MVP Samaj's

Smt. Vimlaben Khimji Tejookaya Arts, Science and Commerce College
Deolali Camp

Program Outcomes [PO], Program Specific Outcomes [PSO] and Course Outcomes [CO]

Year 2023-24

M.V.P. Samaj's

S.V.K.T., Arts, Science and Commerce College, Deolali Camp

Department of Economics

Academic Year 2022-23

Programme Specific Outcomes : B.A.

Program Specific Outcomes	
At the end of the programme, student will be able to	
1	Understand the basic terms, concepts and theories in economics.
2	Demonstrate the ability to explain charts, diagrams and graphs.
3	Identify the socio-economic issues and find solutions for the problems.
4	Apply professional ethics in day-to-day economic activities.
5	Understand research technique, methods to collect primary and secondary data and analyse it.
6	Acquires writing skills and ability develops of economic way of thinking

H.O.D.
Department of Economics
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College,
Deolali-Camp, (Nasik)

PRINCIPAL
Smt. Vimlaben Khimji Tejookaya,
Arts,Science & Commerce College,
Deolali-Camp (Nasik)

M.V.P. Samaj's
S.V.K.T., Arts, Science and Commerce College, Deolali Camp
Department of Economics
Academic Year 2022-23

Course Outcomes B.A.

Class : F.Y.B.A.		
Semester-I		
Paper	**Course code & course title**	**At the end of the course, student will be able to**
I	(CC-1A-11151) Indian Economic Environment	Identify recent developments in the Indian and world economy.
		Interpret the contemporary issues in economic environment.
		Analyse current scenario in various sectors in the economy.
		Gain knowledge about various concepts of cropping pattern and technology.
		Understand the Industrial policies its effect on sustainable agricultural development.
		Acquire knowledge about agricultural marketing, rural Entrepreneurship.
Semester-II		
I	(CC-1B-12151) Indian Economic Environment	Discuss and debate on the various issues and challenges facing the Indian Economic Environment.
		Describe the developments such as MSMEs, Digital Economy, E-Banking, BPO & KPO.
		Develops the students for varied competitive examinations.
		Making awareness about self-employability through banking environment.
		Understand challenges of Indian economy and the factors affecting economic environment.
		Acquire comparative knowledge about Indian and world economy

Class : S.Y.B.A.		
Semester-III		
Paper	**Course code& course title**	**At the end of the course, student will be able to**
I	(DSE-1A 23151) Micro Economics	Define and understand the Microeconomics, scope and nature
		Comment upon the concepts of micro economics
		Demonstrate the knowledge of ordinal and cardinal utility approach
		Able to discuss various aspects of demand theory
		Able to analyse supply and production process
		Analyse and interpret charts, graphs and figures
II	(DSE-2A 23152) Macro Economics	Differentiate between macroeconomics and micro economics.
		Apply the theories in macroeconomics in day-to-day context.
		Comment upon the concept of macroeconomics
		Able to discuss various concept of national income.
		Analyse the structure and functions of circular flow of income
		Understand various type of investment
III	(CC-1C 23153) Financial System	Analyse the structure and functions of the Indian financial system.
		Comment upon commercial banks
		Discuss the role of co-operative bank in rural area
		Able to define and differentiate Indian money market and capital market
		Enlist the importance of foreign exchange market
		Comment upon the financial institutions like UTI, LIC, GIC
IV	(SEC-2A 23154) Basic Concepts of Research Methodology	Describe the basic concepts of research
		Summarize the various types of research
		Discuss the various types of research design
		Form and test Hypothesis
		Define the process of Data Collection
		Undertake research related surveys

Semester-IV		
I	(DSE-1B24151) Micro Economics	Comprehend the concept of costs such as Fixed Costs, Variable Costs, Total Cost, Average Cost, Marginal Cost
		Able to define various revenue concepts like Total Revenue, Average Revenue & Marginal Revenue
		Comment upon the various types of markets
		Identify the process of equilibrium of the firm and industry under perfect competition market, monopoly market and imperfect competition market
		Describe the principles behind factor pricing.
		Analyse the concept of welfare economics
II	(DSE-2B 24152) Macro Economics	Evaluate an understanding of monetary policy and fiscal policy
		Identify the functioning of business cycles
		Examine the role of money in modern economy
		Understand the value of money
		Comment upon RBI
		Enlist the reasons and effect of inflation and deflation on economy.
III	(CC1D-24153) Financial System	Define and understand the role of the Reserve Bank of India in financial system.
		Identify the role of other financial regulators like SEBI & IRDA
		Comment upon the International Financial Institution such as IMF, IBRD, ADB
		Describe the recent developments in Indian Financial Sector
		Identify the objectives and outcomes of changing landscape of banking sector in India
		Comprehend the concepts of Insolvency and Bankruptcy, Alternate source of finance, risk management in banking sector.
IV	(SEC-2B 24154) Basic Concepts of Research Methodology	Define data analysis and state its importance
		Classify and present collected data in graph bar diagram
		Describe the importance of research design
		State characteristics research report·
		Summarize the concepts like bibliography, appendices, review of literature, hypothesis testing
		Conduct research in Economics

