpretation
CO4	To introduce the students with Aerial Photographs and Satellite Images and acquire knowledge to interpret it .
CO5	To acquaint students with the spatial and structural characteristics of Practical

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प्रथम वर्ष कला F.Y.B.A.हिन्दी	
सामान्य हिन्दी जी 1-	
PO1	छात्रों को साहित्य विधाओं से अवगतकरना
PO2	छात्रों को हिन्दी भाषा द्वारा संवाद कौशल में विकसित करना
PO3	छात्रों को मौलिक लेखन और विज्ञापन लेखन कौशल में विकसित करना
PO4	छात्रों को अनुवाद और हिन्दी कम्प्यूटर की जानकारी से अवगत करना
द्वितीय वर्ष कला S.Y.B.A.हिन्दी	
CC1-C)G हिन्दी व्यावहारिक तथा कहाणी काव्य आधुनिक 2-	
PO1	छात्रों को काव्य साहित्य से अवगतकरना
PO2	छात्रों को कहानी साहित्य से अवगतकरना
PO3	छात्रों को कारक साहित्य से अवगतकरना
PO4	छात्रों को शब्द युग्म का अर्थ समझकर वाक्य में प्रयोग से अवगतकरना
PO5	छात्रों को संक्षेपण लेखन का कार्य से अवगतकरना
PO6	छात्रों में सर्जनात्मकता का विकास करना
PO7	छात्रों को व्यंग पाठ से अवगतकरना
PO8	छात्रों को साक्षात्कार कला से परिचित हुए अवगतकरना साक्षात्कारसे और
PO9	छात्रों को भाषा का मोबाइल तंत्र से अवगतकरना
PO10	छात्रों को पल्लव कला से अवगतकरना
SEC-2A अनुवाद स्वरूप एवं व्यवहार	
PO1	छात्रों को अनुवाद कौशल से अवगतकरना
PO2	छात्रों को अनुवाद के स्वरूप से अवगतकरना
PO3	छात्रों को अनुवाद क्षेत्र से अवगतकरना

PO4	छात्रों को मराठी से हिन्दी में प्रत्यक्ष अनुवाद से अवगतकरना।
PO5	छात्रों को अंग्रेजी से हिन्दी में प्रत्यक्ष अनुवाद से अवगतकरना।
PO6	छात्रों को माध्यम लेखन से अवगतकरना।।
PO7	छात्रों में सृजनात्मक लेखन कौशल से अवगतकरना।
PO8	छात्रों को दृक से भाषा की माध्यमों श्राव्य-अवगतकरना।
DSE-(S-1)काव्यशास्त्र (सामान्य)	
PO1	छात्रों को भारतीय काव्यशास्त्र से अवगतकरना।
PO2	छात्रों को काव्य परिभाषा शब्दशक्ति अवगतकरना से तत्व ,
PO3	छात्रों को रस के स्वरूप से अवगतकरना।
PO4	छात्रों में भारतीय काव्यशास्त्र में रुचि निर्माण होकर आलोचनात्मक दृष्टि से अवगतकरना।
PO5	छात्रों में भारतीय काव्यशास्त्र में कारक साहित्य से अवगतकरना।
PO6	छात्रों को साहित्यिक भेद से अवगतकरना।
PO7	छात्रों को महाकाव्य खण्डकाव्यऔर मुक्तक काव्य परिचय करना।
PO8	छात्रों को पद्य भेद से अवगतकरना।
PO9	छात्रों को नाटक के भेद से अवगतकरना।
PO10	छात्रों को नाट्य अभिनय में रुचि विकसित करना।
DSE-2A मध्ययुगीन काव्य तथा उपन्यास S-2	
PO1	छात्रों को कबीर के साहित्य से से अवगतकरना।
PO2	छात्र मीराबाई के साहित्य से अवगतकरना।
PO3	छात्र भारतीय उपन्यास की अवधारणा से अवगतकरना।
PO4	छात्रों में उपन्यास की कृति के मूल्यांकन से अवगतकरना।
PO5	छात्रों में साहित्य कृतिओं आत्मविस्तृत को मूल्यों जीवन प्रस्तुत करने की क्षमता से अवगतकरना।
PO6	छात्र रहीम के साहित्य से अवगतकरना।
PO7	छात्र बिहारी के काव्य अभिव्यंजना से अवगतकरना।

PO8	छात्र में अभिनय गुण से अवगतकरना
PO9	छात्र हिंदी नाटक और रंगमंच से अवगतकरना
PO10	छात्र नाट्यालोचना से अवगतकरना
MIL-हिन्दी भाषा शिक्षण (हिन्दी)	
PO1	छात्रों में हिंदी भाषा श्रवण कौशल से अवगतकरना
PO2	छात्रों में हिंदी भाषा संवाद कौशल से अवगतकरना
PO3	छात्रों में हिंदी भाषा वाचन कौशल से अवगतकरना
PO4	छात्रों में हिंदी भाषा लेखन कौशल से अवगतकरना
PO5	छात्र हिंदी भाषा विधी तथा भाषा व्यवहार से अवगतकरना
PO6	छात्रों में हिंदी भाषा की लघुकथा कौशल से अवगतकरना
PO7	छात्रों में हिंदी भाषा वाक्य भेद से अवगतकरना
PO8	छात्रों में हिंदी काव्य सृजन गीत से अवगतकरना
तृतीय वर्ष कला TYB A	
G-3 कथेतर विधाएँ	
PO1	छात्रों को संस्मरण साहित्य से अवगतकरना
PO2	छात्रों को रेखाचित्र साहित्य से अवगतकरना
PO3	छात्रों को इतिवृत्त से साहित्य लेखन वार्ता ,अवगतकरना
PO4	छात्रों को गजल साहित्य से अवगतकरना
PO5	छात्रों को सरकारी पत्रलेखन का कार्य से अवगतकरना
विशेष हिंदी इतिहास का साहित्य हिंदी 3-	
PO1	छात्रों को हिंदी साहित्य के कालविभाजन और नामकरण का परिचय से अवगतकरना
PO2	छात्रों को आदिकाल का साहित्य ,कवि और काव्य प्रवृत्तियों का परिचय से अवगतकरना
PO3	छात्रों को भक्तिकाल की शाखा अवगतकरना से परिचय का प्रवृत्तियों काव्य और कवि ,साहित्य ,
PO4	छात्रों को रीतिकाल के साहित्य अवगतकरना से परिचय का प्रवृत्तियों काव्य और कवि ,

PO5	छात्रों को आधुनिक काल के गद्यस पद्य -ाहित्य अवगतकरना से प्रवृत्तियों काव्य और साहित्यकार ,
विशेष हिंदी 4-भाषाविज्ञान	
PO1	छात्रों को को साहित्य की परिभाषा अवगतकरना से ज्ञान का प्रयोजनों और ,हेतु ,स्वरूप ,
PO2	छात्रों को काव्य के तत्व अवगतकरना से ज्ञान का शब्दशक्ति और ,भेद ,
PO3	छात्रों को अलंकार और छंदों का परिचय से अवगतकरना
PO4	छात्रों को गद्य और पद्यों के भेद तथा तत्वों की जानकारी से अवगतकरना
PO5	छात्रों को आलोचना की जानकारी से अवगतकरना
Skill Enhancement Course -साहित्य और फिल्मांतरण	
PO1	छात्रों को स्क्रिप्ट लेखन से परिभाषा ,अर्थ ,अवगतकरना
PO2	छात्रों को कथा अवगतकरना से संवाद और पटकथा ,
PO3	छात्रों को ड्राफ्ट बनाने से अवगतकरना
PO4	छात्रों को सिनेमा के स्वरूप से अवगतकरना
PO5	छात्रों को हिंदी साहित्य और सिनेमा के अन्त संबंध से अवगतकरना
PO6	छात्रों को हिंदी उपन्यासों पर आधारित फिल्मों से अवगतकरना

Janseva Foundation Loni Budruks
Arts and Commerce College Shendi
Dept. Of History
PO's And Co's

