

Course Outcomes

Choice Based Credit System - 2019 A.Y. 2019-20

Faculty of Arts

B. A. - Geography

Class	Course	Course Outcomes
F.Y.B.Com Sem. - I	Commercial Geography Subject Code 115	<ol style="list-style-type: none"> 1. Students understand correlation between economic activities and geographical factors. 2. Students acquaint relationship between economic activities and environment. 3. Students aware about dynamic aspects of resources and need of their conservation. 4. Students understand the role and dynamic of population in commerce.
F.Y.B.Com Sem. - I	F.Y.B.A. Commercial Geography Subject Code 125	<ol style="list-style-type: none"> 1. Understand the correlations between economic activities and geographical factors. 2. Students acquaint the industrial sectors. 3. Students aware about the role of tourism in development. 4. Students understand with basic cartographic techniques.

Class	Course	Course Outcomes
F.Y.B.A Sem. - I	F.Y.B.A. Physical Geography Subject Code 110-A	<ol style="list-style-type: none"> 1. Students to the basic concepts in Physical geography. 2. Understand the latest concept in Physical geography 3. Students acquaint utility and application of Physical geography in different regions and environment. 4. Students aware about Earth system (Lithosphere, Atmosphere, Biosphere and Hydrosphere)
F.Y.B.A Sem. - I	F.Y.B.A. Human Geography Subject Code 110-B	<ol style="list-style-type: none"> 1. Students Introduce the basic concept of human geography 2. Students Understand population characteristics and different types of theories 3. Students Aware about relationship between population settlements and type of occupations.

B. A. - Political Science

Class	Course	Course Outcomes
F. Y. B. A Sem. - I	G-I (11161A) An Introduction to Indian Constitution	<ol style="list-style-type: none"> 1. Students are able to understand the historical background and the salient features of Indian constitution 2. Students explain the difference between the fundamental rights and directive principles mentioned in Indian constitution 3. Students describe the challenges ahead of Indian Union territory 4. Eligible to explain the role of citizens in nation building
F. Y. B. A Sem. - II	G-I (11161-A) An Introduction to Indian Constitution- II	<ol style="list-style-type: none"> 1. It helps to understand the difference between the union and state legislature 2. Students explain the role and functions of the union and state executive 3. Students describe the role of judiciary in the federal state (Federalism) 4. Students understand the importance of right of vote in democracy



Political Science - M. A.

Sr. No.	Course	Course Outcomes
M.A.- I Sem. - I	Traditions of Political Thought.	<ol style="list-style-type: none"> 1. Students know about the history of Political Theories from Confucius and Plato. 2. It helps the students to understand the major traditions of thought that have change. 3. Students understand the importance of Thoughts of Niccolo Machiavelli and Jean-Jacques Rousseau in Early Modern Era. 4. Students are able to explain the relevance of Karl Marx's ideas in contemporary world.
	Administra - - tive Theory.	<ol style="list-style-type: none"> 1. Students explain the changing steps of public administration. 2. Students are able to understand the changing trends in the field of Public Administration. 3. It helps the students to understand the governance. 4. Students are able to understand the organizations and its functions.
	Political Institutions In India.	<ol style="list-style-type: none"> 1. Students are aware of Unity and Integrity in the development of the nation. 2. Students describe the role of central government in the federal structure of India. 3. Students explain the concept of judicial activism. 4. Students understand the importance of legislative supremacy in the democratic system.
	India's Foreign Policy.	<ol style="list-style-type: none"> 1. It helps the student to undertake an in depth analysis of India's foreign policy. 2. Students able to probe and ascertain the major issues and debates in the field of Indian foreign policy. 3. It helps the students to explore India's complex relationships, both bilateral and multilateral, with other countries. 4. Students understand the basic need of India and Regional Organizations.
M.A.- I Sem. - II	Comparative Political Analysis. Sem. - II	<ol style="list-style-type: none"> 1. It helps the students to understand the sub-discipline of comparative politics analysis. 2. Students understand the various approaches to the study of Comparative Politics. 3. Students explain the differences between the state and non-state actors. 4. Students are able to compare developed and undeveloped countries in political perspective.
	Theory of International Politics. Sem. - II	<ol style="list-style-type: none"> 1. It helps the students to understand the interpretative frameworks for what is happening in the world and the levels of analysis. 2. Students are able to classify the positivist and post positivist framework. 3. The study of international politics creates a sense of universal brotherhood among the students. 4. Students are aware of the environmental problems in new world structure.



M.A. - I Sem. - II	Public Policy. Sem. - II	<ol style="list-style-type: none"> 1. It helps students to understand the nature and scope of public Policy. 2. Students understand the various approaches to the study of public policy. 3. Students can explain the Impact of Globalization on process of policy-making. 4. Students understand the role of of legislature in formation of policy making.
	Political Thought In Modern Maharashtra. Sem. - II	<ol style="list-style-type: none"> 1. It helps the students to understand the main issues and concerns in the public life in the context of colonialism, nationalism and modernity. 2. It helps the students to understand the essentially collective and yet diverse nature of political thought. 3. Students are able to discuss the contribution of Lokmanya Bal Gangadhar Tilak in modern Maharashtra. 4. Student are Compare the views of Dr. Ambedakar and Mahatma Phule on social reform.

B.A. (History)

Sr. No.	Course	Course Outcome
FYBA Sem. - I	G-1 Early India: From Prehistory to the Age of the Mauryas	<ol style="list-style-type: none"> 1. It is a base for understanding the entire Indian history. 2. 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 3. 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. 4. It also attempts to help the students to understand the contribution of Early Indians to polity, art, literature, philosophy, religion and science and technology. 5. It also aims to foster the spirit of enquiry among the students by studying the major developments in early Indian history.
FYBA Sem. - I	G-1 Early India: Post Mauryan Age to the Rashtrakutas	<ol style="list-style-type: none"> 1. 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. 2. 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. 3. The attempt is also to instill the spirit of enquiry among the 4. Students. 5. It attempts to highlight the consequences of the foreign invasions, particularly on the polity, economy, society and art and architecture.



M.A. (History)

Sr. No	Course	Course Outcome
MA I Sem. - I	1. History: Theory and Method	<ol style="list-style-type: none"> 1. The paper is designed to provide adequate conceptual base, 2. Bring better understanding of history and its forces, 3. Help interrogate existing paradigms and challenge the out dated, help in developing critique, 4. Help research in terms of formulating hypotheses and develop broad frames of interaction with other social sciences and attain certain level of Interdisciplinary approach.
	2. Evolution of Ideas and Institutions in Early India	<ol style="list-style-type: none"> 1. The course intends to provide an understanding of the social Economic and institutional bases of early India 2. It is based on the premise that an understanding of early Indian history is crucial to understand Indian history as a whole.
	3. Maratha Polity	<ol style="list-style-type: none"> 1. The purpose of the course is to study the administrative system of the Marathas in an analytical way 2. To acquaint the student with the nature of Maratha Polity 3. To understand basic components of the Maratha administrative structure, 4. To enable the student to understand the basic concepts of the Maratha polity.
	4. Social Background of Dalit Movement in Maharashtra	<ol style="list-style-type: none"> 1. This paper is designed to emphasize the background of the Dalit movement which flourished in the twentieth century. 2. It highlights the earlier forms of protest from the ancient till the medieval period 3. Which laid the foundations for social protest and dissent in the pre-Ambekar period.
M.A. I (Sem. II)	1. approaches to History	<ol style="list-style-type: none"> 1. The paper is designed to make the student aware about the various approaches to the discipline of History. 2. With its roots in Indian history, the paper provides a historical review of the salient 3. Approaches that have developed over the last few centuries. 4. It is hoped that the student will become 5. Aware of the idea that the same set of historical source materials can be interpreted in different ways depending upon the approach one takes in studying them.
	2. Ideas and Institutions in Medieval India	<ol style="list-style-type: none"> 1. The course examines the nature of medieval Indian society, economy, state formations, and the main religious currents of the time. 2. It is seen as a continuation of the course on ancient India. 3. It is also seen to be crucial to an understanding of the nature of society, and the problems of the challenge to that society, through colonialism, at a later stage.
	3. Socio-Economic History of the Marathas	<ol style="list-style-type: none"> 1. The purpose of the course is to study socio-economic history of the Marathas in an analytical way 2. To acquaint the student with the components of social structure and their functions, to understand the relationship between religion, caste, customs, traditions, class in 17th and 18th century Maratha Society 3. To enable the student to understand aspects of economic life, 4. To trace the determinants of changes in social and economic life.



MA I (Sem. II)	4. Nature of Dalit Movement in Maharashtra	<ol style="list-style-type: none"> 1. The attempt here is to help students to understand the details of the most important and neglected socio-religious reform movement in Maharashtra with its root causes. 2. Maharashtra with its root causes. 3. The paper attempts to help students to understand the Ideology of Dr. Babasaheb Ambedkar who was the unchallenged leader of the Dalit Movement.
-------------------	--	--

B.A. Marathi – (बी.ए. मराठी)

Sr. No.	Course	Course Outcome
FYBA Sem. - I	मराठी साहित्य : कथा आणि भाषिक कौशल्यविकास	<ol style="list-style-type: none"> 1. कथा या साहित्यप्रकाराची ओळख झाली. 2. कथा या साहित्यप्रकाराचे स्वरूप, घटक आणि प्रकार समजावून घेतली. 3. विविध साहित्यप्रवाहांमधील कथा या साहित्यप्रकारातील निवडक कथांचे अध्ययन. 4. भाषिक कौशल्यांचा विकास झाला.
FYBA Sem. - II	मराठी साहित्य : एकांकिका आणि भाषिक कौशल्यविकास	<ol style="list-style-type: none"> 1. एकांकिका या साहित्यप्रकाराची ओळख झाली.. 2. एकांकिका या साहित्यप्रकाराचे स्वरूप, घटक आणि प्रकार समजावून घेतली. 3. मराठी साहित्यातील निवडक एकांकिकांचा परिचय झाला.
FYBCOM Sem. - I	भाषा, साहित्य आणि कौशल्यविकास	<ol style="list-style-type: none"> 1. विविध क्षेत्रातील भाषा व्यवहाराचे स्वरूप व गरज समजावून घेतले. 2. या व्यवहार क्षेत्रातील मराठी भाषेचे स्थान स्पष्ट करणे व त्यातील मराठीच्या प्रत्यक्ष वापराचा अभ्यास केला.
FYBCOM - Sem. - II	भाषा आणि कौशल्यविकास	<ol style="list-style-type: none"> 1. विविध क्षेत्रीय मराठी भाषेच्या वापराची कौशल्यांचा विकास झाला. 2. विविध लेखनप्रकारांचा अभ्यास व प्रत्यक्ष लेखन कौशल्यांचा वापर केला. 3. विविध क्षेत्रातील कर्तृत्ववान व्यक्तींच्या कार्याची व विचारांची ओळख करून घेतली. 4. विद्यार्थ्यांमध्ये नैतिक, व्यावसायिक व वैचारिक मूल्यांची जोपासना झाली.