Class : T.Y.B.A.		
Semester-V		
Paper	**Course code & course title**	**At the end of the course, student will be able to**
I	DSE-1C-(35151) S-3 International Economics-I	Define the concept of International Economics, enlist its importance in economic perspective
		Highlight the advantage and disadvantages of International Trade
		Summarize the idea of Trade
		State characteristics of trade in the view of developing Country
		Discuss the term Balance of Payment
II	(DSE-2C-35152) S4- Public Finance-I	Understand the role of public finance in economic development
		Differentiate between direct tax and indirect tax
		Explain the types of public debt
		Differentiate between public finance and private finance
		Discuss the burden of public debt
		Evaluate the effects of taxation
III	(CC-1E 35153) UAECO-G3- Indian Economic Development -I	Differentiate between economic growth and economic development.
		Identify the characteristics of a developing country and developed country.
		Comment upon India as an emerging economy
		Debate and discuss various facets of constraints in development process
		Elaborate role of human resources in economic development
		Analyse various Development Index like Human Development Index, Physical Quality of Life Index, Gender Development Index, Gender Inequality Index, Multidimensional Poverty Index
IV	(SEC-2C-35154) Business Management-I	Understand the process of Management of Business.
		Analyse Business planning and decision-making process
		Ability develops to work in teams
		Ability develops leadership qualities
		Analyse collected data
		Analyse and interpret the collected data

Semester-VI		
Paper	**Course code & course title**	**At the end of the course, student will be able to**
I	DSE-1D-36151-S3- International Economics-II	Comment upon India's Foreign Trade
		Highlight India's Foreign Trade Policy
		Summarize the concept of Foreign Capital and Investment
		Describe Foreign Exchange Market
		Discuss regional economic forums like SAARC, BRICS, EEC and WTO
		Independently analyse India's foreign trade and investment
II	(DSE-2D-36152) S4- Public Finance-II	An understanding role of deficit financing in developing countries.
		Understand the centre state financial relationship
		Discuss and debate on budget
		An understanding of the mechanics of government budget
		To critically analyse fiscal policy and its implication in economy
		Develops the students for varies competitive examinations.
III	(CC-1F 36153) G3- Indian Economic Development -II	Discuss the features, needs and objectives of economic planning
		Elaborate the role of NITI Aayog
		Analyse the importance of sustainable development
		Comment upon sustainable development goals and current scenario of SDG in India
		Understand the relation between environment and economic development
		Discuss the environment policies in India and global warming concept
IV	(SEC-2D-36154) Business Management-II	Ability develops to case study
		Elaborate the study of business enterprise
		Analyse presentation of business ideas
		Ability to show leadership skills with business ideas
		Develop the skill of writing project report
		Apply PPT presentation skill

H.O.D.
Department of Economics
Smt. Vimlaben Khimji Tejookaya
Arts, Science & Commerce College
Deolali-Camp, (Nasik)

PRINCIPAL
Smt. Vimlaben Khimji Tejookaya
Arts,Science & Commerce College
Deolali-Camp (Nasik)

M.V.P. Samaj's

S.V.K.T., Arts, Science and Commerce College, Deolali Camp

Department of Economics

Academic Year 2022-23

Programme Specific Outcomes : M.A.

Program Specific Outcomes	
After completing the Master of Arts Economics, students are able to	
1	Academic Competence: To inculcate the ability to explain Microeconomics, Macroeconomics, Financial Markets and Institutions, Economic growth & Development, Agriculture Economics, International Economics, Monetary Economics, Demography, Public Economics, EnvironmentalEconomics
2	Research Competence: Acquire the research technique, applied economic research and prepares the students for a sound preparation for progression to doctoral study
3	Social Competence: Ability develops to understand the socio-economic issues and find solutionsfor the problems.
4	Professional Competence: Acquires various skills such as communication skill, presentation skillsthat helps to getting jobs across a broad spectrum of industries and other sectors.
5	Acquire the skills like writing, analyzing the data
6	Ability develops of economic way of thinking

H.O.D.
Department of Economics
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College,
Deolali-Camp, (Nasik)

PRINCIPAL
Smt. Vimlaben Khimji Tejookaya,
Arts,Science & Commerce College,
Deolali-Camp (Nasik)

M.A. Economics Part – I

NEP 2020

Program Outcomes (PO)