Programme Specific Outcomes, Department History	
PSO1	After completion of this course they gather knowledge about the socio-cultural heritage of India and world as well.
PSO2	Help to grow national and international understanding among history students.
PSO3	Careers options for students to engage as MPSC ,UPSC and other Competitive exam. educators, archivists, producers of multimedia material and even as a researcher in historic Sites and Museums, Historical Organizations, Cultural Resources Management and Historic Preservationist.
PSO4	History helps them in knowing the past people, their culture, their religions, and their social systems, and transforms them into responsible citizens to make a better future.
PSO1	After completion of this course they gather knowledge about the socio-cultural heritage of India and world as well.
PSO2	Help to grow national and international understanding among history students.
F.Y BA Semester –I	
Early India: From Prehistory to the Age of the Mauryas	
On completion of the course students will be able to	
CO1	The history of Early India is a crucial part of Indian history. It is a base for understanding the entire Indian history. The course is aimed at helping the student to understand the history of early India from the prehistoric times to the age of the Maury's.
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. It also attempts to help the students to understand the contribution of Early Indians to polity, art, literature, philosophy, religion and science and technology.
CO3	It also aims to foster the spirit of enquiry among the students by studying the major developments in early Indian history.
F.Y BASemester-II	
Early India: Post Mauryan Age to the Rashtrakutas	
On completion of the course students will be able to	
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. It attempts to highlight the consequences of the foreign invasions, particularly on the polity, economy, society and art and architecture. The attempt is also to instill the spirit of enquiry among the students.
S.Y BA-III	
G-II Modern India (1857-1950)	
On completion of the course students will be able to	
CO1	The course is designed to help the student to know- History of freedom movement of India, aims, objectives problems and progress of Independent India. It aims at enabling the student to understand the processes of rise of modern India.
CO2	The Course attempts to acquaint student with fundamental aspects of Modern Indian History.
CO3	To explain the basic concepts/ concerns/ frame work of Indian History.
CO4	Appreciate the skills of leadership and the administrative system of the Marathas
CC-2(3)History of the Marathas: (1707-1818)	
On completion of the course students will be able to	
CO1	Students will be able to analyze the Marathas policy of expansionism and its consequences
CO2	They will understand the role played by the Marathas in the 18th century India..
CO3	They will be acquainted with the art of diplomacy in the Deccan region.
CO4	It will help to enrich the knowledge of the administrative skills and profundity of diplomacy
S.Y BA-III	
S-I DSE-1A (3)1.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
S.Y BA Sem-IV	
S-I DSE-1B (3)4.Medieval India: Mughal Period	
CO1	Draws comparisons between policies of different rulers.
CO2	Understanding Role of Akbar in the consolidation of Mughal rule in India.
CO3	Understand Aurangzeb's conflict with Rajputas, Maratha and weakening Mughals age.
CO4	Analyses factors which led to the emergence of new religious ideas and movements (bhakti and Sufi)
S.Y BA-III	
S- IIDSE-2A (3)2.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.
S.Y BA Sem-IV	
S- II DSE-2B (3)5. Glimpses of the Modern World - Part II	
CO1	It will enable students to develop the overall understanding of the Modern World.
CO2	The students will get acquainted with the major nationalist movements, the World War II and its consequences, the Cold War and its Consequences.
CO3	It will enhance their overall perception of the history of the Modern World.
CO4	It will enable students to understand the significance of the strategic political developments in the Modern World.
S.Y BA-III	
Art & Architecture in Early India	
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
S.Y BA-III	
6. Medieval Indian, Art & Architecture	
CO1	Students will get an overall understanding of the development of the Medieval Art and Architecture.
CO2	They will understand the changing patterns of the Art and Architecture during the Medieval India.
CO3	They will have an understanding of the impact of Persian Art on Islamic Art and Architecture in Medieval India.
T.Y BA Sem-V	
G-III CC- 3(3) Indian National Movement (1885-1947)	
On completion of the course students will be able to	
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
CO4	Movement and the creation of Modern India.
T.Y BA Sem-VI	

G-III CC- 4(3)India After Independence- (1947-1991)	
CO1	It will enable students to develop an overall understanding of the Contemporary India.
CO2	To increase the spirit of healthy Nationalism, Democratic Values and Secularism among the students.
CO3	Students will understand various aspects of India's domestic and foreign policies that shaped Post-Independence India.
T.Y BA Sem-V	
S-III DSE-3 C (3).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 acompetitive World.
T.Y BA Sem-VI	
S-III DSE-3 C (3)10 Applied History	
CO1	Students will be introduced to the information and importance of applied history
CO2	Student will learn about the Historical significance of Archaeology and Archives andopportunities in the field of Archaeology and Archives.
CO3	Through this course, students will be informed about the opportunities in the field of Media,Museums
CO4	the about learn will Students usefulness of history in the 21st Century, its changing Perspectives, the new ideas that have been invented, and the importance of History in aCompetitive World.
T.Y BA Sem-V	
S-IV DSE-4 D (3)8.Maharashtra in the 19th Century	
CO1	Student will develop the ability to analyze sources for 19th century Maharashtra History.
CO2	Student will learn significance of Regional History and Socio- religious reformism foundationof 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
T.Y BA Sem-V	
Skill Enhancement Course (SEC)-10.Research Paper Writing	
CO1	Students will be introduced to the information and importance of Historiography.
CO2	Students can study the interdisciplinary approach History
CO3	This curriculum Will help to develop Research ability and process of research

	paper Writing
T.Y BA Sem-VI	
Skill Enhancement Course (SEC)-13.Archaeology	
CO1	Students will learn to understand the definition, aims and scope of Archaeology so as to understand its applications in interpreting the human past.
CO2	They will be able to understand the nature of the archaeological record and the unique role of science in archaeology
CO3	They will have an overall understanding of the Archaeology

**Janseva Foundation Loni Budruks
Arts and Commerce College Shendi
Department of Economics
PO's And Co's**

Programme Outcomes	
PO1.	To provide in depth knowledge of socio-economic aspects.
PO2.	To familiarize with current and recent developments in Economics
PO3.	To enrich knowledge through problem solving, hands-on activities projects.
PO4.	To provide a broad and comprehensive knowledge in micro and macro Economics, Public Economics, Indian Economy and Agricultural Economics
PO5.	To develop analytical abilities towards real world problems
Programme Specific Outcome	
PSO1	After completion of program, students will be able to have in-depth knowledge of basic concepts in Economics.
PSO2	A good academic background to be able to seek admission for master's degree in Economics
PSO3	An academic background to be able to crack the banking and administrative examinations
F.Y.B.A Economic	
INDIAN ECONOMIC ENVIRONMENT)	
CO1	Develop ideas of the basic characteristics of Indian economy; its potential on natural resources.
CO2	Understand the importance, causes and impact of population of growth and its distribution, translate and related them with economic development.
CO3	Grasp the importance, of planning undertaken by the government of India, have knowledge on the various objectives, failures and achievements as the foundation of the ongoing planning and economic reforms taken by the government
CO4	Understand agriculture as the foundation of economic growth and development, analyses the progress and changing nature of agricultural sector and its contribution to the economy as a whole.
CO5	not only be aware of the economy as a whole, they would understand the basic features of mizoram's economy, sources of revenue, and how the state government finance its programmes and projects.
S.Y.B.A. [G2] SEMIII/SEM-IV (CBCS2019)	
Financial System-I/II	
CO1	To understand fundamentals of modern financial system.
CO2	To understand the recent trends and developments in banking system.
CO3	To understand the role of the Reserve Bank of India in Indian financial system.
CO4	To provide the knowledge of various financial and nonfinancial institutions.
CO5	To provide the students the intricacies of Indian financial system for better financial decision making.
T.Y.B.A. (CBCS-2019) Semester- V	
Indian Economic Development -I	

CO1	The course will be useful for learners aiming towards careers in the government sector, policy analysis and the social sector.
CO2	This course would take an overview of aspects of economic development with special reference to India.
CO3	The course aims to introduce the learner to the main concepts in economic and human development, equip them compare and contrast different economies: recognize various indicators of economic and human development.
CO4	The course will also provide a broad outline of the Sustainable Development Goals
T.Y.B.A. (CBCS-2019) Semester- VI	
Indian Economic Development -II	
CO1	This course would take an overview of the process of Economic Planning and the Development Goals.
CO2	The course aims to introduce the learner to the main concepts in Economic Planning, equip them with understanding of the planning process in India and changing in recent times and familiarize them to the Sustainable Development Goals.
CO3	The Course also reviews the relation between Economic Development and Environment.
F.Y.B.COM	
BUSINESS ECONOMICS) (MICRO)	
On completion of the course students will be able to	
CO1	To familiarize the students with the basic concept of micro economics.
CO2	To make student understand the demand and supply analysis in business applications.
CO3	To familiarize student with the production and cost structure under different stages of production.
CO4	Develop ideas of the basic characteristics of Indian Economy, its potential on natural resources.
CO5	Understand the importance, causes and impact of population growth and its distribution, translate and relate them with economic development.
CO6	Demonstrate marginal productivity theory of distribution, theory of wages, identify different types of rent, and illustrate different theories of interest and profits.
CO7	Understand how factor market works, illustrate basic tool in welfare economics and illustrate the concept of social welfare functions and compensation principles.
CO8	Identify the various types of investment function analysis and understand the elements of social cost benefit analysis
S.Y.B.Com. SEMIII/SEM-IV (CBCS2019)	
Business Economics (Macro)	
CO1	Understand the basic concepts of Macro Economics and Its application.
CO2	Analyze the various concepts of Macro Economic Variables
CO3	Identify various difficulties in National Income Accounting