M.A. Marathi - (एम.ए. मराठी)

Sr. No.	Course	Course Outcome
M. A. - I Sem. - I	भाषाव्यवहार आणि भाषिक कौशल्ये - 1	<ol style="list-style-type: none"> 1) प्रमाणभाषा विषयक नियमांची माहिती झाली. 2) विविध साहित्य संस्था व त्यांच्या वाङ्मयीन कार्याचा परिचय झाला.
	अर्वाचीन मराठी वाङ्मयाचा इतिहास	<ol style="list-style-type: none"> 1) पदव्युत्तर स्तरावरील विद्यार्थ्यांना मराठी साहित्याच्या ऐतिहासिक परंपरांचा परिचय झाला. 2) विशिष्ट कालखंडातील साहित्याच्या प्रेरणा, प्रवृत्ती यांचा परिचय झाला.
M. A. - I Sem. - I	ऐतिहासिक भाषा विज्ञान	<ol style="list-style-type: none"> 1) ऐतिहासिक भाषाभ्यास स्वरूप, महत्व, भाषेची संकल्पना यांचा परिचय झाला. 2) मराठी भाषेची उत्पत्ती व त्यातील भाषिक परिवर्तनाचा प्रवास विद्यार्थ्यांना समजला.
	ग्रामीण साहित्य	<ol style="list-style-type: none"> 1) ग्रामीण साहित्याचे महत्व विद्यार्थ्यांना समजले. 2) ग्रामीण साहित्यातील स्वरूप व कार्य यांची चिकीत्सा समजावून घेतली. 3) ग्रामीण साहित्यातील विविध वाङ्मय प्रकारचे मूल्यमापन समजावून घेतले. 4) ग्रामीण साहित्याने दिलेले योगदान त्याच्या विकासाची गती व मिमासा समजावून घेतली.



M. A. - I Sem. - II	भाषाव्यवहार आणि भाषिक कौशल्ये - 2	१) भाषांतराची आवश्यकता व महत्त्व यांची ओळख झाली. २) जनसंपर्क कौशल्याची तंत्रे समजावून घेतली.
	अर्वाचीन मराठी वाङ्मयाचा इतिहास	१) इ.स.१८१८ व १९२० या कालखंडातील निबंध ,कविता,कथा कादंबरी , नाटक,चरित्र,आत्मचरित्र या वाङ्मयप्रकाराचा परिचय झाला . २) इ.स.१९२० व २०१० या कालखंडातील निबंध ,कविता,कथा कादंबरी नाटक, चरित्र, आत्मचरित्र या वाङ्मयप्रकाराचा परिचय झाला.
	समाज भाषा विज्ञान	१) सामाजिक भाषाविज्ञान,स्वरूप,व्याप्ती,व विशेष,समजण्यास मदत झाली. २) समाजातील भाषा उपयोजनातील विविधता समजावून घेतली. ३) भाषा,सामाजिक परंपरा आणि विविध सामाजिक संस्था समजावून घेण्यास मदत झाली. ४) प्रमाण भाषेची संकल्पना समजली .
	दलित साहित्य	१) दलित साहित्याच्या निर्मितीची कारणे व परंपरा विद्यार्थीना समजले. २) दलित साहित्यातून व्यक्त होणाऱ्या वेदना व विद्रोहाचे स्वरूप समजावून घेतले. ३) विद्यार्थीना दलित साहित्यातील विविध वाङ्मयप्रकारांच्या विकासाचे मूल्यमापन समजून घेण्यास मदत झाली.

B.A. English

Sr. No.	Course	Course Outcome
FYBA Sem. - I	Compulsory English (CBCS-2019)	1. To introduce a few Indian, and Western writers. 2. To impart cultural values and the idea of inclusion. 3. To familiarize students with tenses, basic sentence pattern and language in use.
FYBA Sem. - II	Compulsory English (CBCS-2019)	1. To improve students' reading and writing skills. 2. To develop an understanding of formal, informal usage. 3. To help students understanding the concept of effective communication.
FYBA Sem. - I	Optional English (CBCS-2019)	1. To introduce basic concepts of language and literature. 2. To acquaint the students with the minor forms of literature and to help them to appreciate the creative use of language in literature. 3. To introduce the basics of phonology so that students can pronounce better and speak English correctly.
FYBA Sem. - II	Optional English (CBCS-2019)	1. To instill multiple skills, namely listening, speaking, reading and writing. 2. To enhance job potential by improving their language skills. 3. To develop understanding of grammatical and communicative principles.
FYB.Com Sem. - I	Compulsory English (CBCS-2019)	1. To introduce beauty of language to the learners. 2. To introduce the basic skills of language. 3. To suggest ways of developing linguistic and communicative competence.
FYB.Com Sem. - II	Compulsory English (CBCS-2019)	1. To develop conversational and writing skills. 2. To develop grammatical, communicational, pragmatic and critical competencies among the students. 3. To develop understanding of literacy genres and to acquaint the students with tools of analysing literary genres.
FYB.Com Sem. - I	Additional English (CBCS-2019)	1. To expose student to beauty and communicative power of English. 2. To make student aware of cultural values and major problems in the world today. 3. To introduce a few Indian, and Western writers.



FYB.Com Sem. - II	Additional English (CBCS-2019)	<ol style="list-style-type: none"> 1. To develop literary sensibilities and communicative abilities among the students. 2. To expose to the form of poetry and short story. 3. To improve students' reading and writing skills.
----------------------	--------------------------------------	--

M. A. English

Sr. No.	Course	Course Outcome
MA-Part-I Sem. - I	Paper 1.1: English Literature from 1550 to 1798	<ol style="list-style-type: none"> 1. To introduce students to the major movements and figures of English Literature through a study of selected literary texts/pieces published during the period prescribed for study. 2. To enhance learners' literary sensibility and their emotional response to literary texts and to help them understand the thematic and stylistic preoccupations of the writers prescribed for study.
MA-Part-I Sem. - II	Paper 2.1: English Literature from 1550 to 1798	<ol style="list-style-type: none"> 1. To enable them to critically examine the writers' thematic concerns and to point out the (in) significance of such concerns in the postcolonial context. 2. To help them recognize the distinctive ways in which the writers differed, in their ideological positions, from their counterparts belonging to different ages. 3. To enhance their proficiency in English
MA-Part-I Sem. - I	Paper – 1.2: English Literature from 1798 to the Present	<ol style="list-style-type: none"> 1. To introduce the rise of humanism, the rise of the sonnet sequence, Elizabethan drama, the University Wits, Shakespeare's theatre and audience, Metaphysical poetry, the Neo-classical Age, the Romantic Movement, etc. 2. To introduce the socio-political and historical conditions that prevailed in England during the periods mentioned in the title of the papers.
MA-Part-I Sem. - II	Paper – 2.2: English Literature from 1798 to the Present	<ol style="list-style-type: none"> 1. To discuss the dominant literary tendencies and trends, the stylistic features of the authors prescribed for study, the major thematic concerns in the texts, etc. are also issues that can be discussed. 2. To implement ICT-based teaching tools (PPT, film versions of literary texts, YouTube videos, NPTEL Videos etc.) Amply supported by classroom interaction. 3. To adopt Seminars, discussions and presentations in the classroom as means to enhance the critical skills of learners.
MA-Part-I Sem. - I	Paper 1.3: Contemporary Studies in English Language	<ol style="list-style-type: none"> 1. To introduce students to the nature, function and relevance of literary criticism and theory 2. To introduce them to various important critical approaches and their tenets 3. To encourage them to deal with highly intellectual and radical content and thereby develop their logical thinking and analytical ability
MA-Part-I Sem. - II	Paper 2.3: contemporary Studies in English Language	<ol style="list-style-type: none"> 1. To develop sensibility and competence in them for practical application of critical approach to literary texts 2. To encourage students to take efforts to understand the approaches and apply them to texts of their choice. 3. To help them shake off some of the regional features of English pronunciation
MA-Part-I Sem. - I	Paper – 1.4: Literary Criticism and Theory	<ol style="list-style-type: none"> 1. To introduce students to the nature, function and relevance of literary criticism and theory 2. To introduce them to various important critical approaches and their tenets 3. To encourage them to deal with highly intellectual and radical content & thereby develop logical thinking and analytical ability



MA-Part-I Sem. - II	Paper - 2.4 Literary Criticism and Theory	<ol style="list-style-type: none"> 1. To develop sensibility and competence in them for practical application of critical approach to literary texts 2. To cover the mammoth range of major critical approaches from the ancient to the post structural period. 3. To give the explanation of the broad differences between the traditional and the modern criticism and between criticism and theory can greatly help students know views in larger perspectives.
------------------------	--	---

B.A. Economics

Sr. No.	Course	Course Outcome
F.Y.B.A. (CBCS)	G-1 Indian Economic Environment	<ol style="list-style-type: none"> 1. To familiarize the students with the recent developments in the Indian Economy 2. To provide the students with the background of the Indian Economy with focus on contemporary issues like economic environment. 3. To help the students to prepare for varied competitive examinations 4. To enable students to understand and comprehend the current business scenario, agricultural scenario and other sectorial growth in the Indian context. 5. To make the student aware of the developments such as MSMEs, Digital Economy, E-Banking, BPO & KPO, etc.
F.Y.B.Com. (CBCS)	Business Economics (Micro)	<ol style="list-style-type: none"> 1. To impart knowledge of business economics 2. To clarify micro economic concepts 3. To analyze and interpret charts and graphs 4. To understand basic theories, concepts of micro economics and their application

M. A. Economics

Sr. No.	Course	Course Outcome
M. A. - I Sem.- I	Micro- Economic Analysis -I	<ol style="list-style-type: none"> 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.
	Public Economics-I	<ol style="list-style-type: none"> 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.
	International Trade	<ol style="list-style-type: none"> 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.