PO Number	Programme Outcome
PO-1	Acquire in depth knowledge in literature, Humanities and Social Sciences with appropriate theoretical and practical base
PO-2	Acquire the ability to think critically making them sensitive and sensible enough to solve issues related with mankind
PO-3	Acquire knowledge about research methods, involving development of research framework, collecting data. Quantitative and qualitative analysis and presenting research findings rationally.
PO-4	Augment effective communication skills for applying the same in their careers
PO-5	Facilitate ability for innovative thinking and bridging the gap between theory and practice
PO-6	Contribute as a responsible citizen and able to work with dedication and involvement for the community
PO-7	Develop rational thinking to conduct professional analysis of social processes
PO-8	Develop higher order cognitive skills and abilities for applying the knowledge of the subjects in the practical field.
PO-9	Demonstrate Intercultural awareness, with Socio-cultural sensitivity.
PO-10	Collaborate successfully with others individually and in teams
PO-11	Demonstrate and channelize the interests in a better way to be a lifelong learner with independent thinking in the context of socio-technological changes

M.A. Economics Part – I (NEP 2020) Programme Specific Outcome (PSO) after completing the Master of Arts Economics, students are able to

1	Academic Competence: To inculcate the ability to explain Microeconomics, Macroeconomics, Financial Markets and Institutions, Economic growth & Development, Agriculture Economics, International Economics, Monetary Economics, Demography, Public Economics, Environmental Economics
2	Research Competence: Acquire the research technique, applied economic research and prepares the students for a sound preparation for progression to doctoral study
3	Social Competence: Ability develops to understand the socio-economic issues and find solutions for the problems.
4	Professional Competence: Acquires various skills such as communication skill, presentation skills that helps to getting jobs across a broad spectrum of industries and other sectors.
5	Acquire the skills like writing, analyzing the data
6	Ability develops of economic way of thinking

MVP Samaj's SVKT College, Deolali Camp Nashik
Choice Based Credit System-70:30-Pattern)

English Department of English

Bachelor of Arts in English

- **Programme Specific Outcomes (PSO)**

- Literature courses of English provides an opportunity to study & implement world best literature of all countries along with its history, Social, Cultural & political background.
- Literature provides imaginative & critical insights into all areas of human life.
- The blend of English language courses helps students to understand the language niceties through literature
- Select literary pieces help students understand the moral stories in life
- The subject knowledge helps not only for the professional life but also in their personal life
- It develops intellectual, personal & professional abilities through effective communicative skills
- It shapes students as socially responsible/ citizens.

TYBA-Compulsory English (Core Course-CC)

Prescribed Text: Exploring New Horizons (Ed-Board of Editors- Orient Black Swan)

- The blend of English language courses helps students to understand the language niceties through literature
- Selected literary pieces help students understand the moral stories in life
- The subject knowledge helps not only for the professional life but also in their personal life
- It develops intellectual, personal & professional abilities through effective communicative skills
- It shapes students as socially responsible.

●Course Outcomes●

- **Literature (Prose- Poetry) -** To get acquainted with the master- pieces of literature along with their socio- political, history & cultural aspects of life.
- **Grammar -** Useful expressions and exercises

- **Writing Skills-** How to paragraphs, Note taking & note making, Reference skills. Writing job application letter to presentation skill.
- **Soft Skills-** An Introduction to soft skills, Nonverbal communication, Tips for effective communication and useful techniques and exercises.

Skill Enhancement Course (SEC 1-C & SEC 1-D) (G-3)

Title of the Paper: Enhancing Employability Skills

(Credit-3)

Prescribed Text- Aspirations: English for Careers (Board of Editors- Orient Black Swan)

Course Outcomes:

After studying the paper successfully, the learners will be able:

1. To get the awareness of career opportunities available to them.
2. To identify the career opportunities suitable to them.
3. To understand the use of English in different careers.
4. To develop competence in using English for the career of their choice.
5. To enhance skills required for their placement.
6. To use English effectively in the career of their choice.
7. To exercise verbal as well as nonverbal communication effectively for their career.

Discipline Specific Elective (DSE-1C& DSE-1D) (S-3)

Title of the Paper: Appreciating Novel

Prescribed Text-

A) A Farewell to Arms- Ernest Hemingway (20 Clock Hours)

B) The Painter of Signs- R. K Narayan (25 Clock Hours)

Course Outcomes:

a) To introduce students to the basics of novel as a literary form

b) To expose students to the historical development and nature of novel

c) To make students aware of different types and aspects of novel

d) To develop literary sensibility and sense of cultural diversity in students

e) To expose students to some of the best examples of novel

Discipline Specific Elective (DSE-2C & DSE-2D) (S-4)

Title of the Paper: Introduction to Literary Criticism

(Credit-3+1=4)

a) To introduce students to the basics of literary criticism

b) To make them aware of the nature and historical development of criticism

c) To make them familiar with the significant critical approaches and terms

d) To encourage students to interpret literary works in the light of the critical approaches

e) To develop aptitude for critical analysis

Skill Enhancement Course (SEC 2-C & SEC 2-D)

Title of the Paper: Mastering Life Skills and Life Values

[Two credit Course (2X15= 30 Clock Hours)]