CO4	Explain the Theories of Output & Employment
CO5	Discuss the Concepts of Consumption, Saving & Investment
T.Y.B.Com. (CBCS-2019) Semester- V	
Indian & Global Economic Development-I	
CO1	To develop ability to analyze economic development process of India.
CO2	To impart knowledge about the relevance of economic practices in modern competitive world
CO3	To help the students develop a sound theoretical foundation for their future academic ventures.
T.Y.B.Com. (CBCS-2019) Semester- VI	
Indian & Global Economic Development-II	
CO1	To develop ability of students to analyze economic development process of India.
CO2	To acquaint the students with the knowledge of recent trends in Human Development Index.
CO3	To acquaint students with the emerging issues in policies of India's foreign trade.
CO4	To update the students about international institutions and organizations

**Janseva Foundation Loni Budruks
Arts and Commerce College Shendi
Department of Political Science
PO's And Co's**

Programmed Specific Outcome	
PSO 1	Understanding the nature and developments in national and international politics
PSO 2	Analyzing the Indian constitutional provisions, major legislations and reforms
PSO 3	Critical evaluation of social, economic and political variables for a proper understanding of the Plurality of Indian society
PSO4	Building overall consciousness regarding national political history, international relations and Present Indian and Western political thinkers.
PSO5	Developing knowledge of administrative studies with special reference to Indian administrative structures and practices.
F. Y. B. A. (G-1)	
Semester-I - INTRODUCTION TO INDIAN CONSTITUTION (Total Credits: 03)	
CO1.	To acquaint students with the important features of the Constitution of India and with The basic framework of Indian government
CO2.	To familiarize students with the working of the Constitution of India.
F. Y. B. A. (G 1)	
Semester II - INTRODUCTION TO INDIAN CONSTITUTION	
CO1	To acquaint students with the important features of the Constitution of India and with the basic Framework of Indian government
CO2	To familiarize students with the working of the Constitution of India.
FYBA (2 Extra Credit)	
Democracy Election and Governance	
CO1	To introduce the student meaning of democracy and the role of the governance.
CO2	to help them understand the various approaches to the study of democracy and governance
S. Y. B. A. (G-2)	
SEMESTER- III PERIOD CC-I C (3)	
INTRODUCTION TO POLITICAL IDEOLOGIES	
This course is designed to acquaint students with the	
CO1	Role of different political ideologies and their impact in politics
CO2	Close link between an idea and its actual realization in public policy
CO3	Legacy of all the major ideologies
S. Y. B. A. (G-2)	
SEMESTER IV CC-1 D (3)	
INTRODUCTION TO POLITICAL IDEOLOGIES	
This course is designed to acquaint students with the –	

CO1	Role of different political ideologies and their impact in politics
CO2	Close link between an idea and its actual realization in public policy
CO3	Legacy of all the major ideologies
T. Y. B. A. V -CC-2 E (3) (G-3)	
CO1	The methods of development in Local self –government bodies in Maharashtra were told. The Students understood it.
CO2	Students understood that 73 rd amendment is for rural areas and 74 th amendment is for urban development.
CO3	Students got knowledge about various components of Local Self
T. Y. B. A.VI- CC-2 E(3) (G-3)	
CO1	To introduce the students the structure of Local Self Government
CO2	To make Students aware about composition, power and functions of Local bodies
CO3	To introduce the evolution of Local Self Government in Maharashtra

**Janseva Foundation Loni Budruks
Arts and Commerce College Shendi
Department of Commerce
PO's And Co's**

Bachelor of Commerce B.Com	
After successfully Completing B.Com programme, students will able to	
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.
PSO1	Students will be able to apply basic skills learnt in commerce necessary for analysis ofvarious problems in accounting, marketing, business economics, management and finance.
PSO2	Students will demonstrate progressive affective domain development of values, the role of accounting in society and business.
PSO3	Students will able to demonstrate quantitative and qualitative knowledge in key areas of organization behavior.
PSO4	: Students will able to evaluate national and international issue and discussion on economic, commercial and business related topics
Bachelor of Commerce B.Com	
After successfully Completing B.Com programme, students will able to	
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
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PO11	Critically evaluate new research findings, ideas, methodologies and theoretical frame work in specialized study.
PO12	Work collaboratively and productively in groups.
PSO1	Students will be able to apply basic skills learnt in commerce necessary for analysis of various problems in accounting, marketing, business economics, management and finance.
PSO2	Students will demonstrate progressive affective domain development of values, the role of accounting in society and business.
PSO3	Students will able to demonstrate quantitative and qualitative knowledge in key areas of organization behavior.
PSO4	: Students will able to evaluate national and international issue and discussion on economic, commercial and business related topics
S.Y.B.COM	
Course 2113: Business Communication- outcomes	
After successfully completing this course, student will be able to -	
CO1	Discuss the Meaning, Definition, Features, Principles, Importance, Process of Communication, Barriers to Communication & its Remedies.
CO2	Identify the different methods and channels of communication
CO3	Classify the various soft-skills and its elements such as Grooming Manners and Etiquettes, Effective Speaking, Interview Skills, Listening, Group Discussion and Oral Presentation
CO4	Describe the concept of business letter, its Meaning, Importance, Qualities or Essentials, Physical Appearance, and Layout of Business Letter.
CO5	Develop the writing skill of business letters on various situations in business like Enquiry letter, order letter, sales letter etc.
CO6	Discuss the Types & Drafting of Job Application Letters
CO7	Study the internal office correspondence like OfficeMemo, Office Orders, Office Circulars, and Press Releases.
CO8	Explain the application of new technology in business communication like WhatsApp, Twitter, Facebook, LinkedIn, YouTube, Cellular Phone and Video Conferencing.

Course 2143: Business Management**After successfully completing this course, student will be able to –**

CO1	Discuss the Meaning, Definition, Features, Principles, Importance, challenges before management and Brief Review of Management Thoughts of FW Taylor & Henry Fayola.
CO2	Discuss Meaning, Definition, Nature, Importance, Forms, Types, Steps, and limitations of Planning and Decision Making.
CO3	Describe Meaning, Process & Principles, Departmentalization of Organization and Organization Structure, Staffing and Recruitment
CO4	Discuss Meaning, Elements, Principles, Techniques & importance of Direction and communication and Process & Barriers of Communication
CO5	Explain the different theories of motivation such as Maslow's Need Hierarchy Theory, Herzberg's Two Factors Theory, Douglas Mc Gregor's Theory.
CO6	Study the leadership style for effective management and political leadership such as Mahatma Gandhi, Dr. Babasaheb Ambedkar & Pandit Jawaharlal Nehru.
CO7	Discuss the concept Need, Techniques, difficulties, steps and techniques of coordination and control
CO8	Apply the recent trends in business management like Business Ethics, Corporate Social Responsibility, Corporate Governance, Disaster Management, Management of Change.

Marketing Management – I**After successfully completing this course, student will be able to –**

CO1	To orient the students recent trends in marketing management
CO2	To create awareness about marketing of eco friendly products in the society through students
CO3	To inculcate knowledge of various aspects of marketing management through practical approach
CO4	To acquaint the students with the use of E-Commerce in competitive environment
CO5	To help the students understand the influences of marketing management on consumer behavior

Banking & Finance –I**After successfully completing this course, student will be able to –**

CO1	To create the awareness among the students of Indian banking system.
CO2	To enables students to understand the reforms and other developments in the Indian Banking

CO3	To provide students insight into the functions and role of Reserve Bank of India
Elements of Company Law.	
After successfully completing this course, student will be able to –	
CO1	To impart students with the knowledge of fundamentals of Company Law.
CO2	To update the knowledge of provisions of the Companies Act of 2013.
CO3	To apprise the students of new concepts involving in company law regime
CO4	To acquaint the students with the duties and responsibilities of Key Managerial Personnel
CO5	To impart students the provisions and procedures under company law.
Corporate Accounting	
To enable the students to develop awareness about Corporate Accounting in conformity with the provisions of Companies Act and Accounting as per Indian Accounting Standards	
CO1	To make aware the students about the conceptual aspect of corporate accounting
CO2	To enable the students to develop skills for Computerized Accounting
CO3	To enable the students to develop skills about accounting standards
T.Y.B.Com.	
Course Business Regulatory Framework (Mercantile Law) 351	
CO1	Acquaint knowledge and maturity to understand Contract Law.
CO2	To Acquaint knowledge and application of Partnership Deed.
CO3	To get training to face emerging issues relating Sale of Goods Act.
CO4	To give Comprehensive insight about the emerging trend of Arbitration and conciliation and its regulatory mechanism
Course Advanced Accounting 352	
CO1	Developing understanding on applicability of various Accounting Standards
CO2	Knowledge about of the Accounting for Capital Restructuring
CO3	Conceptual Clarity and Practical understanding of preparation of final accounts of banking compass
CO4	Developing knowledge about Investment Accounting
Auditing 354	