	Agricultural Economics	<ol style="list-style-type: none"> 1. To develop an understanding of agricultural economics in the theoretical as well as practical context. 2. To discuss and debate the various issues and challenges faced by agrarian economies w.r.t. production, productivity, efficiency, employment, etc. 3. The student applicable to agricultural knowledge in practical life. 4. To develop an understanding of agricultural economics in the theoretical as well as practical context.
M. A. - I Sem-II	Micro-Economic Analysis - II	<ol style="list-style-type: none"> 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.
	Public Economics-II	<ol style="list-style-type: none"> 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. 4. To develop an understanding of various policies in public economics like fiscal policy, public debt policy, fiscal finances, etc.
	International Finance	<ol style="list-style-type: none"> 1. To develop an understanding of the theoretical concept in international finance- Balance of Payments, exchange rate policies, capital flows, etc. 2. To compare and contrast the scenarios on international trade in India vis-à-vis the world economy. 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.
	Labour Economics	<ol style="list-style-type: none"> 1. To develop an understanding of labour economics in the theoretical as well as practical context. 2. To discuss and debate the various issues and challenges faced by labour with reference to division of labour, employment, wage determination, etc. 3. To demonstrate on the various aspects of labour dynamics and labour relations w.r.t. India 4. This course students will be expected to classification labour Problems.



Faculty of Commerce

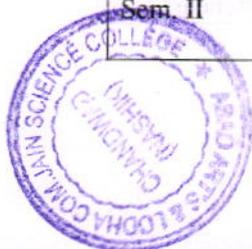
Bachelor of Commerce (B. Com.)

Class	Course	Course Outcomes
F.Y.B.Com Sem. - I	Financial Accounting	<ol style="list-style-type: none"> To Study will be able to acquire in-depth knowledge To Study will be able to acquire in-depth knowledge To Study will be able to understand the process and importance of conversion of single entry into double entry system To Study will gain knowledge about GST and its implications
	Business Mathematics & Statistics	<ol style="list-style-type: none"> To Study will be able to apply concepts of interests and annuities to calculate EMI To Study will be able calculate dividend, brokerage on shares and mutual funds To Study will be able to recognize and classify different types of data To Study will be able to calculate measures of central tendency and measures of dispersion.
	Essentials of E- Commerce	<ol style="list-style-type: none"> To acquaint the learner with knowledge on the basics of E-commerce. To develop knowledge on various types of E-commerce business To develop practical knowledge on effective design of Website and Domain Registration
	Business Environment & Entrepreneurship	<ol style="list-style-type: none"> To Study understanding of various aspects business environment useful for would be entrepreneurs To Study understanding of various aspects of pollution and its ill effects To Study understanding of Problems and their causes and remedies To Study understanding the concept of entrepreneur, competencies of a successful entrepreneur
F.Y.B.Com Sem. - II	Financial Accounting	<ol style="list-style-type: none"> To Study Students are expected to acquaint themselves with Computerized accounting, its application and utility To Study Understanding the accounting process of accounting of charitable trusts To Study Learning the concept of intangible assets and the methods of their valuation. Understanding the process and methods of leasing.
	Business Mathematics & Statistics	<ol style="list-style-type: none"> Students will be able to apply the theory of matrices to solve business and economic problems. Students will be able represent business and economic optimization problems involving two variables as LPP and solve those problems using graphical method Students will able to predict the type of relationship between bivariate data. Students will be able compute different index numbers.
	Essentials of E-Commerce	<ol style="list-style-type: none"> Familiar with E-commerce Tools Familiar with E-Marketing Familiar with Electronic Payment System
	Business Environment & Entrepreneurship -	<ol style="list-style-type: none"> Understanding the difference between entrepreneurial and non-entrepreneurial Understanding the significance of entrepreneurship in economy thereby getting inspiration to become entrepreneur Knowing the functions of related institutions Inspiration from study of Biographies to become entrepreneurs



M.Com.

Class	Course	Course Outcomes
M.Com I Sem. I	Management Accounting Sem. I	<ol style="list-style-type: none"> To understand the concept of Financial Accounting and its limitations, emergence of Management Accounting and Cost Accounting, its advantages and distinction between Management Accounting and Cost Accounting To understand the concept of Marginal Costing, its applications, different Techniques of managerial cost accounting and Fixed and Variable Cost Analysis in decision making process. To understand the concept of budget and budgetary control, types of budgets and preparation of functional budgets in an organization To understand the concept of Working Capital Management, determination of working capital, components of working capital and accounts receivable and inventory management.
	Strategic Management Sem. I	<ol style="list-style-type: none"> Understanding of the concept of Strategic management to understand the process of Strategic Management Understanding the External and Internal Business Environment for effective Strategy formulation Development of Strategic analytical skills skill to design an effective Strategic Plan Development of Applicability skills for effective plan implementation developing Technical skills for evaluation of alternatives & analytical skills for choice among alternatives Development of Technical and Analytical abilities for formulation of sound functional Strategy in various areas of business development of Analytical and Managerial Abilities for critical evaluation.
	Advanced Accounting Sem. I	<ol style="list-style-type: none"> Getting familiar with the Advanced Concepts Understanding the Consolidation of Financial Statements of Holding Companies & two Subsidiary Companies To Prepare Statement of Affairs of Companies in Liquidation In the today's competitive Corporate World to understand the needs and methods of valuation of Goodwill & Shares
M.Com I Sem. I	Income Tax Sem. I	<ol style="list-style-type: none"> To provide the basic knowledge of Income Tax Act. 1961 To understand the concepts of Heads of Income and to compute the income under each head. To understand the concept of deductions of Sec. 80C to 80U To compute the taxable income of an Individual, Hindu Undivided Family and Companies.
	Advanced Cost Accounting. Sem. I	<ol style="list-style-type: none"> To acquaint the students with the significance of Cost Accounting in Global Competitive environment To enable students to learn application of different methods of costing in Manufacturing and Service Industry.
	Costing Tech. and Respons. Accounting.	<ol style="list-style-type: none"> To equip the students for designing and implementing cost Control, cost reduction Programme and different cost system. Relevant Cost Accounting Standard are to be studied Level of knowledge –Advanced Techniques of Costing
	Production & operation Management	<ol style="list-style-type: none"> To study the basic concepts of Prod. & Operation Mgmt. To provide knowledge on of Financial Management
	Financial management	<ol style="list-style-type: none"> To familiarize the students Financial management o Students will be able compute Financial management
M.Com I Sem. II	Financial Analysis & Control	<ol style="list-style-type: none"> To Study will be course is to enable students to acquire sound knowledge of concepts, To Study will be course is to enable students to acquire sound knowledge of concepts,



M.Com I Sem. II	Industrial Economics	<ol style="list-style-type: none"> 1. To study the basic concepts of Industrial Economics 2. To study the significance and problems of Industrialization. 3. To study the impact of Industrialization on Indian Economy
	Specialized Areas in Accounting	<ol style="list-style-type: none"> 1. To develop competency of students to solve problems relating Special areas in accounting including accounting for Service Sector 2. To understanding of Financial Reporting Practices 3. To familiarize the student with procedure of accounting for Taxation.
	Business Tax Assessment & Planning	<ol style="list-style-type: none"> 1. To provide understanding of Direct Taxes including Rules pertaining thereto and their application to different business situations. 2. To understand principles underlying the Service Tax. 3. To understand basic concepts of VAT, Excise Duty and Customs Duty.
	Application of Cost Accounting	<ol style="list-style-type: none"> 1. To provide knowledge on advanced cost accounting practices. 2. Relevant Cost Accounting Standard are to be studied
	Cost Control and Cost System	<ol style="list-style-type: none"> 1. To equip the students for designing and implementing cost control, cost reduction programme and different cost systems. 2. Relevant Cost Accounting Standards are to be studied.
	Business Ethics and Professional Values	<ol style="list-style-type: none"> 1. To acquaint the students with in-depth knowledge business ethics and Professional Values 2. To familiarize the students with the recent advancements in business administration
	Elements of Knowledge Management	<ol style="list-style-type: none"> 3. To inculcate among students various practices followed by Elements of Knowledge Management 4. To provide in depth knowledge about process of formation of group behavior in management

Faculty of Science

B.Sc. - Botany

Sr. No.	Course	Course outcome
F.Y.B.Sc. Sem. - I	BO 111 Plant life and utilization I	<ol style="list-style-type: none"> 1. Understand the application, economical and biological importance of Algae, Fungi, and Lichens & Bryophytes.
	BO 112 Plant morphology and Anatomy	<ol style="list-style-type: none"> 1. To understand plant external & internal structure.
	BO 113 Practical based on BO111 & BO 112	<ol style="list-style-type: none"> 1. Practical skills: Students learn to carry out practical work, in the field and in the laboratory, with minimal risk. 2. They gain introductory experience in applying each of the following skills and gain greater proficiency in a selection of them
F.Y.B.Sc. Sem. - II	BO 121 Plant life and utilization II	<ol style="list-style-type: none"> 1. Understand the application, economical and biological importance of Pteridophyte, Gymnosperm & Angiosperms.
	BO 122 Principles of plant science	<ol style="list-style-type: none"> 1. To understand basic life processes & to learn structure as well as importance of biomolecules like DNA & RNA
	BO 123 Practical based on BO 121 & 122	<ol style="list-style-type: none"> 1. Practical skills: Students learn to carry out practical work, in the field and in the laboratory, with minimal risk. They gain introductory experience in applying each of the following skills and gain greater proficiency in a selection of them

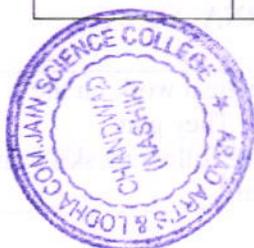


M.Sc. – Botany

Sr. No.	Course	Course outcome
M.sc I Sem.- I	BOUT 111 : Plant Systematic I	1. Understand the application, economical and biological importance of Bryophytes and Pteridophytes.
	BOUT 112: Cell Biology and Evolution	1. Knowledge of Interaction of DNA, RNA, Protein and their Biosynthesis
	BOUT 113: Cytogenetics And Plant Breeding	1. Introduction to inheritance patterns, and study of microbial genetics and Cytogenetic.
	BOUT 114: Pomoculture and Fruit Processing Technology	1. Study of commercial aspects and economic importance fruits plant cultivation, management and marketing.
M.Sc. I Sem. - II	BOUT 121: Plant Systematic II	1. Morphological, anatomical characters of Gymnosperm and angiosperm. Study of different classification system of gymnosperm and angiosperm.
	BOUT 122: Molecular Biology	1. Study of structure and properties of nucleic acids. Enzymes, vectors used in genetic engineering.
	BOUT 123: Biochemistry	1. Knowledge of fundamental process such as photosynthesis, Respiration, etc. Introduction to nitrogen metabolism, secondary metabolism.
	BOUT 124: Mushroom Cultivation And Bio pesticide Technology	1. It provides scope to bring more unused land under flower cultivation.