1. To equip the students with the social skills

2. To train the students interpersonal skills

3. To build self-confidence and communicate effectively

4. To Encourage the students to think critically

5. To learn stress management and positive thinking

6. To enhance leadership qualities

7. To aware the students about universal human values

8. To develop overall personality of the students

SYBA Compulsory English (Core Course-CC)

- To acquaint Students to the universal human values through best pieces of literature in English
- To introduce students to the best examples of literature in English
- To develop effective communication skills
- To enhance employability of the students
- To sustain interest about English Language
- To boost students' vocabulary

SYBA General English II (Skill Enhancement Course-SEC-1A)

Title of the Paper: Advanced Study of English Language

- To familiarize students with the various components of language
- To develop overall linguistic competence of the students.
- To introduce students to some advanced areas of language study
- To prepare students to go for detailed study and understanding of language
- To prepare students to go for detailed study and understanding of language

SYBA Special English I (Discipline Specific Course (DSC-1A)

Title of the Paper: Appreciating Drama

- To introduce Drama as a major form of literature
- To introduce minor forms of Drama
- To acquaint students with the elements and the types of Drama

- To encourage students to read original plays
- To develop interest among the students to appreciate drama

SYBA Special English II (Discipline Specific Course (DSC-2A)

Title of the Paper: Appreciating Poetry

- To acquaint students with the terminology in poetry
- To encourage students to make a detailed study of various forms of poetry
- To enhance students' awareness in the aesthetics of poetry
- To make students understand about how to enjoy poetry
- To make students able to read aloud poem

MVP Samaj's SVKT College, Deolali Camp Nashik
S.Y. B.Sc. Ability Enhancement Course- AEC
(CBCS Pattern - 35:15 Pattern)

Prescribed Text: Horizon: English in multivalent Context

- The blend of English language courses helps students to understand the language niceties through literature
- Selected literary pieces help students understand the moral stories in life
- The subject knowledge helps not only for the professional life but also in their personal life
- It develops intellectual, personal & professional abilities through effective communicative skills
- It shapes students as socially responsible.

●Course Outcomes●

- **Literature -** To get acquainted with the master- pieces of literature along with their socio-political, history & cultural aspects of life.
- **Language -** To trace out the history of English - language & varied components of linguistic structure of the language.
- **Conversational Skills-** Useful expressions and exercises
- **Interview Techniques-** How to prepare for personal interviews. Writing job application letter to presentation skill.
- **Soft Skills-** An Introduction to soft skills, useful techniques and exercises

FYBA DSE-1 Optional English

Course Outcomes: (CO's)

1. Students learn the basics of English language
2. Students become confident and proficient in the use of English in real life situations
3. Students relies the beauties of literature as linguistic construction and learn less and values of life 4. Students acquire necessary skills that make them competent and employable
4. Students learn the significance of human values

Dr. Swati Singh

(Head, Department of English)

Smt.Vimalaben Khimji Tejookaya Arts Commerce and Science Colllege Deolali Camp,Nashik.

Subject-History

Programme Specific Outcomes

- ✓ Students understood strengths and weaknesses of a historical argument
- ✓ Students learnt the historical contexts of different historical interpretations
- ✓ Good results have been produced in each of the courses
- ✓ Good ratio is maintained in students progression towards higher education
- ✓ Students could describe how historical actors are differently affected by their ethnicity, race, class, gender, sexual orientation, and language
- ✓ Students can demonstrate how political, economic, and social structures affect historical change.

H.O.D.
Department of History
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College,
Deolali-Camp, (Nasik)

MVP Samaj's

Smt.Vimalaben Khimji Tejookaya Arts Commerce and Science Colllege

Deolali Camp,Nashik.

Subject-History

Programm Outcomes – 2019 Pattern

F.Y.B.A. HISTORY

Semester-I

Early India: From Prehistory to the Age of the Mauryas

Outcome:

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 Mauryas.

It also attempts to highlight the factors and forces behind the rise, growth and spread of Civilization.

Cculture 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.

It also aims to foster the spirit of enquiry among the students by studying the major developments in early Indian history.

Semester-II

Early India: Post Mauryan Age to the Rashtrakutas

Outcome:

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.

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 in still the spirit of enquiry among the students.

SYBA HISTORY

Core Course-I (CC- 1C)
Semester –III
History of the Marathas: (1630-1707)

Learning Objectives:

1. To introduce the students to the regional history of medieval Maharashtra and India.
2. To study political, social and conceptual history of the Marathas in an analytical way with the help of primary sources.
3. To evaluate contribution of Chhatrapati Shivaji Maharaj to the establishment of Swarajya, contribution of successors and later development of the Maratha kingdom.
4. To study administrative Institutions of the Maratha.

Learning Outcome:

1. Student will develop the ability to analyse sources for Maratha History.
2. Student will learn significance of regional history and political foundation of the region.
3. It will enhance their perception of 17th century Maharashtra and India in context of Maratha history.
4. Appreciate the skills of leadership and the administrative system of the Marathas.