CO1	Acquaint with knowledge and maturity to understand concept of Auditing, types of Audit and Audit Process
CO2	Conceptual Clarity and Practical understanding of Vouching Verification and valuation and Types of Audit Report.
CO3	Practical knowledge about appointment, reappointment and other related provision. Practical knowledge about Tax Audit as per I.T. Act 1961 (Form 3CA, 3CB & 3CD)
CO4	Understanding new concepts under Audit of Computerized Systems & Forensic Audit
Marketing Management-II – 355 (h)	
CO1	The objective of this course is to facilitate understanding of the conceptual framework of marketing and its applications in decision making under various environmental constraints.
CO2	The course will make learners understand how to make effective marketing decisions, including assessing marketing opportunities and developing marketing strategies and implementation plans
Marketing Management- III 356(H)	
CO1	Student will understand the concept of advertising and advertising media
CO2	To enable them to analyze and interpret
CO3	To enable the students to study the Appeals and Approaches in Advertisement
CO4	It will help the students to apply the various Economic and social aspects of advertising
CO5	It will help them to implement this knowledge in practical situations by enhancing their skills in the field of Marketing
CO1	Student will understand the concept of advertising and advertising media

**Janseva Foundation Loni Budruks
Arts and Commerce College Shendi
Department of Chemistry
PO's And Co's**

Programme : B.Sc. (Bachelor of Science)	
Knowledge outcome	
PO1	Transfer and apply the acquired fundamental knowledge of chemistry, including basic concepts and principles of 1) Physical, Analytical Chemistry, organic chemistry, Inorganic chemistry and biochemistry (2) analytic techniques and experimental methods for chemistry to study different branches of chemistry
PO2	Demonstrate the ability to explain the importance of the Periodic Table of the Elements and represent key aspects of it and its role in organizing chemical information.
Skills Outcomes	
PO1	Apply and demonstrate knowledge of essential facts, concepts, laws, principles and theories related to chemistry.
PO2	Demonstrate the learned laboratory skills, enabling them to perform qualitative and quantitative analysis of given samples and able to make conclusions on it.
PO3	Set procedure and synthesize simple compounds like soap of commercial importance.
PO4	Engage in oral and written scientific communication, and will prove that they can think and work independently.
PO5	Respond effectively to unfamiliar problems in scientific contexts
PO6	Plan, execute of design experiment, make documentation of it, interpret data at entry- level of chemical industry and report the results.
After successfully completing B.Sc. Chemistry Programme students will be able to:	
Programme : B.Sc. (Bachelor of Science)	
PSO1	Understand the nature and basic concepts of Physical, Organic and Inorganic chemistry
PSO2	Analyze Organic and inorganic compounds qualitatively and quantitatively;
PSO3	Understand the applications of physical, organic, inorganic and analytical chemistry in pharmaceutical, agriculture and chemical industries.
PSO4	Able to perform experimental procedures as per laboratory manual in the area of physical, Inorganic and organic chemistry;
PSO5	Interpretation and synthesis of chemical information and data obtained from chemical and instrumental analysis
CH- 101: Physical Chemistry	
The student who successfully completes this course students will be able to:	

CO1	Students will be able to apply thermodynamic principles to physical and chemical process.
CO2	Calculations of enthalpy, Bond energy, Bond dissociation energy, resonance energy
CO3	Maintain records of quantitative and qualitative analysis.
CO4	Variation of enthalpy with temperature –Kirchhoff's equation
CO5	Third law of thermodynamic and its applications, Knowledge of Chemical equilibrium will make students to understand
CO6	Relation between Free energy and equilibrium and factors affecting on equilibrium constant.
F. Y. B.Sc. Chemistry	
CH- 102: Organic Chemistry	
The student who successfully completes this course students will be able to:	
CO1	The students are expected to understand the fundamentals, principles, and recent Developments in the subject area.
CO2	It is expected to inspire and boost interest of the students towards chemistry as The main subject
CO3	To create foundation for research and development in Chemistry
F. Y. B.Sc. Chemistry	
CH- 103: Chemistry Practical Course	
The student who successfully completes this course students will be able to:	
CO1	Importance of chemical safety and Lab safety while performing experiments in laboratory
CO2	Determination of thermo chemical parameters and related concepts
CO3	Elemental analysis of organic compounds (non-instrumental)
CO4	Techniques of pH measurements
CO5	Chromatographic Techniques for separation of constituents of mixture
F. Y. B. Sc. Chemistry	
CH-201: Inorganic Chemistry	
The student who successfully completes this course students will be able to:	
CO1	Various theories and principles applied to reveal atomic structure.
CO2	Origin of quantum mechanics and its need to understand structure of hydrogen

	Atom.
CO3	Schrodinger equation for hydrogen atom
CO4	Shapes of orbital's identification
CO5	Explain rules for filling electrons in various orbital's- Aufbau's principle, Pauli exclusion principle, Hund's rule of maximum multiplicity
CO6	Discuss electronic configuration of an atom and anomalous electronic configurations.
CO7	Describe stability of half-filled and completely filled orbital's
CO8	Discuss concept of exchange energy and relative energies of atomic
CO9	Design Skeleton of long form of periodic table.
CO10	Describe Block, group, modern periodic law and periodicity
CO11	Classification of elements as main group, transition and inner transition elements
CO12	Explain characteristics of ionic bond, types of ions, energy consideration in ionic bonding, lattice and hydration energy and their importance in the context of stability and solubility of ionic compounds
CO13	Explain characteristics of ionic bond, types of ions, energy consideration in ionic bonding, lattice and hydration energy and their importance in the context of stability and solubility of ionic compounds.
CO14	Define Fajan's rule, bond moment, and dipole moment and percent ionic character.
F. Y. B.Sc. Chemistry	
CH- 202: Analytical Chemistry	
The student who successfully completes this course students will be able to:	
CO1	Calculations of mole, molar concentrations and various units of concentrations which will be helpful for preparation of solution.
CO2	Relation between molecular formula and empirical formula
CO3	Stoichiometry calculation and explanation
CO4	Define term mole, millimole, molar concentration, molar equilibrium concentration and Percent Concentration.
CO5	SI units, distinction between mass and weight
CO6	Basics of type determination, characteristic tests and classifications, reactions of different functional groups.
CO7	Elemental analysis Lassaigne's test

S.Y.B.Sc. Chemistry	
CH- 301: Physical Chemistry	
The student who successfully completes this course students will be able to:	
CO1	Define / Explain concept of kinetics, terms used, rate laws, molecularity, order.
CO2	Explain factors affecting rate of reaction. Explain / discuss / derive integrated rate laws, characteristics, expression for half-life and examples of zero order, first order, and second order reactions
CO3	Determination of order of reaction by integrated rate equation method, graphical method, half-life method and differential method.
CO4	Explain / discuss the term energy of activation with the help of energy diagram.
CO5	Explanation for temperature coefficient and effect of temperature on rate constant k.
CO6	Derivation of Arrhenius equation and evaluation of energy of activation graphically.
CO7	Derivations of collision theory and transition state theory of bimolecular reaction and comparison.
CO8	Solve / discuss the problem based applying theory and equations.
CO9	Define / explain adsorption, classification of given processes into physical and chemical adsorption.
CO10	Discuss factors influencing adsorption, its characteristics, differentiates types as Physisorption and Chemisorptions
CO11	Classification of Adsorption Isotherms, to derive isotherms.
CO12	Explanation of adsorption results in the light of Langmuir adsorption isotherm, Freundlich's adsorption Isotherm and BET theory.
CO13	Apply adsorption process to real life problem.
CO14	Solve / discuss problems using theory.
S. Y. B.Sc. Chemistry	
CH- 301: Analytical Chemistry	
The student who successfully completes this course students will be able to:	
CO1	Define, explain and compare meaning of accuracy and precision.
CO2	Apply the methods of expressing the errors in analysis from results.
CO3	Explain / discuss different terms related to errors in quantitative analysis.
CO4	Apply statistical methods to express his / her analytical results in laboratory.