B. Sc. (Electronic Science)

Year	Course	Course Outcomes
F. Y. B. Sc. Sem.ester-I	Paper I: EL-111: Basics of Applied Electronics	1. To identify different parameters/functions/specifications of components used in electronic circuits 2. To solve problems based on network theorems. 3. To perform simulations using simulator for analyzing network performance
	Paper II: EL-112: Electronic Devices and Circuits	1. To analyze performance parameters based on study of characteristics of electronic devices like diode, transistors etc. 2. To choose proper electronic devices as per the need of application 3. CO3. To perform simulations for designing and analyzing diode/transistor circuits 4. To build and test the circuits like street light controller using electronic devices



F. Y. B. Sc. Sem.ester-I	EL- 113: Practical Course I	<ol style="list-style-type: none"> 1. To identify different components and devices as well as their types 2. To understand basic parameters associated with each device 3. To know operation of different instruments used in the laboratory 4. To connect circuit and do required performance analysis 5. To compare simulated and actual results of given particular experiment
F. Y. B. Sc. Sem.ester-II	Paper I: EL-121: Fundamentals of Digital Electronics	<ol style="list-style-type: none"> 1. To solve problems based on interconversion of number systems 2. To reduce the expression using Boolean theorems 3. To reduce expressions using K maps in SOP and POS forms 4. To understand how to use flip flops to build modulus counter 5. To familiarize with applications of counters like ring counter or event counter
	Paper II: EL- 122: Analog and Digital Device applications	<ol style="list-style-type: none"> 1. To compare different opamp as per specifications or performance parameters 2. To understand opamp circuits and its usefulness in different applications 3. To know operating principle of IC 555 in different configurations 4. To understand different types of DAC and their performance parameters 5. To study different types of ADC and their performance parameters
	EL- 123: Practical Course II	<ol style="list-style-type: none"> 1. To connect opamp circuits and analyze the output 2. To build application circuits of opamp 3. To design the output frequency of IC 555 as a astable /mono stable multi vibrator 4. To compare simulated and actual results of given circuit

B.Sc. Mathematics

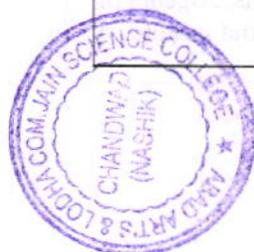
Class	Course	Course Outcome
F. Y. B.Sc. Sem.-I	MT 111 Algebra	<ol style="list-style-type: none"> 1. Understand the concepts of equivalence relation, equivalence classes, partitions of sets, functions, Types of functions, inverse and composition of functions 2. know basic facts about algebra and various forms of mathematical induction and the skill of applying a particular kind of induction for a problem, learn fundamentals of basic number theory specifically division in integers and related concept 3. study of primes, basic properties of congruence, and few celebrated results like Fermat's theorem 4. Learn the algebra of complex numbers, moduli, complex conjugates, exponential form and roots of the complex numbers ,Regions in complex plane and De-Moivre's theorem
	MT 112 Calculus-I	<ol style="list-style-type: none"> 1. Understand the algebraic and ordered properties of set of real numbers, also the completeness properties of R and why the sets of rationals is dense in R, well ordering property of natural numbers, 2. Define the sequence of real numbers with proper notations, limit of the sequence, know the uniqueness of limit of sequence, recognize convergent, divergent, bounded, monotone sequences, learn the monotone convergence theorem, subsequences and Bolzano-Wierstrass theorem 3. Understand the concepts of functions, graph of functions, limits of functions of one variable, evaluating limit of functions, Algebra of limits, some extension of limits like one-sided limit and infinite limits



F.Y.B.Sc. (Sem. II)	MT121 Analytical Geometry	<ol style="list-style-type: none"> 1. Learn the translation and rotation of axes and the basic concepts about conics in Euclidean plane 2. Understand geometry of plane, finding angles between two planes and distance of a point from plane, know the direction cosines and direction ratios, equation of plane, geometric terms about plane 3. Learn the equation of line, understand geometry of lines, finding angle between line and plane and perpendicular distance of a point from a plane, learn about the conditions for two lines coplanar 4. Learn the equation of sphere in different form, plane section of sphere, equation of circle, sphere through given circle, intersection of a sphere and line, equation of tangent plane to sphere
	MT 122 Calculus II	<ol style="list-style-type: none"> 1. Learn the definition of the derivative of a function at a point, Rules of the differentiation, chain rule, derivative of inverse function, mean value theorems 2. Understand the intermediate forms, learn the L'Hospital rules and application of L'Hospital rule, Taylor's Theorem and successive differentiation 3. Be familiar with linear first order differential equation, separable equations, learn the existence and uniqueness of solutions of differential equations 4. Learn the concept of exact differential equation, transformation of nonlinear equations to separable equations, finding the integrating factors to transform the non-exact differential equation to exact differential equation

M.Sc. Mathematics

Class	Course	Course Outcome
M.Sc. I Sem. I	MTUT-111: Linear Algebra	<ol style="list-style-type: none"> 1. Define a vector space and state its properties, compute the linear span of a set of vectors, determine the linear independence or dependence of a set of vectors, determine a basis of a vector space and compute dimension of various vector spaces 2. Define and identify linear transformations, determine matrix of given linear transformation, change of basis and its effect on corresponding matrix 3. Define and compute Eigen values and corresponding Eigen vectors, classify matrices reducible to diagonal and triangular form, write linear transformations in Jordan Canonical Form, rational form 4. Describe bilinear form, symmetric bilinear forms, quadratic forms, Hermitian forms, canonical representation of unitary operator, Euclidean space, classification of quadrics in three dimensional Euclidean space
	MTUT-112 : REAL ANALYSIS	<ol style="list-style-type: none"> 1. Find exterior measure of different sets, understand measurable functions with properties, be able to identify measurable and non-measurable functions 2. Find lebesgue integral of functions like simple function, bounded functions, nonnegative functions and the functions with fair amount of discontinuity 3. Be able to state, explain and prove standard theorems like Fatuous lemma, monotone convergence theorem, Egonov's theorem, Fubinis theorem and more 4. Describe Cantor set and its properties, space of measurable and integrable functions



	<p>MTUT- 113: Group Theory</p>	<ol style="list-style-type: none"> 1. Understand thoroughly the structure of groups with examples, find all subgroups of a given group, learn different types of groups and their significance 2. Explain the development of theory to prove fundamental theorem of cyclic groups, determine the class of cyclic groups of finite order and study some noncyclic groups 3. Understand group homomorphism and group isomorphism and use the same to classify abelian and cyclic groups of finite order 4. Demonstrate permutations and symmetries in a group theoretic context, particularly the significance of Cayley's Theorem 5. Learn different forms of Sylow theorems with applications
<p>M.Sc. I Sem. I</p>	<p>MTUT 114: Advanced Calculus</p>	<ol style="list-style-type: none"> 1. Find derivative of a scalar field with respect to a vector, directional derivative, gradient of a scalar field, derivative of a vector field, learn matrix form of chain rule and to explain Inverse function theorem and Implicit function theorem. 2. Understand the concept of work as a line integral, independence of path, explain and prove the first and the second fundamental theorems of calculus for line integral and necessary condition for a vector field to be a gradient. 3. Find double/ triple integral of functions and apply it to find area and volume, learn change of variables in double integrals, transformation formula and finally learn change of variables in n fold integral, prove the very important Green's Theorem in plane 4. Find area of a parametric surface, evaluate surface integrals, prove the theorem of Stokes, define and understand the curl and divergence of a vector field, and Gauss divergence theorem, explain applications of the divergence theorem.
	<p>MTUT 115: Ordinary Differential Equations</p>	<ol style="list-style-type: none"> 1. Distinguish between linear, nonlinear, ordinary and partial differential equations, classify linear and nonlinear ODEs 2. Find the general solutions of second degree ordinary differential equations with constant coefficients by variation of parameter method, the method of undetermined coefficients, use of known solution to find other solutions, method of reduction of order m 3. Identify ordinary, regular singular points and find the series solutions of first and second order linear differential equations, describe the Indicial equations, Gauss's Hypergeometric equation 4. Solve the system of linear and nonlinear equations with constant coefficients, use the method of linearized stability to determine the stability of critical point of planar autonomous system, state and prove the theorem of existence and uniqueness of solutions, the method of successive approximations, Picard's theorem.