Core Course-I (CC- 2C)
Semester –IV
History of the Marathas: (1707-1818)

Learning Objectives:

1. To understand changed nature of Maratha Polity during the Peshwa Period.
2. To examine the dynamics of Maratha Confederacy and reciprocity.
3. To examine role of Marathas and regionality in National politics of 18th Century India.
4. To study administrative system, society and economy of the Peshawa period

Learning Outcome:

1. Students will be able to analyze the Marathas policy of expansionism and its consequences.
2. They will understand the role played by the Marathas in the 18th century India.
3. They will be acquainted with the art of diplomacy in the Deccan region.
4. It will help to enrich the knowledge of the administrative skills and profundity of diplomacy.

Discipline Specific Elective Course (DSE-1A)
Semester –III
Medieval India - Sultanate Period
Course objectives:
1. Demonstrate thinking skills by analyzing, synthesizing, and evaluating historical information from multiple sources.
2. Develop the ability to distinguish between fact and fiction while understanding that there is no one historical truth.
3. To Learn foundation of Delhi Sultanate and Sultanate Administration.
4. To understand the socio, economic condition of Delhi Sultanate

Course Outcome:
1. Provides examples of sources used to study various periods in history.
2. Relates key historical developments during medieval period occurring in one place with another.
3. Analyses socio - political and economic changes during medieval period
4. Estimate the foreign invasion and the achievement of rulers

Semester –IV
Medieval India: Mughal Period
Course objectives:
1. Produce well researched written work that engages with both primary sources and the secondary literature.
2. To learn the Mughal ruler and incidents regarding Deccan policies.
3. To understand the analytical studies of Medieval South India
4. Maps- important centres in Mughal Empire under Akbar and Aurangzeb

Course Outcome:
1. Draws comparisons between policies of different rulers.
2. Understanding Role of Akbar in the consolidation of Mughal rule in India.
3. Understand Aurangzeb's conflict with Rajputas, Maratha and weakening Mughals age.
4. Analyses factors which led to the emergence of new religious ideas and movements (bhakti and Sufi)

Discipline Specific Elective Course (DSE-2A)
Semester –III
Glimpses of the Modern World - Part I
Learning Objectives:
1. This paper is designed to introduce the students to the history of the Modern World with its socio-religious, political and economic developments.
2. It will enable students to study interesting historical developments in the countries other than India, which had a significant impact on almost all over the Modern World.
3. It will enable students to understand the significant impact of the modern concepts such as Renaissance, Nationalism, Communism, Imperialism, etc.
4. It will get students acquainted with the major revolutions, and political developments which led to the World War I and its consequences.

Course Outcome:

1. It will enable students to develop the overall understanding of the Modern World.
2. The students will get acquainted with the Renaissance, major political, socio-religious and economic developments during the Modern World.
3. It will enhance their perception of the history of the Modern World.
4. It will enable students to understand the significance of the intellectual, economic, political developments in the Modern World.

Discipline Specific Elective Course (DSE-2 B)
Semester –IV
Glimpses of the Modern World - Part II

Learning Objectives:

1. This paper is designed to introduce the students to the political history of the Modern World.
2. It will enable students to study remarkable historical developments in the various countries including India, which had a significant impact on almost all over the Modern World.
3. It will enable students to understand the significant impact of the modern concepts such as Dictatorship, Cold War, Nationalism, Communism, Imperialism, Polarization, etc.
4. It will get students acquainted with the major nationalist movements, the World War II and its consequences, the Cold War and its Consequences.

Course Outcome:

1. It will enable students to develop the overall understanding of the Modern World.
2. The students will get acquainted with the major nationalist movements, the World War II and its consequences, the Cold War and its Consequences.
3. It will enhance their overall perception of the history of the Modern World.
4. It will enable students to understand the significance of the strategic political developments in the Modern World.

Skill Enhancement Courses (SEC 1A)
Semester III
Art and Architecture of Early India (From 3000 B.C. to 12th Century A.D.)
Course Objectives:

1. This paper is designed to introduce the students to the emergence and development of art and architecture in early India.
2. It will enable students to understand the process of development of art and architecture in the early Indian history on the socio-religious and economic background.
3. It will get students acquainted with the emergence and changes in the styles of the art and architecture during the early India up to the 6th century B.C.E.

Course Outcome:

1. Students will get an overall understanding of the emergence and development of the art and architecture in Early India.
2. They will understand the emergence of the Pottery, Terracotta figures, Ornaments, Town Planning, preparation of seals and coins.
3. They will have an understanding of the art and architecture in early India.

Semester IV

Medieval Indian Arts and Architecture (1206 To 1857)

Course Objectives:

Course Objectives:

1. This paper is designed to introduce the students to the Art and Architecture during the Medieval India.
2. It will enable students to understand the impact of the Persia on the Mughal Art and Architecture.
3. It will get students acquainted with the development of Indo-Persian style of Painting.