	Solve problems applying equations
CO5	Explain / define different terms in volumetric analysis such as units of concentration, indicator, equivalence point, end point, standard solutions, primary and secondary standards, completing agent, precipitating agent, oxidizing agent, reducing agent, redox indicators, acidbase indicators, metallochrome indicators, etc.
CO6	Perform calculations involved in volumetric analysis.
	Explain why indicator show color change and pH range of color change.
CO7	To prepare standard solution and b. perform standardization of solutions.
CO8	To construct acid – base titration curves and performs choice of indicator for particular titration.
CO9	Explain / discuss acid-base titrations, complex metric titration / precipitation titration / redox titration. Apply volumetric methods of analysis to real problem in analytical chemistry / industry
S. Y. B.Sc. Chemistry	
CH- 302: Inorganic Chemistry	
The student who successfully completes this course students will be able to:	
CO1	Define terms related to molecular orbital theory (AO, MO, sigma bond, pi bond, bond order, magnetic property of molecules, etc.).
CO2	Explain and apply LCAO principle for the formation of MO's from AO's.
CO3	Explain formation of different types of MO's from AO's.
CO4	Distinguish between atomic and molecular orbital's, bonding, anti-bonding and nonbonding molecular orbital's.
CO5	Draw and explain MO energy level diagrams for homo and hetero diatomic molecules
CO6	Define different terms related to the coordination chemistry (double salt, coordination compounds, coordinate bond, ligand, central metal ion, complex ion, coordination number, magnetic moment, crystal field stabilization energy, types of legend, chelate effect, etc.)
CO7	Explain Werner's theory of coordination compounds. Differentiate between primary and secondary Valiancy. Correlate coordination number and structure of complex ion.
CO8	Apply IUPAC nomenclature to coordination compound.
S.Y.B.Sc. Chemistry	
CH- 302: Organic Chemistry	
The student who successfully completes this course students will be able to:	
CO1	Identify and draw the structures aromatic hydrocarbons from their names or from structure name can be assigned.

CO2	Explain / discuss synthesis of aromatic hydrocarbons.
CO3	Give the mechanism of reactions involved.
CO4	Explain /Discuss important reactions of aromatic hydrocarbon.
CO5	To correlate reagent and reactions.
CO6	Write / discuss the mechanism of Nucleophilic Substitution (SN1 , SN2 and SNi) reactions.
CO7	Explain /Discuss important reactions of alkyl / aryl halides.
CO8	To correlate reagent and reactions.
CO9	Give synthesis of expected alkyl / aryl halides.
CO10	Identify and draw the structures alcohols / phenols from their names or from structure name can be assigned.
CO11	Able to differentiate between alcohols and phenols
CO12	Explain / discuss synthesis of alcohols / phenols.
CO13	Write / discuss the mechanism of various reactions involved.
CO14	Explain /Discuss important reactions of alcohols / phenols.
CO15	To correlate reagent and reactions of alcohols / phenols
CO16	Give synthesis of expected alcohols / phenols.
CO17	Write / discuss the mechanism of Nucleophilic Substitution (SN1 , SN2 and SNi) reactions.
CO18	Explain /Discuss important reactions of alkyl / aryl halides.
CO19	To correlate reagent and reactions.
CO20	Give synthesis of expected alkyl / aryl halides.
S.Y.B.Sc. Chemistry	
CH- 303: Chemistry Practical – III	
The student who successfully completes this course students will be able to:	
CO1	Verify theoretical principles experimentally.
CO2	Interpret the experimental data on the basis of theoretical principles.
CO3	Correlate theory to experiments. Understand/verify theoretical principles by experiment observations; explain practical output / data with the help of theory.
CO4	Understand systematic methods of identification of substance by chemical methods.

CO5	Write balanced equation for the chemical reactions performed in the laboratory.
CO6	Perform organic and inorganic synthesis and is able to follow the progress of the chemical reaction by suitable method (color change, ppt. formation, TLC).
CO7	Set up the apparatus / prepare the solutions - properly for the designed experiments.
CO8	Perform the quantitative chemical analysis of substances explain principles behind it.
CO9	Systematic working skill in laboratory will be imparted in student.
CO10	Verify theoretical principles experimentally.
CO11	Interpret the experimental data on the basis of theoretical principles.
CO12	Correlate theory to experiments. Understand/verify theoretical principles by experiment
S. Y. B. Sc. Chemistry (Semester :IV)	
CH- 403:Physical Chemistry	
The student who successfully completes this course students will be able to:	
CO1	Define the terms in phase equilibrium such as- system, phase in system, components in system, degree of freedom, one / two component system, phase rule, etc.
CO2	Explain meaning and Types of equilibrium such as true or static, met stable and unstable equilibrium
CO3	Discuss meaning of phase, component and degree of freedom.
CO4	Derive of phase rule.
CO5	Explain of one component system with respect to: Description of the curve, Phase rule relationship and typical features for i) Water system ii) Carbon dioxide system iii) Sulphur system
CO6	Define the terms in phase equilibrium such as- system, phase in system, components in system, degree of freedom, one / two component system, phase rule, etc.
CO7	Explain meaning and Types of equilibrium such as true or static, met stable and unstable equilibrium
CO8	Discuss meaning of phase, component and degree of freedom.
CO9	Derive of phase rule.
CO10	Explain of one component system with respect to: Description of the curve, Phase rule relationship and typical features for i) Water system ii) Carbon dioxide system iii) Sulphur system
CO11	Define the terms in phase equilibria such as- system, phase in system, components in system, degree of freedom, one / two component system, phase rule, etc.

CO12	Explain meaning and Types of equilibrium such as true or static, met stable and unstable equilibrium
CO13	Discuss meaning of phase, component and degree of freedom.
CO14	Define various terms, laws, differentiate ideal and no-ideal solutions.
CO15	Discuss / explain thermodynamic aspects of Ideal solutions-Gibbs free energy change, Volume change, Enthalpy change and entropy change of mixing of Ideal solution.
CO16	Differentiate between ideal and non-ideal solutions and can apply Raoult's law.
CO17	Interpretation of i) vapors pressure–composition diagram ii) temperature- composition diagram.
CO18	Explain distillation of liquid solutions from temperature – composition diagram.
CO19	Explain / discuss zoetrope's, Lever rule, Henrys law and its application.
CO20	Discuss / explain solubility of partially miscible liquids- systems with upper critical. Solution temperature, lower critical solution temperature and having both UCST and LCST.
CO21	Explain / discuss concept of distribution of solute amongst pair of immiscible solvents.
CO22	Derive distribution law and its thermodynamic proof.
CO23	Apply solvent extraction to separate the components of from mixture interest.
CO24	Solve problem by applying theory.

S. Y. B.Sc. Chemistry (Semester :IV)

CH- 403:Analytical Chemistry

The student who successfully completes this course students will be able to:

CO1	Conductance, Ohm's law, cell constant, specific and equivalent conductance, molar conductance, Kohlrausch's law, etc. □ Discuss / explain Kohlrausch's law and its Applications, Conductivity Cell, Conductivity Meter, Whetstone Bridge.
CO2	Explain / discuss Conduct metric titrations.
CO3	Apply Conduct metric methods of analysis to real problem in analytical laboratory.
CO4	Solve problems based on theory / equations.
CO5	Correlate different terms with each other and derive equations for their correlations
CO6	absorbance, molar, Lamberts Law, Beer's Law, molar absorptive
CO7	Discuss / explain / derive Beer's law of absorptive.
CO8	Explain construction and working of colorimeter.
CO9	Apply colorimetric methods of analysis to real problem in analytical laboratory.
CO10	Solve problems based on theory / equations.
CO11	Correlate different terms with each other and derive equations for their correlations
CO12	Explain / define different terms in column chromatography such as stationary phase, mobile phase, elution, adsorption, ion exchange resin, adsorb ate, etc.
CO13	Explain properties of adsorbents, ion exchange resins, etc.
CO14	Discuss / explain separation of ionic substances using resins.
CO15	Discuss / explain separation of substances using silica gel / alumina.
CO16	Apply column chromatographic process for real analysis in analytical laboratory.

CO17	Explain / define different terms in column chromatography such as stationary phase, mobile phase, elution, adsorption, ion exchange resin, adsorbate, etc.
CO18	Explain properties of adsorbents, ion exchange resins, etc.
S. Y. B. Sc. Chemistry (Semester :IV)	
CH- 404:Inorganic Chemistry	
The student who successfully completes this course students will be able to:	
CO1	Isomerism in coordination complexes
CO2	Explain different types of isomerism in coordination complexes.
CO3	Apply principles of VBT to explain bonding in coordination compound of different geometries.
CO4	Correlate no of unpaired electrons and orbital's used for bonding.
CO5	Identify / explain / discuss inner and outer orbital complexes.
CO6	Explain principle of CFT.
CO7	Apply crystal field theory to different type of complexes (Td, Oh, Sq, Pl complexes)
CO8	Explain: i) strong field and weak field legend approach in Oh complexes ii) Magnetic properties of coordination compounds on the basis of weak and strong legend field
CO9	Legend concept. iii) Origin of color of coordination complex.
CO10	Calculate field stabilization energy and magnetic moment for various complexes.
S. Y. B. Sc. Chemistry (Semester :IV)	
CH- 404: Organic Chemistry	
The student who successfully completes this course students will be able to:	
CO1	Isomerism in coordination complexes
CO2	Explain different types of isomerism in coordination complexes.
CO3	Apply principles of VBT to explain bonding in coordination compound of different geometries.
CO4	Correlate no of unpaired electrons and orbital's used for bonding.
CO5	Identify / explain / discuss inner and outer orbital complexes.
CO6	Explain principle of CFT.
CO7	Apply crystal field theory to different type of complexes (Td, Oh, Sq, Pl complexes)
CO8	Explain: i) strong field and weak field legend approach in Oh complexes ii) Magnetic properties of coordination compounds on the basis of weak and strong legend field
CO9	Legend concept. iii) Origin of color of coordination complex.
CO10	Calculate field stabilization energy and magnetic moment for various complexes.
S. Y. B. Sc. Chemistry (Semester :IV)	
CH- 404: Organic Chemistry	
The student who successfully completes this course students will be able to:	
CO1	After studying the aldehydes and ketones student will able to
CO2	Identify and draw the structures aldehydes and ketones from their names or from structure name can be assigned
CO3	Explain / discuss synthesis of aldehydes and ketones.