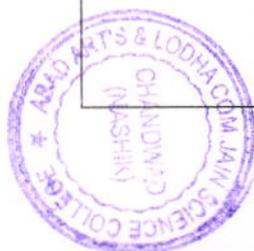
M.Sc. I (Sem. II)	MTUT- 121: Complex Analysis	<ol style="list-style-type: none"> 1. Understand the functions on complex plane, limit and continuity of functions of complex variables, explain exponential functions, trigonometric functions, logarithmic functions and its branches, hyperbolic functions, differentiating complex functions. 2. Prove Cauchy's theorem, Goursat theorem and its applications, evaluate integrals of complex values functions by Cauchy's integral formulae ,Cauchy theorem via Greens theorem , Analyticity of complex differential function, Cauchy Riemann equations ,Maximum and minimum Modules ,A Global implication - Liouville, open mapping theorem ,Swarz lemma,Jordn's inequality 3. State and explain Morera's theorem, describe sequences of holomorphic functions, holomorphic functions defined in terms of integrals, Schwarz reflection principle, Runge's approximation theorem. 4. Understand meromorphic functions, determine zeros and singularities, classification of singularities as removable, pole and essential singularity, find residues and prove the residue theorem and apply it to find integration of various functions, Laurent series.
	MTUT-122 : General Topology	<ol style="list-style-type: none"> 1. Understand the terms countable and uncountable sets, infinite sets, the axiom of choice, continuum hypothesis, well-ordered sets, the maximum principle, basis for topology, order topology, continuous functions, product topology, Metric topology, quotient topology, Subspace topology ,closed sets ,limit points ,limit point compactness ,local compactness ,connected spaces 2. Demonstrate knowledge and understanding of concepts such as connectedness and compactness, prove theorem on compactness, behaviour of continuous functions on compact and connect sets, understand the phenomenon of one point compactification 3. Learn how a metric generates topology, understand metrizable spaces and prove related results including the Urysohn motorization theorem 4. Explain the countability axioms, separation axioms, normal spaces, the Urysohn lemma, Tychonoff theorem, completely regular spaces.
	MTUT-123 : Ring Theory	<ol style="list-style-type: none"> 1. Understand the algebraic structure of rings with examples, describe matrix ring, polynomial ring, ring of power series , ring of Laurent series, Boolean rings, opposite rings some special rings ,Rings of continues functions several variables ,characteristics of a ring ,generators ,basic properties of ideal ,algebra of ideals . 2. Define and explain the substructures of ring like subrings, ideals, maximal ideal, quotient rings, local rings 3. Understand the concept of ring homomorphism, determine if the two rings are homomorphic/isomorphic, explain fundamental theorem of homomorphism and its applications 4. Describe the Euclidean domain, principle ideal domain, factorization domain, unique factorization domain , Eisenstein's criterion , division in domain ,field of fraction , prime ideal 5. Determine if the given polynomial is irreducible over a given ring/field using various irreducibility criteria, understand definitions and examples of modules, Free modules ,quotient modules and module homeomorphisms ,simple modules ,modules over PID'S, direct sum.



	MTUT-124: Advance Numerical Analysis	<ol style="list-style-type: none"> 1. Find roots of given equations by different methods e.g. fixed point interaction schemes, Newton's method, secant method, accelerating convergence 2. Solve system of linear equations by applying Gaussian elimination, pivoting strategies, errors estimates and condition number, LU decomposition, direct Factorization, iterative techniques for linear systems 3. Find Eigen values and Eigen vectors by the power method, the inverse power method, reduction to symmetric tridiagonal form also find eigenvalues of symmetric tridiagonal matrices. 4. Evaluate integration by Newton-Cotes Quadrature, Composite Newton-Cotes Quadrature and find the derivate of a function at a given point by applying Newton-Cotes Quadrature, Composite Newton-Cotes Quadrature. 5. Solve initial value problems of ordinary differential equations Euler's Method Higher order, method, Runge-Kutta Methods, Multistep Methods, Convergence and Stability Analysis.
M.Sc. I (Sem. II)	MTUT-125 : Partial Differential Equations	<ol style="list-style-type: none"> 1. Explain clearly concepts and theory of basic methods for solving partial differential equations. Compatible system, char pit's method, Jacobis method, non-linear first order pde, General method Canonical Forms, Canonical Form for Hyperbolic Equation, for Parabolic Equation, Canonical Form for Elliptic Equations with Constant Coefficients, General Method for Finding CF of Reducible Non-homogeneous Linear PDE, General Method to Find CF of Irreducible Non-homogeneous Linear PDE 2. Recognize the types of second-order partial differential equations as the wave equation, heat equation and Laplace equation, and explain their solutions, Boundary Value Problems (BVPs) Green's first and second identities, Dirichlet Problem for a Rectangle, Occurrence of the Diffusion Equation, Boundary Conditions, Elementary Solutions of the Diffusion Equation, Dirac Delta Function, Separation of Variables Method (with examples) 3. Apply Eigen function expansion methods to solve nonhomogeneous versions of heat and wave equations. Occurrence of the Wave Equation, Derivation of One-dimensional Wave Equation Solution of One-dimensional Wave Equation by Canonical Reduction, Vibrating string- Variable separable solution(examples) 4. Recognize the concept of a Green function and its applications in solving non-homogeneous problems and elementary boundary value problems

B.Sc. - Physics

Class	Course	Course Outcomes
F. Y. B. Sc. Sem. I	(PHY 111) Mechanics and properties of matter	<ol style="list-style-type: none"> 1. An understanding of Newton's laws of motion and applying them in calculations of the Motion of simple systems. 2. Understanding the concepts of work, energy and power. 3. Understanding of the concepts of conservation of energy, liquid properties such as surface tension and viscosity the concepts of elasticity and be able to perform calculations using them. 4. Understanding the concept of atmospheric pressure, Bernoulli's principle and venturimeter. 5. Demo stating quantitative problem solving skills in all the topic covered.



F. Y. B. Sc. Sem. I	(PHY112) Physics Principles & Applications (2 credit)	<ol style="list-style-type: none"> 1. Understanding of the various atomic theories and calculation of energy value of atom. 2. Understanding of electromagnetic waves and its spectrum, types and sources of electromagnetic waves and applications 3. The general structure of atom, spectrum of hydrogen atom. 4. Understanding of the atomic excitation and LASER principles. Different bonding between in atoms and molecules.
F. Y. B. Sc. Sem. I	(PHY113) Physics lab IA(1.5 Credit)	<ol style="list-style-type: none"> 1. Exposure of techniques of handling simple instruments and also certain mechanical and thermal properties of matter. 2. Acquire technical and manipulative skills in using laboratory equipment, tools, and materials. 3. Demonstrate an ability to collect data through observation and/or experimentation and interpreting data. 4. Demonstrate an understanding of laboratory procedures including safety, and scientific methods. 5. Acquire the complementary skills of collaborative learning and teamwork in laboratory settings.
F. Y. B. Sc. (Sem. II)	(PHY 121) Heat and Thermodyna mics (2 credit)	<ol style="list-style-type: none"> 1. Understanding of the: properties and relationships between the thermodynamic properties of a pure substance ideal gas equation and its limitations and real gas. 2. The laws of thermodynamics to formulate the relations necessary to analyze a thermodynamic process, heat engines and calculate thermal efficiency. 3. Analyze the refrigerators and heat pumps and calculate coefficient of performance. 4. Understanding the property ENTROPY and derive some thermodynamically relations. 5. Understanding the types of thermometer and their usages.
F. Y. B. Sc. (Sem. II)	(PHY 122) Electricity and magnetism (2 Credits)	<ol style="list-style-type: none"> 1. Exposure to the fundamental laws of electricity, magnetism and their applications in day to day life. 2. Making the awareness to students about Gauss's law, Coulomb's Law, Biot-Savart's law and Ampere's law. 3. Development of understanding among the students about principles of electromagnetic induction and magnetic induction. 4. Knowledge about the basics of magneto static and magnetization of material.
F. Y. B. Sc. (Sem. II)	(PHY123) Physics lab IB(1.5 Credit)	<ol style="list-style-type: none"> 1. Exposure of techniques of handling simple instruments and also certain mechanical and thermal properties of matter. 2. Acquire technical and manipulative skills in using laboratory equipment, tools, and materials. 3. Demonstrate an ability to collect data through observation and/or experimentation and interpreting data. 4. Demonstrate an understanding of laboratory procedures including safety, and scientific methods. 5. Acquire the complementary skills of collaborative learning and teamwork in laboratory settings.



M.Sc. - Physics

Class	Course	Course Outcome
M. Sc. I Sem. I	(PHCT 111) Mathematical Methods in Physics	<ol style="list-style-type: none"> 1. Use mathematical formulations, analyses and models to obtain insight in specialized areas of Physics. 2. Be able to apply skills of mathematical, statistical and physical modeling in applied fields and on technological problems. 3. Be able to carry out, present and document a comprehensive independent work, demonstrating command of the terminology of the subject area. 4. Identify different special mathematical functions. 5. Apply techniques of vector analysis, such as gradient of scalar, divergence of vector, curl of vector, 6. Study of special functions of mathematical physics 7. Understanding of Cartesian (X, Y, Z), Spherical polar (r, θ, ϕ) and Cylindrical (ρ, ϕ, z) co-ordinate systems and their transformation equations. 8. To understand the concept of complex number, function. 9. To find the analytical functions, Integrals of complex functions and using residues
M. Sc. I Sem. I	(PHCT 112) Classical mechanics	<ol style="list-style-type: none"> 1. To understand the Langrangian and Hamiltonian dynamics. 2. To perform canonical transformations & solving poisson's brackets. 3. Formation of langrangian of motion under central force. 4. To understand the dynamics of rigid body and small oscillations.
	(PHCT 113) Quantum Mechanics	<ol style="list-style-type: none"> 1. The outcome of the course on Quantum Mechanics is to introduce the students to the formal structure of the subject. 2. Equip the students with the techniques of angular momentum, perturbation theory and scattering theory so that they can use these in various branches of physics as per their requirement 3. To understand Schrodinger wave equation and probability interpretation.
	(PHCT 114) Electronics	<ol style="list-style-type: none"> 1. To understand the working of Semiconductor devices and its applications. 2. To understand the Integrated circuits like 555,741,565,566 and their applications. 3. To understand the Digital logic circuits. To understand the data converters like ADC and DAC.
	(PHCP 115) Physics Lab. I	<ol style="list-style-type: none"> 1. In earlier classes and develop confidence to handle sophisticated equipment. 2. To built and understand the working of simple electronic circuits. 3. To understand the working of gates, switches, power sources and loops. 4. To get knowledge of IC 741 as op-amp, Filters and Trigger.
M. Sc. I Sem. II	(PHCT 121) Electrodynam ics	<ol style="list-style-type: none"> 1. The Classical Electrodynamics course covers Electrostatics and 2. Magneto statics including Boundary value problems. 3. Maxwell equations and their applications to propagation of electromagnetic waves in dielectrics, metals and plasma media. 4. EM waves in bounded media, waveguides, Radiation from time varying sources. 5. It also covers motions of relativistic and nonrelativistic charged particles in electrostatic and magnetic fields.