Course Outcome:

1. Students will get an overall understanding of the development of the Medieval Art and Architecture.
2. They will understand the changing patterns of the Art and Architecture during the Medieval India.
3. They will have an understanding of the impact of Persian Art on Islamic Art and Architecture in Medieval India.

TYBA – History

Semester V: Course Title: – Indian National Movement (1885 to1947)

Course Outcome:

1. It will enable students to develop an overall understanding of Modern India.
2. It will increase the spirit of healthy Nationalism, Democratic Values and Secularism among the students.

.Students will understand various aspects of the Indian Independence Movement and the creation of modern India.

Semester VI: India after Independence– (1947-1991)

Course Outcome:

1. It will enable students to develop an overall understanding of the Contemporary India.
2. To increase the spirit of healthy Nationalism, Democratic Values and Secularism among the students.
3. Students will understand various aspects of India's domestic and foreign policies that shaped Post-Independence India.

Semester –V: Course Title: Introduction to Historiography and
Course Outcomes:
1. Students will be introduced to the information and importance of Historiography.
2. Students will be introduced to the different Methods and Tools of data collection.
3. Students can study the interdisciplinary approach of History.
4. Students will learn about the usefulness of History in the 21st century, its changing perspectives, the new ideas that have been invented, and the importance of History in a competitive World.

Semester –VI: Applied History
Course Outcomes:
1. Students will be introduced to the information and importance of applied history.
2. Student will learn about the Historical significance of Archaeology and Archives and opportunities in the field of Archaeology and Archives.
3. Through this course, students will be informed about the opportunities in the field of Media, Museums.
4.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 a Competitive World.

Semester –V: Course Title: Maharashtra in the 19th Century
Course Outcomes:
1. Student will develop the ability to analyse sources for 19th century Maharashtra History.
2. Student will learn significance of Regional History and Socio- religious reformism foundation of the region.
3. It will enhance their perception of 19th Century Maharashtra.
4. Appreciate the skills of leadership and the Socio-religious System of the Maharashtra.

Semester –VI: Course Title: Maharashtra in the 20th Century
Course Outcomes:
1. Student will develop the ability to analyses sources for 20th Century Maharashtra History.
2. Student will learn significance of regional history and Socio- Religious Reformism foundation of the region.
3. It will enhance their Perception of 20th Century Maharashtra.
4. Appreciate the skills of leadership and the Socio-Religious System of the Maharashtra.

Semester –V: Course Title: Introduction to Historiography and
Course Outcomes:

1. Students will be introduced to the information and importance of Historiography.
2. Students will be introduced to the different Methods and Tools of data collection.
3. Students can study the interdisciplinary approach of History.
4. Students will learn about the usefulness of History in the 21st century, its changing perspectives, the new ideas that have been invented, and the importance of History in a competitive World.

Semester –VI: Applied History
Course Outcomes:

1. Students will be introduced to the information and importance of applied history.
2. Student will learn about the Historical significance of Archaeology and Archives and opportunities in the field of Archaeology and Archives.
3. Through this course, students will be informed about the opportunities in the field of Media, Museums.
4. 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 a Competitive World.

Semester –V: Course Title: Maharashtra in the 19th Century
Course Outcomes:

1. Student will develop the ability to analyse sources for 19th century Maharashtra History.
2. Student will learn significance of Regional History and Socio- religious reformism foundation of the region.
3. It will enhance their perception of 19th Century Maharashtra.
4. Appreciate the skills of leadership and the Socio-religious System of the Maharashtra.

Semester –VI: Course Title: Maharashtra in the 20th Century
Course Outcomes:

1. Student will develop the ability to analyses sources for 20th Century Maharashtra History.
2. Student will learn significance of regional history and Socio- Religious Reformism foundation of the region.
3. It will enhance their Perception of 20th Century Maharashtra.
4. Appreciate the skills of leadership and the Socio-Religious System of the Maharashtra.

Semester V: -SEC: Course Title: South Indian Art and Architecture (From 4thCentury A.D. to12th Century A.D.)

Course Outcomes:

1. Students will get an overall understanding of the development of the Art and Architecture in South India.
2. They will understand the changing patterns of the Art and Architecture in South India.
3. They will understand the impact of Persian Art on Islamic Art and Architecture in South India

Semester VI: -SEC: Heritage Management

Course Outcomes:

1. Student will understand over all process of Heritage Management
2. Student will get the knowledge about scope and the fact of Heritage Management.
3. The students will enable to understand about legal and commercial framework of Heritage

---

H.O.D.
Department of History
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College,
Deolali-Camp, (Nasik)

Maratha Vidya Prasarak Samaj ,

Smt. Vimalaben Khimaji Tejookaya Arts, Science and Commerce College,

Deolali Camp, Nashik

Dept.Marathi-2022-23

(Choice Based Credit System)