CO4	Write / discuss the mechanism reactions aldehydes and ketones.
CO5	Explain /Discuss important reactions of aldehydes and ketones.
CO6	To correlate reagent and reactions of aldehydes and ketones
CO7	Give synthesis of expected aldehydes and ketones.
CO8	Identify and draw the structures carboxylic acids and their derivatives from their names or from structure name can be assigned.
CO9	Explain / discuss synthesis of carboxylic acids and their derivatives.
CO10	Write / discuss the mechanism reactions carboxylic acids and their derivatives.
CO11	Explain /Discuss important reactions of carboxylic acids and their derivatives.
CO12	Correlate reagent and reactions of carboxylic acids and their derivatives
CO13	Give synthesis of expected carboxylic acids and their derivatives.
CO14	Identify and draw the structures amines from their names or from structure name can be assigned.
CO15	Explain / discuss synthesis of carboxylic amines.
CO16	Write / discuss the mechanism reactions carboxylic amines.
CO17	Explain /Discuss important reactions of carboxylic amines.
CO18	To correlate reagent and reactions of carboxylic amines.
CO19	Give synthesis diazonium salt from amines and reactions of diazonium salt.
CO20	Draw the structures of different conformations of cyclohexane.
CO21	Define terms such as axial hydrogen, equatorial hydrogen, and confirmation, substituted Cyclohexane, etc.
CO22	Convert one conformation of cyclohexane to another conformation and should able to
CO23	Identify governing structural changes.
CO24	Explain / discuss stability with respect to potential energy of different conformations of Cyclohexane.

S.Y.B.Sc. Chemistry (Semester :IV)

CH- 405: Practical Chemistry

The student who successfully completes this course students will be able to:

CO1	Verify theoretical principles experimentally
CO2	Interpret the experimental data on the basis of theoretical principles.
CO3	Correlate the theory to the experiments. Understand / verify theoretical principles by experiment or explain practical output with the help of theory
CO4	Understand systematic methods of identification of substance by chemical methods.
CO5	Write balanced equation for all the chemical reactions performed in the laboratory.
CO6	Perform organic and inorganic synthesis and able to follow the progress of the chemical reaction.
CO7	Set up the apparatus properly for the designed experiments.
CO8	Perform the quantitative chemical analysis of substances and able to explain principles

**Janseva Foundation Loni Budruks
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Programme Outcomes	
PO 1	Understand the fundamental and advanced concepts, principles, protocols, methodologies, processes, scientific theories and phenomenon's related to subject and their applications in daily life.
PO 2	Obtain the basic as well as applied skills, theoretical and practical knowledge of the subject for constructing the life career in the field of Botany.
PO 3	Boost up and became self-confident in solving the subject and life related problems by acquiring the subject oriented employable knowledge and life skills for empowerment of self as well as social development.
PO 4	Hardened the subject oriented thinking ability of the students to make them creative researcher for proposing the novel ideas in the field of basic and applied Botany and its implementation, being as a Human resource for fulfillment of human needs.
PO 5	Cultured the life skills in student's mind for self-employment, improvement of economic status in local region, utilization of raw resources for furnished products at small scale as well as large scale agro-based industries.
PO 6	Always keep aware of cultivation, conservation, protection, production of value added services to the society by utilizing the natural resources and subject knowledge for betterment and sustainable development of life.
F.Y.B.Sc. (CBCS pattern)	
Semester I, Botany Paper I (BO 111): Plant Life and Utilization I)	
On Completion of the course, students are able to:	
CO1	Understand the outline classification of plant kingdom and diversity among the plants.
CO2	Know the systematic, morphology and structure, of Algae. Understand the life cycle Spirogyra. Usefulness of the algae.
CO3	Acquire the knowledge about Symbiotic association, types and utilization of Lichen.
CO4	Know the systematic, morphology and structure, of Fungi, the life cycle of Agaricus mushroom, and utilization of fungi.
CO5	Understand the systematic, morphology and structure, of Bryophytes with the life cycle study of representative Riccia. Utilization of bryophytes.
F.Y.B.Sc. (CBCS pattern)	
Semester I, Botany Paper II (BO 112): Plant Morphology and Anatomy	
CO1	CO1. Introduction and scope of morphology; importance of morphology in Identification, Nomenclature, Classification and Phylogeny and Plant breeding.
CO2	CO2. Know the morphology of reproductive parts (Inflorescence, Flower, Floral whorls,

	Fruit and Seeds) in relation to their parts, types, modifications, functions and importance.
CO3	CO3. Importance of anatomy in taxonomy, physiology, ecological interpretations, pharmacognosy and wood identification.
CO4	CO4. Exploring the knowledge of internal organization of plants and their parts. Types of tissues and their role in plant body construction and functioning.
CO 5	CO5. Understand the internal porganization of primary plant body w.r.t. root, stem and leaf of monocotyledonous and dicotyledonous plants.
F.Y.B.Sc. (CBCS pattern)	
Semester I, Botany Paper III (BO 113): Practical Based on BO 111 and BO112	
CO1	Introduction to handling of microscope, sectioning and slide preparation, practical performance in view of examination.
CO2	Understanding the life cycle pattern of various plant groups with specimen study of Spirogyra, Agaricus, and Riccia.
CO3	Understand the types of lichens and process of mushroom cultivation.
CO4	Know the external morphological features of reproductive parts viz, inflorescence, flower, floral whorls, fruits, seeds, their types, modifications and functions.
CO5	Understand the internal primary structure of monocots and dicots with reference to root, stem and leaf for observing difference at internal organization level between these two groups.
CO6	Botanical excursion to the nearby biodiversity area to observe the various plants of Algae, Fungi, Bryophytes, Lichens.
F.Y.B.Sc. (CBCS pattern)	
Semester II, Botany Paper I (BO 121): Plant Life and Utilization II)	
CO1	Understand the diversity among the higher plant groups pteridophytes, gymnosperms and angiosperms.
CO2	Understand the systematic, morphology and structure, of Pteridophytes with the life cycle study of representative Nephrolepis and utilization of pteridophytes.
CO3	Know the systematic, morphology and structure, of Gymnosperms. Understand the life cycle of Cycas. Utilization and economic importance of the Gymnosperms
CO4	Get acquainted with the outline classification of most evolved plant group Angiosperms. Able to understand the difference between monocot and dicot. Economic importance of Angiosperms in food, fodder, fiber, medicine and horticulture.
F.Y.B.Sc. (CBCS pattern)	
Semester II, Botany Paper II (BO 122): Principles of Plant Science	
CO1	To understand the scope and importance of plant physiology.
CO2	Know the physiological phenomenon involved in plant such as Diffusion, Osmosis, Plasmolysis.
CO3	Understand the concept of plant growth and factors affecting the growth.
CO4	Know the structural details of prokaryotic and eukaryotic cell, cell wall, and ultrastructure of chloroplast.

CO5	Understand the cell cycle in plants with reference to divisional stages of mitosis and meiosis.
CO6	Understand the central dogma, DNA structure, Watson and crick model of DNA, types of DNA and RNA, chromosome and DNA replication process.
F.Y.B.Sc. (CBCS pattern)	
Semester II, Botany Paper III (BO 123): Practical Based on BO 121 and BO122	
CO1	CO1. Understanding the life cycle pattern of plant groups Pteridophytes and Gymnosperms with specimen study of Nephrolepis and Cycas.
CO2	CO2. Know the comparative account of Dicotyledonous and Monocotyledonous plants w.r.t to external morphological characters
CO3	CO3. Demonstrating the use of plant resources in food, fodder, fiber, medicine, and horticulture industries.
CO4	CO4. Understand the differences between prokaryotic and eukaryotic plant cells.
CO5	CO5. Know the cell divisional stages of meiosis and mitosis with suitable plant material.
CO6	CO6. Understand the Chlorophyll estimation process, phenomenon of plasmolysis and demonstration of osmosis through curling experiment. CO7. Know the diffusion pressure deficit (DPD) phenomenon in plants.
S.Y.B.Sc. (CBCS pattern)	
Semester III, Botany Paper I (BO231) : Taxonomy of Angiosperms and Plant Ecology	
CO1	On Completion of the course, students are able to: Get knowledge regarding introduction, scope and importance of taxonomy in study of angiospermic plants.
CO2	Aware with available systems of plant classification along with their merits and demerits utilized in the taxonomy from ancient period to the date for classification of flowering plants.
CO3	Understand the plant diversity, and study the representative specimen of plant families with reference to systematic position, salient features, floral formula, floral diagram and economic importance of that family.
CO4	Know naming the plants in botanical terms using rule of nomenclature and following the system of Binomial nomenclature.
CO5	Understand the introduction to ecology in terms of concept, types of ecology, ecosystem and their components, food chain, food web, and ecological pyramids.
CO6	Understand the grouping of plants on the basis of external and internal ecological adaptation present in the plant in response to climatic conditions surrounding.
S.Y.B.Sc. (CBCS pattern)	
Semester III, Botany Paper II (BO 232) : Plant Physiology	
CO1	Understand the introduction about plant physiology with its scope and applications.
CO2	CO2. Know the role of water in plants, mechanism of water absorption and factors affecting it.
CO3	Understand the vital, physical and transpiration pull theories of ascent of sap and factors affecting ascent of sap.