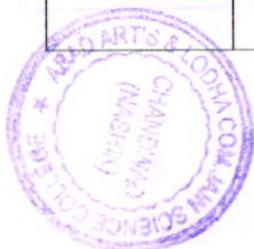
Sem. I	CHA-190 General Chemistry	<ol style="list-style-type: none"> 1. Study the importance of safety and security, responsibility types of hazards and risk in chemical laboratory. 2. Understand the use of personal protective and other safety equipments, handling of chemical in laboratory. 3. Understand the route of explores for toxic chemicals. 4. Learn good laboratory practices and its applications.
Sem. II	CHP-210 Physical Chemistry	<ol style="list-style-type: none"> 1. Learn the thermodynamic description of exact, inexact differential and state function. 2. Know the qualitative properties of solution, the depression in freezing point, elevation in boiling point and osmotic pressure. 3. Know statistical thermodynamics and various partition functions. 4. Study the steady state approximation Michaelis-Menten mechanism, Lindemann-Hinshelwood mechanism, chain reaction, Rate determining steps and consecutive elementary reactions. 5. Learn the molecular spectroscopy, R. Raman, Electronic and Mossbauer and its application.
Sem. II	CHI-230 Inorganic Chemistry	<ol style="list-style-type: none"> 1. Understand the mechanism in transition metal complexes, Born Haber cycle to calculate lattice energy. 2. Learn use of catalyst, radius ratio rule of coordination number 3, 4. 3. Study the structure of atom, Hund's rule, term symbol, calculation of microstate and selection rule. 4. Understand the metal complexes in biological system.
Sem. II	CHO-250 Reaction, synthetic Organic Chemistry & spectroscopy	<ol style="list-style-type: none"> 1. Study the various named reactions with examples. 2. Learn the mechanism of rearrangement reaction, use synthetic reagent of oxidation and reduction for solving the problems. 3. Understand the factors affecting UV-absorption spectra, Interpret IR-spectra on basic values of IR-frequencies. 4. Discuss the problem of UV, IR and NMR.
Sem. II	CHA-290 General Chemistry	<ol style="list-style-type: none"> 1. Study instrumentation, sample injection system, columns for HPLC and GC, Solvent treatment system & choice of mobile phase. 2. Learn instrumentation of mass spectrometry, fragmentation, structural determination. 3. Solve mean and standard deviation problems. 4. Understand the accuracy and precision and classification error. 5. Learn distillation, solvent extraction, crystallization, and other separation techniques.
Sem. II	CHP-107 Physical chemistry practical's	<ol style="list-style-type: none"> 1. Calculate molar and normal solution of various concentrations. 2. Determine specific rotations and percentage of optically active substances by polarimetry. 3. Study the energy of activation and second order reaction. 4. Study the stability of complex ion and standard free energy change and equilibrium constant by potentiometry. 5. Find out the acidity, Basicity and PKa Value on pH meter.
Sem. II	CHI-147 Inorganic chemistry practical's	<ol style="list-style-type: none"> 1. Study the gravimetric and volumetric analysis of ores and alloy. 2. Prepare various inorganic complexes and determine its % purity. 3. Preparation of nonmaterial. 4. To understand the chromatographic techniques.
Sem. II	CHO-247 Organic chemistry practical's	<ol style="list-style-type: none"> 1. Perform the ternary mixtures. 2. Preparation of organic compounds, their purifications and run TLC. 3. Determination of physical constant: Melting point, Boiling point. 4. Different separation techniques.



M. Sc. I Sem. II	(PHUT 122) Solid state physics	<ol style="list-style-type: none"> 1. The outcome of the course on solid state physics is to familiarize the students with relatively advanced topics. 2. Optical properties, magnetism, superconductivity, magnetic resonance techniques. 3. Disordered solids confident to use the relevant techniques in their later career.
M. Sc. I Sem. II	(PHUT123) Statistical mechanics in physics	<ol style="list-style-type: none"> 1. The outcome of the course on Statistical Mechanics to expose students to the theoretical techniques 2. Understanding the interacting systems, phase transitions and the non-equilibrium phenomena. 3. Application in different branches of physics, chemistry and biology.
M. Sc. I Sem. II	(PHDT124) Atoms and Molecules	<ol style="list-style-type: none"> 1. Knowledge of the observed dependence of atomic spectral lines on externally applied electric and magnetic fields. 2. The main outcome of this course is to state and justify the selection rules for various optical spectroscopies in terms of the symmetries of molecular vibrations. 3. List different types of atomic and molecular spectra and related instrumentation.
M. Sc. I Sem. II	(PHUP 125) Physics Lab. II	<ol style="list-style-type: none"> 1. The outcome of the course on Statistical Mechanics is to equip the M.Sc. student. 2. The techniques of Ensemble theory so that he/she can use these to understand the macroscopic properties of the matter in bulk in terms of its microscopic constituents. 3. In earlier classes and develop confidence to handle sophisticated equipment 4. Familiarization with the basics of materials science. 5. Understanding of the fundamentals of Hall effect and Hysteresis.

B.Sc. - Chemistry

Class	Course	Course Outcomes
F.Y.B.Sc. Sem. - I	CH- 101: Physical Chemistry	<ol style="list-style-type: none"> 1. Students will be able to apply thermodynamic principles to physical and chemical process 2. Third law of thermodynamic and its applications 3. Knowledge of Chemical equilibrium will make students to understand, Relation between Free energy and equilibrium and factors affecting on equilibrium constant. Exergonic and endergonic reaction. Gas equilibrium, equilibrium constant and molecular interpretation of equilibrium constant. Van't Haff equation and its application 4. Ionic equilibria chapter will lead students to understand, Concept to ionization process occurred in acids, bases and pH scale, Related concepts such as Common ion effect hydrolysis constant, ionic product, solubility product, Degree of hydrolysis and pH for different salts, buffer solutions
F.Y.B.Sc. Sem. - I	CH- 102: Organic Chemistry	<ol style="list-style-type: none"> 1. The students are expected to understand the fundamentals, principles, and recent developments in the subject area. 2. It is expected to inspire and boost interest of the students towards chemistry as the main subject. 3. To familiarize with current and recent developments in Chemistry. 4. To create foundation for research and development in Chemistry.



F.Y.B.Sc. Sem. - I	CH- 103: Chemistry Practical Course	<ol style="list-style-type: none"> 1. Importance of chemical safety and Lab safety while performing experiments in laboratory 2. Determination of thermos chemical parameters and related concepts 3. Students should learn Techniques of pH measurements 4. Student should learn Preparation of buffer solutions 5. Student should learn Elemental analysis of organic compounds (non instrumental) 6. Student should learn Chromatographic Techniques for separation of constituents of mixtures
F.Y.B.Sc. Sem. - II	CH- 202: Analytical Chemistry	<ol style="list-style-type: none"> 1. Student should learn Calculations of mole, molar concentrations and various units of concentrations which will be helpful for preparation of solution, Relation between molecular formula and empirical formula, Stoichiometric calculation 2. Define term mole, mill mole, molar concentration, molar equilibrium concentration and Percent Concentration. 3. SI units, distinction between mass and weight, Units. 4. Student should learn, pH meter and electrodes for pH measurement, working of pH meter, Applications of pH meter. 5. Student should learn Basics of chromatography and types of chromatography, Paper and Thin Layer Chromatography.
F.Y.B.Sc. Sem. - II	CH- 203: Chemistry Practical –II	<ol style="list-style-type: none"> 1. Inorganic Estimations using volumetric analysis 2. Synthesis of Inorganic compounds 3. Analysis of commercial products 4. Purification of organic compounds 5. Preparations and mechanism of reactions involved

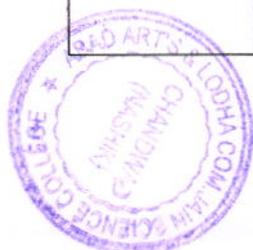
M. Sc. Analytical Chemistry

Class	Course	Course Outcomes
Sem. I	CHP-110 Physical Chemistry	<ol style="list-style-type: none"> 1. Realize the terms ionic strength, activity coefficient, DHO equation. 2. Know the Eigen function, Eigen value, operator and postulates of quantum mechanics. 3. Learn two and three dimensional box, mechanics of particle. 4. Understand the adsorption of gases by solid type of isotherms 5. Recognized the Fricke and ceric sulphate Dosimeter. 6. Learn parent-daughter relationship, application of radioactivity, NAA, IDA. Effect of radiation and units of radiation.
Sem. I	CHI-130 Inorganic Chemistry	<ol style="list-style-type: none"> 1. Determine and Learn about Dipole moment and bond order of the inorganic molecule. 2. Learn about geometry and shape of the molecule. 3. Known preparation & properties of transition metal carbonyls 4. To understand the 18 electron rule and its application. 5. Find out the point group of inorganic molecules. 6. Learn molecular orbital and its orientation. 7. Learn concept of symmetry elements in molecules.
Sem. I	CHO-150 Organic Chemistry	<ol style="list-style-type: none"> 1. Learn SN1, SN2 and SNi Mechanism and stereochemistry. 2. Learn classical and non-classical carbocation, NGP by pi and sigma bonds. 3. Solve the elimination problems. 4. Distinguish betⁿ type of addition, elimination & substitution reaction. 5. Learn E and Z nomenclature in C,N,S,P containing compound ,Stereochemical principal, enantiomeric relationship R and S.