CL ASS & SEM	TITLE OF PAPER& SUB CODE	OUTCOMES
FYBA- SEM-I MARATHI-	मराठी साहित्य :कथा भाषिक कौशल्य विकास [११०२१-A]	१. कथा या साहित्यप्रकाराची ओळख झाली २. कथा या साहित्यप्रकाराचे स्वरूप , घटक आणि प्रकार यांची ओळख झाली. ३. समकालीन कथा या साहित्यप्रकारातील निवडक कथांचे अध्ययन झाले. ४. विविध भाषिक कौश्बल्ये परिचित व विकीत झाली.
FYBA- SEM-II MARATHI-	मराठी साहित्य : एकांकिका आणि भाषिक कौशल्य विकास [११०२२A].	1. एकांकिका या साहित्यप्रकाराचे स्वरूप, घटक आणि प्रकार यांची ओळख झाली . 2.मराठी साहित्यातील एकाकीकांचे अध्ययन केले . 3. भाषिक कौशल्य विकास झाला .

Mr. D.T.Jadhav

(Hod)

H.O.D.

Department of Marathi

Smt. Vimlaben Khimji Tejookaya,

Arts, Science & Commerce College,

Deolali-Camp, (Nasik)

Dr.S.S.Kale

(Principal)

PRINCIPAL

Smt. Vimlaben Khimji Tejookaya,

Arts, Science & Commerce College

Deolali-Camp (Nasik)

Maratha Vidya Prasarak Samaj ,
Smt. Vimalaben Khimaji Tejookaya Arts, Science and Commerce College,
Deolali Camp, Nashik

Dept.Marathi-2022-23

(Choice Based Credit System

CL ASS & SEM	TITLE OF PAPER& SUB CODE	OUTCOMES
SYBA-SEM-III MARATHI -G2	भाषिक कौशल्य विकास आणि आधुनिक मराठी साहित्यप्रकार : कादबंरी (२३०२3)	१.कादबांरी या साहित्य प्रकाराचेस्वरूप, घटक, प्रकारआणि वाटचाल समजनू घेतली . २. नेमेलेल्या कादंबरीचे आकलन, आस्वाद आणि विश्लेषण कसे करावे ते समजले . ३. भाषिक कौशल्य विकास करण्यास चालना मिळाली.
SYBA -SEM-IV MARATHI-G2	भाषिक कौशल्य विकास आणि आधुनिक मराठी साहित्य प्रकार : ललितगद्य-साहित्यरंग (२४०२३)	१. ललित गद्य या साहित्य प्रकाराचे स्वरूप , घटक, प्रकार आणि वाटचाल समजल . २. नेमलेल्या अभ्यासपुस्तकातील ललित गद्याचे आकलन, आस्वाद आणि आणि विश्लेषण करणे. ३. भाषिक कौशल्य विकास झाला .
SYBA -SEM-III SPL-I MARATHI-	आधुनिक मराठी साहित्य : प्रकाशवाटा (२३०२१)	१. आत्मचरित्र या साहित्य प्रकाराचे स्वरूप, संकल्पना समजली . २. आत्मचरित्र या प्रकाराच्या प्रेरणा आणि वाटचाल याची ओळख झाली . ३. गद्यातील अन्य साहित्यप्रकार तूलनेत आत्मचरित्राचे वेगळेपण समजले .
SYBA- SEM-IV MARATHI-	मध्ययुगीन मराठी साहित्य : निवडक मध्ययुगीन गद्य व पद्य (२४०२१)	१. मध्ययुगीन गद्य – पद्य साहित्य प्रकाराची ओळख करून झाली . २. मध्ययुगीन गद्य - पद्याचे आकलन, आस्वाद आणि विश्लेषण कसे करावे ते समजले. 3 नेमलेल्या आत्मचररत्राचे आकलन,आस्वाद आणि विश्लेषण करण्यास चालना मिळाली.

SYBA -SEM-III SPL-I MARATHI	साहित्य विचार (२३०२२)	१)भारतीय आणि पाश्चात्य साहित्यविचाराच्या साहित्याची संकल्पना ,स्वरूप आणि प्रयोजन विचार समजला. २)साहित्य निर्मिती प्रक्रिया समजली. ३)साहित्यची भाषा आणि शैलीविषयक विचार आकलन झाले.
SYBA- SEM-IV MARATHI	साहित्य समीक्षा (२४०२२)	१)साहित्य समीक्षेची संकल्पना आणिस्वरूप यांचा परिचय झाला. २) साहित्य आणि समीक्षा यांचे परस्पर संबंध समजण्यासाठी मदत झाली. ३)ग्रंथ परिचय परीक्षण आणि समीक्षण यातील भेद आकलनास चालना मिळाली.
SYBA- SEM-III sec MARATHI-	प्रकाशन व्यवहार आणि संपादन (२३०२५)	१. प्रकाशन व्यवहार आणि संपादन या साठी आवश्यक कौशल्ये प्राप्त झाली . २. प्रकाशन व्यवहार आणि संपादन यासाठी आवश्यक प्रशिक्षण दिले. ३. प्रकाशन व्यवहार आणि संपादन यासाठी प्रात्यक्षिकातून उपयोजनाची कौशल्ये प्राप्त झाली . ४. प्रकाशन संस्था, व्यवहरात संस्था, छापखाने,वृत्तपत्र कार्यालाय , वितरण संस्था, ग्रंथ विक्रीदकुाने, फ्लेक्स केंद्र,यांना प्रत्येक्ष भेट देवून माहिती मिळाली.
SYBA- SEM-IV [SEC]MARATHI-	उपयोजीत लेखन कौशल्ये (२४०२५)	१. जाहिरात, मुलाखत लेखन आणि संपादन यासाठी आवश्यक कौशल्ये प्राप्त झाली . २. जाहिरात, मुलाखत लेखन आणि संपादन यासाठी आव्श्यक बाबी प्रशिक्षण मिळाले . ३ जाहिरात, मुलाखत लेखन आणि संपादन यासाठी प्रात्यक्षिक उपयोजनाची कौशल्ये प्राप्त झाली