CO4	Know the process of transpiration and stomata structure involved in transpiration; mechanism, significance and factors affecting transpiration
CO5	Understand the process of nitrogen metabolism with reference to BNF, and processes of denitrification, ammonification, nitrification, amination, transamination and role of nitrogen in plants.
CO6	Learn the types of seed dormancy, methods of seed dormancy and metabolic changes during seed germination.
CO7	Understanding the physiology of flowering with reference to photoperiodism, Phytohormones, and vernalization.

S.Y.B.Sc. (CBCS pattern)

Semester III, Botany Paper III (BO 233): Practical based on BO 231 and BO 232

CO1	Understand the taxonomic and ecological tools used in study of taxonomy and ecology.
CO2	Know the plant families with reference to diagnostic features, floral formula, floral diagram, and systematic position with locally available plant material of the given family.
CO3	Understand the external and internal ecological adaptations in Hydrophytes and Xerophytes.
CO4	To get acquainted with vegetation study by List-Count Quadrature method.
CO5	Understand the process of starch and protein estimation by phytochemical test and leaf protein isolation and estimation.
CO6	Performing the physiological experiments for identification of Diffusion pressure deficit (DPD), and rate of transpiration in different climatic conditions.
CO7	Know the demonstration of various plant physiology experiments and determination of seed germination index.
CO8	Understand the vegetation of nearby localities through Botanical excursion.

S.Y.B.Sc. (CBCS pattern)

Semester IV, Botany Paper I (BO 241) : Plant Anatomy and Embryology

CO1	CO1. Know the scope of plant anatomy in various field.
CO2	Understand the structure, types and functions of epidermal tissue system with reference to epidermis, stomata and epidermal outgrowths.
CO3	Learn the mechanical tissue system with reference to their distribution in plants and following the principle for providing the strength and support to the plants.
CO4	Understand the types of vascular tissue system and their role in development of normal or abnormal secondary growth in various plant as per the need of plant.
CO5	Study of scope and importance of plant embryology with reference to microsporangium and male gametophyte development; megasporangium and female gametophyte development.
CO6	Provide in depth knowledge to the students related to pollination mechanism; process and significance of double fertilization followed by structure, types, and functions of endosperm and embryo in flowering plants.

S.Y.B.Sc. (CBCS pattern)

Semester IV, Botany Paper II (BO 242) : Plant Biotechnology

CO1	Understand the concept, scope, importance and current status of Biotechnology.
CO2	Know the concept of plant tissue culture and cellular totipotency, basic techniques of PTC, commercial applications of PTC and tissue culture laboratories in India.
CO3	Understand the concept of single cell protein (SCP), importance of protein, production of SCP from algae (Spiraling) and fungi (Yeast) and its acceptability with economic application.
CO4	Understand the concept, and techniques of plant genetic engineering for development of genetically modified plants and their applications for sustainable development.
CO5	Learn the concepts of Genomics, Proteomics and Bioinformatics.
CO6	Understand the concept of bioremediation using plants and microbes and methods of phytoremediation.
CO7	Know the concept and types of renewable and non-renewable energy sources, concept of Biogas, Bioethanol, Biobutanol Biodiesel and Biohydrogen.
S.Y.B.Sc. (CBCS pattern)	
Semester IV, Botany Paper III (BO 243): Practical based on BO 241 and BO 242	
CO1	Understand the plant anatomy practically, through study of epidermal tissue system, mechanical tissue and their distribution in root, stem and leaves.
CO2	Understand the normal and abnormal secondary growth pattern in plants with suitable examples.
CO3	Understand the plant embryology with respect to study of tetrasporangiate anther, types of ovules, dicot and monocot embryo.
CO4	Know the instrumentation used in PTC, stages of PTC such as media preparation and sterilization, surface sterilization and inoculation of explant.
CO5	Understand the process of SCP cultivation using Spirulina.
CO6	Know the demonstration experiments of Biotechnology such as Transgenic crops, principle and working of agarose gel electrophoresis, centrifuge, spectrophotometer.
CO7	Understand the setup of Commercial plant tissue laboratory through the visit to nearby PTC commercial unit.

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F.Y. B. Sc. Semester I	
Life and Diversity of Animals-I (ZOO1101)	
On completion of the course, the students will be able to:	
CO1	Define terms related to animal systematics and outline the various systems of classification.
CO2	Outline the names of protozoan and helminthes parasites of animals and illustrate their life cycles and pathogenicity.
CO3	Demonstrate the structure and functions of spicule of sponges and classify the sponges on the basis of their skeleton.
CO4	Explain the systematic position, habitat, body wall, coelom of earthworm and explain the structure and functions of their organ system.
CO5	Classify the invertebrates on the basis of comparative morphology of animals and justify the reasons.
F.Y. B. Sc. Semester I	
Cell Biology (ZOO1102)	
CO1	Describe the concept of cell theory, cell -cell signalling, apoptosis, oncogenes and proto-oncogenes. Recall types of cells and label its components.
CO2	Differentiate plant cell, animal cell and compare their properties. Explain the structure and functions of various cell organelles and the process of cell division.
CO3	Illustrate the mechanism of programmed cell death, cell to cell communication and the process of mitosis and meiosis.
CO4	Identify and draw diagrams of cell organelles and analyse their functions.
CO5	Review the process of apoptosis, cell cycle, characteristics of cancerous cells.
CO6	Integrate the postulates of the cell theory with cellular activities which leads to repairing and regeneration of the cells and the production of energy.
F.Y. B. Sc. Semester I	
Zoology Practical – I (ZOO1103)	
CO1	Describe fundamental concepts of systematics, cell division and standard operating procedures of compound microscope.
CO2	Classify different species of animals from protozoa, porifera, coelenterate, platyhelminthes and aschelminthes.
CO3	Demonstrate the procedure of detection of mitochondria, preparation of slide for mitosis and identify various stages of mitosis.
CO4	Differentiate the features of prokaryotic and eukaryotic cells and compare plant cell and animal cell.
CO5	Justify the identification and classification of animals with the help of their distinguishing features.

CO6	Compile the data obtained from observations of animals in the field and organize it as per animal systematics.
F.Y. B.Sc. Semester II	
Life and Diversity of Animals-II (ZOO1201)	
CO1	Define different terminology of the genetics. Describe the concepts of Genetics, gene interaction, lethal genes, euploidy, aneuploidy, sex linked inheritance and principles of inheritance.
CO2	Explain and differentiate between multiple alleles and multiple genes. Explain the pattern of inheritance of complementary, supplementary, inhibitory and duplicate factors.
CO3	Execute the crosses of sex-linked inheritance, inheritance of blood groups, monohybrid cross, dihybrid cross and the test cross.
CO4	Differentiate the autosomes and sex chromosomes, euchromatin and heterochromatin. Outline the cell cycle of <i>Drosophila melanogaster</i> .
CO5	Apprise structural and numerical aberrations of chromosomes and give their characteristics and examples.
CO6	Specify the importance of genetic basis of life, integrate the principles of inheritance with plant and animal breeding and the medicolegal importance of blood group studies.
F.Y. B.Sc. Semester II	
Zoology Practical – II (ZOO1203)	
CO1	Recall the fundamental concepts of systematics, genetics, sex linked inheritance, multiple alleles and mutation.
CO2	Discuss, identify and classify different species of animals from Hemichordata, Cephalochordata, Urochordata, Cyclostomata, cartilaginous fishes and Bony fishes Examine different genetic traits in human being and analyze the human karyotype.
CO3	Detect A, B, AB, O and Rh blood groups.
CO4	Appraise and classify the specimens from zoology museum.
CO5	Compile the data of different syndromes in human beings and prepare a report.
S.Y. B. Sc. Semester III	
Life and Diversity of Animals-III (ZOO2301)	
CO1	Identify the Molluscs, Annelids, Echinodermata on the basis of comparative morphology and describe their evolutionary importance.
CO2	Articulate the mechanisms and hormonal control of metamorphosis process in insects.
CO3	Outline characteristics of Annelids, Molluscs, Arthropods, Echinodermata.
CO4	Explain the diversity and adaptive radiations of invertebrates
CO5	Apprise morphology of shell and foots modification in molluscs. Discriminate the mouth parts of various insects.
CO6	Write the field report on the basis of comparative morphology of animals by conducting the field survey.