M. Sc. Organic Chemistry

Class	Course	Course Outcomes
M. Sc. Sem. - I	CHP-110 Physical Chemistry	<ol style="list-style-type: none"> 1. Realize the terms ionic strength, activity coefficient, DHO equation. 2. Know the Eigen function, Eigen value, operator and postulates of quantum mechanics. 3. Learn two and three dimensional box, mechanics of particle. 4. Understand the adsorption of gases by solid type of isotherms 5. Recognized the Fricke and ceric sulphate Dosimeter. 6. Learn parent-daughter relationship, application of radioactivity, NAA, IDA. Effect of radiation and units of radiation.
M. Sc. Sem. - I	CHI-130 Inorganic Chemistry	<ol style="list-style-type: none"> 1. Determine and Learn about Dipole moment and bond order of the inorganic molecule. 2. Learn about geometry and shape of the molecule. 3. Known the preparation and properties of transition metal carbonyls 4. To understand the 18 electron rule and its application. 5. Find out the point group of inorganic molecules. 6. Learn molecular orbital and its orientation. 7. Learn concept of symmetry elements in molecules.
M. Sc. Sem. - I	CHO-150 Organic Chemistry	<ol style="list-style-type: none"> 1. Learn SN1, SN2 and SNi Mechanism and stereochemistry. 2. Learn classical & non-classical carbocation, NGP by pi & sigma bonds. 3. Solve the elimination problems. 4. Distinguish between type of addition, elimination and substitution reaction. 5. Learn E and Z nomenclature in C,N,S,P containing compound ,Stereo chemical principal, enantiomeric relationship R and S.
M. Sc. Sem. - I	CHA-190 General Chemistry	<ol style="list-style-type: none"> 1. Study the importance of safety and security, responsibility types of hazards and risk in chemical laboratory. 2. Understand the use of personal protective and other safety equipments, handling of chemical in laboratory. 3. Understand the route of explores for toxic chemicals. 4. Learn good laboratory practices and its applications.
M. Sc. Sem. - II	CHP-210 Physical Chemistry	<ol style="list-style-type: none"> 1. Learn the thermodynamic description of exact, inexact differential and state function. 2. Know the qualitative properties of solution, the depression in freezing point, elevation in boiling point and osmotic pressure. 3. Know the statistical thermodynamics & various partition functions. 4. Study the steady state approximation Michaelis-menten mechanism, Lindemann-Hinshelwood mechanism, chain reaction, Rate determining steps and consecutive elementary reactions. 5. Learn the molecular spectroscopy, R.Raman, Electronic and Mossbauer and its application.
M. Sc. Sem. - II	CHI-230 Inorganic Chemistry	<ol style="list-style-type: none"> 1. Understand the mechanism in transition metal complexes, Born Haber cycle to calculate lattice energy. 2. Learn use of catalyst, radius ratio rule of coordination number 3,4. 3. Study the structure of atom, Hund's rule, term symbol, calculation of microstate and selection rule. 4. Understand the metal complexes in biological system.
M. Sc. Sem. - II	CHO-250 Reaction ,synthetic Organic Chemistry & spectroscopy	<ol style="list-style-type: none"> 1. Study the various name reactions with examples. 2. Learn the mechanism of rearrangement reaction, use synthetic reagent of oxidation and reduction for solving the problems. 3. Understand the factors affecting UV-absorption spectra, Interpret IR-spectra on basic values of IR-frequencies. 4. Discuss the problem of UV, IR and NMR.



M. Sc. Sem. - II	CHA-290 General Chemistry	<ol style="list-style-type: none"> 1. Study the instrumentation, sample injection system, columns for HPLC and GC, Solvent treatment system & choice of mobile phase. 2. Learn instrumentation of mass spectrometry, fragmentation, structure determination. 3. Solve mean and standard deviation problems. 4. Understand the accuracy and precision and classification error. 5. Learn distillation, solvent extraction, crystal. Separation techniques.
M. Sc. Sem. - II	CHP-107 Physical chemistry practical	<ol style="list-style-type: none"> 1. Calculate molar and normal solution of various concentrations. 2. Determine specific rotations and percentage of too optically active substances by polarimetrically. 3. Study the energy of activation and second order reaction. 4. Study the stability of complex ion and stranded free energy change and equilibrium constant by potentiometry. 5. Find out the acidity, Basicity and PKa Value on pH meter.
M. Sc. Sem. - II	CHI-147 Inorganic chemistry practical	<ol style="list-style-type: none"> 1. Study the gravimetric and volumetric analysis of ores and alloy. 2. Prepare a various inorganic complexes and determine its % purity. 3. Preparation of nanomaterial. 4. To understand the chromatographic techniques.
M. Sc. Sem. - II	CHO-247 Organic chemistry practical	<ol style="list-style-type: none"> 1. Perform the ternary mixtures. 2. Preparation of organic compounds, their purifications and run TLC. 3. Determination of physical constant: Melting point, Boiling point. 4. Different separation techniques.

B. Sc. (Zoology)

Class	Course	Course Outcomes
F. Y. B. Sc. Sem. I	Paper I: ZO-111: Animal Diversity -I	<ol style="list-style-type: none"> 1. Students are expected to have knowledge of Animal diversity 2. To understand classify and identify the diversity of animals 3. To understands the importance of classification of animals and classifies them effectively using the six levels of classification. 4. The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life.
	Paper II: ZO-112: Animal Ecology	<ol style="list-style-type: none"> 1. To identify and critically evaluate their own beliefs, values and actions in relation to professional and societal standards of ethics and its impact on ecosystem 2. To understand anticipate, analyse and evaluate natural resource issues 3. To understand the local lifestyle and problems of the community. 4. The working in nature to save environment will help development of leadership skills to promote betterment of environment.
	ZO-113: Zoology Practical Paper	<ol style="list-style-type: none"> 1. Practical course is framed with basic information of primitive highly evolved animal group. 2. The practical course gives detailed knowledge of the Classification and Nomenclature systems
F. Y. B. Sc. Sem. II	Paper I: ZO-121: Animal Diversity II	<ol style="list-style-type: none"> 1. To understand classify and identify the diversity of animals 2. To understands the importance of classification of animals and classifies them effectively using the six levels of classification. 3. The student knows his role in nature as a protector, preserver and promoter of life which he has achieved by learning, observing and understanding life.



	Paper II: ZO-122: Cell Biology	<ol style="list-style-type: none"> 1. To understand the importance of cell as a structural and functional unit of life. 2. To understand and compare between the prokaryotic and eukaryotic system and extrapolates the life to the aspect of development. 3. The cellular mechanisms and its functioning depends on endo-membranes and structures. They are best studied with microscopy.
	ZO- 123: Zoology Practical Paper	<ol style="list-style-type: none"> 1. CO-1. Practical course is framed with basic information of primitive highly evolved animal group. 2. CO-2. The practical course gives detailed knowledge of the Classification and Nomenclature systems

M. Sc. (Zoology)

Class	Course	Course Outcomes
M. Sc. Sem. I	ZOUT112: Cell Biology and Development al Biology	<ol style="list-style-type: none"> 1. Label the various cell parts 2. Define the terms in developmental biology 3. Sketch and label various types of cells and cell organelles. 4. Illustrate the chemistry and organization of cytoskeleton. 5. Compare and contrast spermatogenesis and oogenesis
	ZOUT113: Genetics and English in Scientific Communicati on.	<ol style="list-style-type: none"> 1. Define the basic terminologies in genetics. & identify genetic disorders based on Karyotypes and traits. 2. Write the outline of a scientific paper. & Write the title, abstract, discussion and citations of a given scientific article. 3. Explain the concept of Mendelian genetics, gene, gene regulation and multiple alleles. & illustrate the modified Mendelian laws of inheritance. 4. Explain language as a tool for effective scientific communication. & justify the importance of plagiarism check and Proof-read given article.
	ZODT 114 Biostatistics	<ol style="list-style-type: none"> 1. Explain the application of sampling in biological sciences. & explain standard Probability distributions. 2. Explain the concept and types of central tendency. & explain the concept of correlation and regression with their properties. 3. Illustrate the measures of dispersion with examples. & solve statistical problems.
	ZODP 114 Practical Biostatistics.	<ol style="list-style-type: none"> 1. Construct frequency distribution chart. 2. Graphically represent the given data. 3. Solve the statistical problems based on Central Tendency, Dispersion, and Correlation and regression. 4. Apply computer software for statistical analysis. 5. Solve numerical problems on test of hypothesis using biological data.



M. Sc. Sem. I	ZOUP 115 Basic Zoology Lab-1.	<ol style="list-style-type: none"> 1. Identify the developmental stages of chick embryo, cell structures and phases of cell division 2. Identify the grammatical mistakes from the given paragraph and common errors in written and spoken presentations. 3. Write a scientific project and research article along with its proof reading. & Demonstrate the working of different microscopes, colorimetric and spectrophotometric methods, cell fractionation and ligature in <i>Drosophila</i> larvae, 4. Determine the gene distance and order, genotype and phenotype ratios and allelic frequencies from the given data. 5. Estimate sugar and protein by suitable biochemical method, and isolate protein from biological source. 6. Prepare acid and base solutions of desired strength, buffers, bacterial Culture, chick embryo culture and <i>Drosophila</i> culture. 7. Prepare temporary slide of various cells to demonstrate the cell morphology and cell division, giant chromosome and pedigree analysis chart. & calculate % retention and % elution of amino acids on given ion exchanger.
M. Sc. Sem. II	ZOUT121: Molecular Biology and Bioinformatics	<ol style="list-style-type: none"> 1. Explain the DNA structure & types, topology, Physical properties; chromatin structure and organization. 2. Discuss genome organization, DNA and Protein sequencing with their application in evolutionary studies. 3. Explain the mobile DNA elements. 4. Explain mechanism of DNA damage and repair. 5. Illustrate the process of DNA replication, transcription, translation and their regulations. 6. Illustrate the database tools with their significance. 7. Schematically represent the processes of central dogma. 8. Justify the post translational and post transcriptional modifications
	ZOUT122: Endocrinology and Parasitology.	<ol style="list-style-type: none"> 1. Discuss the roles of Pituitary gland and pineal body. 2. Explain hormonal regulation of biomolecules and mineral metabolism. 3. Describe the role of osmo regulatory and gastrointestinal hormones. 4. Explain the role of hormones in mounting, change in body colour of crustaceans; yolk synthesis in amphibians; insect development. 5. Explain the hormonal regulation of metabolism. 6. Illustrate the mechanism of hormone action and role of hormone receptors. 7. Justify hormones as coordination molecules. 8. Justify the significance of biological clocks and rhythms.
	ZOUT123: Comparative Animal Physiology & Environmental Biology.	<ol style="list-style-type: none"> 1. Explain the physiology of processes like digestion, respiration, muscle contraction and excretion. 2. Describe the mechanism of thermoregulation in both poikilotherms and homeotherms. 3. Explain the mechanism of chemical communication in vertebrates. 4. Comment on the structure and functions of various sense organs. 5. Illustrate the concept of osmotic regulation in various animals with suitable examples. 6. Compare the physiology of regulatory mechanisms in various groups of animals. 7. Justify the evolution of various life processes in living forms.



M. Sc. Sem. II	ZODT124: Metabolic Pathways.	<ol style="list-style-type: none"> 1. Define basic terminologies of metabolic pathways. 2. Explain the laws of thermodynamics, concept of free energy and ATP as currency molecule. 3. Describe the Concepts and regulation of metabolism. 4. Discuss the oxidation of fatty acids and its significance. 5. Illustrate the electron transport chain and oxidative phosphorylation. 6. Illustrate the reactions, energetics and regulation of glycolysis, glycogen biosynthesis, TCA cycle, Purine and Pyrimidine metabolism 7. Write the general reactions of various metabolic pathways. 8. Justify the role of enzymes in metabolism
	ZODP 124: Practical in Metabolic Pathways.	<ol style="list-style-type: none"> 1. Identify the common diseases/conditions caused due to errors in metabolism. 2. Explain the principle of Colorimetry and Spectrophotometry. 3. Use the basic equipment in biochemistry lab. 4. Illustrate the enzyme activity from suitable material. 5. Demonstrate the effect of various physical and chemical factors on enzyme activity. 6. Demonstrate the absorption studies of biomolecules
	ZOUP 125 Basic Zoology Lab-2 (Compulsory Course)	<ol style="list-style-type: none"> 1. Identify the various parasites and parasitic stages of common parasites, nitrogenous waste products of animals, freshwater planktons and slides of endocrine glands. 2. Explain the principle and significance of gonadectomy, thyroidectomy and pancreatotomy. 3. Demonstrate the role of eye stalk and insulin in sugar level in crab. 4. Demonstrate the retro cerebral complex in cockroach. 5. Demonstrate the RBCs of common vertebrates and effect of various osmolality's. 6. Demonstrate the effect of body size, oxygen consumption and Insulin on aquatic animal. 7. Determine the bleeding and clotting time, heartbeat of crab, species richness in selected area, physico- chemical properties of soil and water. 8. Perform Sterilization of lab equipment, prepare microbial culture, Isolate Bacterial, liver DNA and RNA from given sample, quantify and resolve them using electrophoretic procedures, analyses protein sample by PAGE and SDS PAGE and construct phylogenetic tree using tools in bioinformatics.



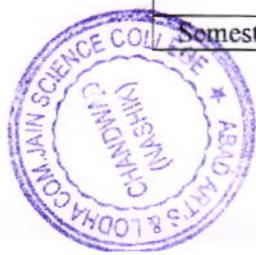
Bachelor of Vocational Courses

B. Voc. (Renewable Energy & Management)

First Year	Course	Course Outcomes
Semester I	Introduction to Renewable Energy Sources	1. Get knowledge of various forms of energy sources
	Basics Electronics	1. Understand overall energy demand and availability of energy sources to meet these demands
	Basic Physics	1. Understand science behind various energy sources
	Practical – I (Life Skills and Software Tools)	1. Understand science behind various energy sources
	Practical – II (Based on Theory)	1. This course develops practical skills among the student, which leads to develop their knowledge of analog circuits in different applications.
Semester II	Sustainable Development and Energy	1. This semester is designed to make students familiar with sustainable development
Semester II	Applications of Solar Energy	1. The student will learn solar energy and its conversion
	Bio-Energy	1. Student will understand photovoltaics and photo thermal applications of solar energy
	Practical – III (Industrial Training & Field Work)	1. Understand the biogas systems and biofuels
	Practical – IV (Based on Theory)	1. Through project and field work, student is expected to acquire practical skills necessary in the industry

B. Voc. (Green House Management)

Class	Course	Course Outcomes
Semester - I Skill Components	Soil Science	On completion of this semester students will be expected to
	Soil Cultivation	1. Get knowledge of various forms of cultivation practices of vegetable, fruits etc.
	Propagation Techniques-I	1. Students will get idea about role of soil and soil science in the cultivation of different kinds of plants
	Propagation Techniques-II	1. Understand science behind the every small thing which is necessary for the overall growth of plants
	Practical: (Based on Theory)	1. Practical based on the theory will expertise in the studied courses
General Education Component	Communication Skills-I	1. General communication skill will enhance the ability and will help in marketing as well overall personality development
	Basics of Plant Biology- I	1. General components are necessary to understand the need of plant biology in overall understanding of the cultivated plants.
	Nursery Operations-I	1. Nursery operation focuses on the overall nursery development and its role in the development of healthy plantlets
	Practicals	1. Practical based on theory of General Education Component
Semester -II	Green House	1. This semester is designed to make students familiar with sustainable



Skill Components	Construction	development in green house management
	Green House Management Basics-I	1. The student will study construction of green house with its basics
	Green House Management Basics-II	1. Students will have direct management practice and study of its overall management
	Economics of Green House Setup	2. Setup of green house is the basic which can be understood by studying economics of greenhouse setup
General Education Component	Practicals based on theory of Skill Component	1. Through project and field work, student is expected to acquire practical skills necessary in the industry 2. Practical based on the theory will easy mode of understanding
	Communication Skills-II	1. It will help for the personality development and marketing skill
	Basics of Plant Biology- II	1. Basics of plant biology is focused on growth and development of the plants
	Nursery Operations-II	1. Nursery operation focuses on the overall nursery development and its role in the development of healthy plantlets
	Practicals based on theory of General Education	1. Practical will give direct hands on application in all the studied theory courses.

B. Voc. Analytical Techniques in Pharmaceutical Analysis

Class	Course	Course Outcomes
Semester-I	General components	1. Learn general language communication and personality development skills 2. Explore laboratory results in graphical manner by using knowledge of applied mathematics 3. Take precautions in laboratory while handling the chemicals and utilities by learning basics of environmental science. 4. Understand theoretical skills regarding sample testing
	Skill components	1. Understand correction & correlation of analytical data 2. Find out errors & deviation in analysis results 3. Sort out problems associated with various titrations. 4. Do permutations & combinations of molar values by using Mole Concepts. 5. Work on various modern equipments e.g. Karl-Fischer autotitrator 6. Do practical of pharmaceutical products.
Semester-II	General components	1. Learn basics in computer language and tools. 2. Understand polymer chemistry and commercial polymers like resins, Silicon polymers, Nylon, Rubber etc. 3. Solve the problems regarding numerical & computer programming. 4. Understand theoretical skills regarding chemistry software like Chem-draw, ISI draw etc.



Semester-II	Skill components	<ol style="list-style-type: none"> 1. Capture strong theoretical knowledge of basics in molecular & atomic spectroscopy 2. Learn theoretical aspects of modern spectroscopic techniques like Infra-red & UV-Visible spectroscopy 3. Workout analysis of Organic Compounds using premier Qualitative & Quantitative methods of analysis. 4. Do titrations using Instrument like pH meter, Conductometer, Refractometer etc. 5. Deal with sophisticated instrument e.g. HPLC, IR, UV-Visible spectrometer etc.
-------------	------------------	---

Community College - D.M.L.T.

Class	Course	Course Outcomes
D.M.L.T.	Paper I: Anatomy & Physiology	<ol style="list-style-type: none"> 1. Helps in understanding the structural peculiarities of the circulatory system, excretory system, respiratory system, endocrine system, arterial system, venous system. 2. It also helps in understanding the Blood Morphology, Chemistry & Function. 3. After completion of this course students will hands-on over the Preparation of various kinds of Solutions like Percent Solution, Saturated Solution, and Buffer Solution.
	Paper II Histopathology & Clinical Pathology	<ol style="list-style-type: none"> 1. Within these course students concepts of cell and tissues are cleared. 2. Histopathology refers to the microscopic examination of tissue in order to study the manifestations of disease. 3. Clinical pathology supports the diagnosis of disease using laboratory testing of blood and other bodily fluids like semen, stool, urine and Microscopic evaluation of individual cells.
	Paper III Biochemistry	<ol style="list-style-type: none"> 1. After the completion of this course students are able to do all types of biochemical test like Estimation of blood glucose level, blood urea level, serum creatinine, serum calcium alkaline phosphates lipid profile test, liver profile test etc. 2. Study of Laboratory Equipment glassware, chemicals, other laboratory materials etc. 3. To understand the basic concepts of Quality control, Management and Laboratory Ethics
	Paper IV Microbiology	<ol style="list-style-type: none"> 1. To study of Microscope – Types, Uses & Care. 2. To study the various type of micro-organisms eg. Bacteria, viruses. 3. To Study General Characters & Classification of bacteria & Fungi and Antigen Antibody reactions. 4. Principle of Staining methods & Preparation of reagents
	Paper V Hematology & Blood Banking	<ol style="list-style-type: none"> 1. To study the morphology of cells 2. To study the blood bank techniques & blood collection methods
	Paper VI Communication Skills & Personality Development	<ol style="list-style-type: none"> 1. To improve the communication skills of students 2. To improve the body language a Verbal and Nonverbal communication of student. 3. To study the various types of communication techniques



PRINCIPAL
K.K.H.A. Art's, S.M.G.L. Comm.
& S.P.H.J. Science College,
Chandwad Dist. Nashik.