S.Y. B. Sc. Semester III	
Applied Zoology -I (ZOO2302)	
CO1	Describe and discuss the basic concept and principals involved in the culture and breeding of common edible freshwater and marine species.
CO2	Explain cage, pen and integrated culture techniques and differentiate between them. Discuss and outline the preservation techniques of fishes.
CO3	Demonstrate the use of different crafts and gears; outline the modern and traditional techniques and methods of fishery by-products industry
CO4	Differentiate between freshwater, estuarine and marine fisheries. Compare the difference between culture fisheries and harvesting
CO5	Compare integrated fish farming, prawn culture with monoculture. Assess and discuss the advantages and disadvantages of different integrated culture techniques.
CO6	Design the structure of a fish farm for culture of fishes. Determine the different zoogeographical realms and prepare a world map on the basis of ichthyographical distribution of different species.
S.Y. B. Sc. Semester III	
Zoology Practical III (ZOO2303)	
CO1	Identify the fishes from freshwater and marine water. Describe external characters and other important systems of sea star. Design the experiment to culture and identify the crustacean larvae.
CO2	Classify and explain animals from phylum mollusc, Annelida, Arthropoda, Echinodermata. Demonstrate and identify the use of different crafts and gears.
CO3	Identify and compare the shell and foots modification in molluscs and mouth parts of different insects..
CO4	Determine the age of fishes and measure the length -weight of given fish. Calculate fin formula of the given fish specimen.
CO5	Determine the distribution of fishes on world map and carry out morphometric analysis of fish.
S.Y. B. Sc. Semester IV	
Life and Diversity of Animals-IV (ZOO2401)	
CO1	Identify and describe the characters of class – Reptilia, aves and mammals.
CO2	Differentiate and interpret the morphological characters of class reptilia, aves and mammals.
CO3	Classify the reptiles, aves and mammals.
CO4	Compare and interpret the structure and functions of organs of Scoliodons.
CO5	Discriminate the poisonous and non-poisonous snakes with the help of identification key
CO6	Write the field report on the basis of comparative morphology of animals by conducting the field survey. Carry out the field survey and write the field report on the basis of comparative morphology of vertebrate animals.
S.Y. B. Sc. Semester IV	
Applied Zoology II (ZOO2402)	

CO1	Articulate the basic concept of Apiculture and Sericulture, its importance, history and present status. Describe the taxonomy, morphological sex differences in pupa, larvae and adult of silkworm and honey bee.
CO2	Differentiate between different life stages of silkworm and honey bee and explain their life cycle. Discuss control and prevention of pests and diseases.
CO3	Demonstrate and discuss the culture methods of B.mori and Apis species. Outline the silkworm rearing technology, bee pollination and management of bee colonies for pollination.
CO4	Differentiate diseases of silk worms and honey bees, and different methods for control. Outline the important tools and equipment's used in apiculture and sericulture
CO5	Compare and explain bee behaviour and bee communication. Review of bee colony, castes, natural colonies, their yield and types of montages, spinning, harvesting.
CO6	Write about judicious use of their by-products and moriculture. Evaluate, appreciate and specify the importance of embarking on self-employment through rearing of silkworms, rearing honey bee

S.Y. B. Sc. Semester IV

Zoology Practical III (ZOO2403)

CO1	CO1 Identify the birds on the basis of beak and feet. Discriminate, poisonous and non-poisonous snakes with the help of identification key.
CO2	Classify the vertebrates, reptiles, aves, mammals.
CO3	Demonstrate external characters and other important systems of Scoliodon
CO4	Identify and explain mouth parts, wings legs and sting of honey bee. Describe the life cycle of honey bee and silk worm.
CO5	Assess the quality of soil and interpret its suitability for moriculture.
CO6	Prepare sericulture maps indicating mulberry and non –mulberry belts in India. Prepare a report on bird diversity in Fergusson College campus. Identify the various instruments used in apiculture and sericulture.

Janseva Foundation Loni Budruks
Arts and Commerce College Shendi
Department of Physics
PO's And Co's

F.Y.B.Sc Paper- I Semester – I	
Physics Paper – I (PHY-111) Mechanics and Properties of Matter	
On successful completion of this course students will be able to do the following	
CO1	Demonstrate an understanding of Newton's laws and applying them in calculations of the motion of simple systems
CO2	Use the free body diagrams to analyse the forces on the object.
CO3	Understand the concepts of energy, work, power, the concepts of conservation of energy and be able to perform calculations using them.
CO4	Understand the concepts of elasticity and be able to perform calculations using them
CO5	Understand the concepts of surface tension and viscosity and be able to perform calculations using them.
CO6	Use of Bernoulli's theorem in real life problems.
CO7	Demonstrate quantitative problem solving skills in all the topics covered.
F.Y.B.Sc Paper- I Semester – II	
Physics Paper – I (PHY-121) Heat and Thermodynamics	
After successfully completing this course, the student will be able to do the following:	
CO1	Describe the properties of and relationships between the thermodynamic properties of a pure substance
CO2	Describe the ideal gas equation and its limitations
CO3	Describe the real gas equation
CO4	Apply the laws of thermodynamics to formulate the relations necessary to analyze a thermodynamic process
CO5	Analyse the heat engines and calculate thermal efficiency
CO6	Analyze the refrigerators, heat pumps and calculate coefficient of performance.
CO7	Understand property „entropy“ and derive some thermo dynamical relations using entropy concept.
CO8	Understand the types of thermometers and their usage.
F.Y.B.Sc Paper- II Semester – I	
Physics Paper – II (PHY-112) Physics Principles and Applications	
On successful completion of this course students will be able to do the following:	
CO1	To understand the general structure of atom, spectrum of hydrogen atom.
CO2	To understand the atomic excitation and LASER principles.
CO3	To understand the bonding mechanism and its different types.

CO4	To demonstrate an understanding of electromagnetic waves and its spectrum.
CO5	Understand the types and sources of electromagnetic waves and applications.
CO6	To demonstrate quantitative problem solving skills in all the topics covered
F.Y.B.Sc Paper- II Semester – II	
Physics Paper – II (PHY-122) Electricity and Magnetism	
On successful completion of this course students will be able to do the following:	
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's 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's and Ampere's Circuital laws
CO5	To study magnetic materials and its properties.
CO6	Demonstrate quantitative problem solving skills in all the topics covered.
S.Y.B.Sc Paper- I Semester – III	
Course Physics Paper – I (PHY-231) Mathematical Methods in Physics-I	
After the completion of this course students will be able to	
CO1	Understand the complex algebra useful in physics courses.
CO2	Understand the concept of partial differentiation.
CO3	Understand the role of partial differential equations in physics.
CO4	Understand vector algebra useful in mathematics and physics.
CO5	Understand the concept of singular points of differential equations
S.Y.B.Sc Paper- I Semester – IV	
Course Physics Paper – I (PHY-241) Oscillations, Waves, and Sound	
On completion of this course	
CO1	To study underlying principles of oscillations and its scope in development.
CO2	To understand and solve the equations / graphical representations of motion for simple harmonic, damped, forced oscillators and waves.
CO3	To explain oscillations in terms of energy exchange with various practical applications
CO4	To solve numerical problems related to un damped, damped, forced oscillations and superposition of oscillations
CO5	To study characteristics of sound, decibel scales and applications.
S.Y.B.Sc Paper- II Semester – III	
Course Physics Paper – II (PHY-232) Electronics	
On successful completion of this course the students will be able to	
CO1	Apply different theorems and laws to electrical circuits.

CO2	Understand the relations in electricity.
CO3	Understand the parameters, characteristics and working of transistors.
CO4	Understand the functions of operational amplifiers
CO5	Design circuits using transistors and applications of operational amplifiers
CO6	Understand the Boolean algebra and logic circuits
S.Y.B.Sc Paper- II Semester – IV	
Course Physics Paper – II (PHY-242) Optics	
On successful completion of this course the students will be able to	
CO1	Acquire the basic concept of wave optics.
CO2	Describe how light can constructively and destructively interfere.
CO3	Explain why a light beam spread out after passing through an aperture
CO4	Summarize the polarization characteristics of electromagnetic wave
CO5	Understand the operation of many modern optical devices that utilize wave optics
CO6	Understand optical phenomenon such polarization, diffraction and interference in terms of the wave model