Mr.D.T.jadhav
(Hod)
H.O.D.
Department of Marathi
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College,
Deolali-Camp, (Nasik).

Dr.S.S.Kale
(Principal)
PRINCIPAL
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College
Deolali-Camp (Nasik)

Maratha Vidya Prasarak Samaj ,
Smt. Vimalaben Khimaji Tejookaya Arts, Science and Commerce College,
Deolali Camp, Nashik

Dept.Marathi-2022-23 (Choice Based Credit System)

CL ASS & SEM	TITLE OF PAPER& SUB CODE	OUTCOMES
TYBA -SEM-V	भाषिक कौशल्यविकास आणी आधुनिक मराठी साहित्यप्रकार:प्रवासवर्णन (35023)	१ माध्यमांसाठी लेखन कौशल्ये आत्मसात करण्यास प्रेरणा मिळाली. २ प्रवासवर्णन या साहित्य प्रकाराचे स्वरूप, प्रेरणा, प्रयोजने ,वैशिष्ट्ये आणि वाटचालीचा परिचय झाला. ३ नेमलेल्या साहित्य प्रकारचे आकलन, आणि विश्लेषण कारण्यास चालना मिळाली.
TYBA- SEM-VI	कौशल्यविकास आणि आधुनिक मराठी साहित्य प्रकार: कविता (36023)	१. मराठी साहित्य , भाषिक कौशल्यविकास आणि शासनव्यवहार यांची माहिती मिळाली. २.कविता या साहित्य प्रकाराचे स्वरूप,वाटचाल, प्रेरणा, आणि वैशिष्ट्ये यांचा परिचय झाला , ३. नेमलेल्या अभ्यासकपुस्तक निवडक कविताचे आकलन, आस्वाद आणि विश्लेषण करण्याची क्षमता विकसीत झाली. ४ कविता या साहित्य प्रकारची ओळख झाली.

Mr. D.T.jadhav
(Hod).
Department of Marathi
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College,
Deolali-Camp, (Nasik)

Dr.S.S.Kale
(Principal)
PRINCIPAL
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College
Deolali-Camp (Nasik)

Maratha Vidya Prasarak Samaj ,

Smt. Vimalaben Khimaji Tejookaya Arts, Science and Commerce College,

Deolali Camp, Nashik

Dept.Marathi-2022-23

(Choice Based Credit System)

CL ASS & SEM	TITLE OF PAPER& SUB CODE	OUTCOMES
F.Y.BCOM SEM-I	(117-B)उत्कर्ष वाटा	कर्तृत्ववान व्यक्तींच्या कार्याचा परिचय झाला.
F.Y.BCOM-II	(127-B)भाषा आणि साहित्य	अर्ज लेखन कौश्य्ल्याचा परिचय झाला .

Mr D.T.jadhav

(Hod)

Department of Marathi
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College,
Deolali-Camp, (Nasik)

Dr.S.S.Kale

(Principal)

PRINCIPAL
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College
Deolali-Camp (Nasik)

Arts Science & Commerce College
Deolali Camp Dist Nasik

Maratha Vidya Prasarak Samaj ,

Smt, Vimalaben Khimaji Tejookaya Arts, Science and Commerce College,

Deolali Camp, Nashik

Dept.Marathi-2022-23

(Choice Based Credit System)

CL ASS & SEM	TITLE OF PAPER& SUB CODE	OUTCOMES
SEM-III S.Y.BSC	उपयोजित मराठी (23133)	१. साहित्य विषयक अभिरुची विकसित झाली . २. मराठी भाषा, साहित्य यांच्या परस्पर संबधांची जाणीव झाली. ३. साहित्य विषयक अभ्यासातून जीवनविषयक समज विकसित झाली. ४. विज्ञान साहित्यविषयक आकलन क्षमता वाढाली.
S.Y.BSC SEM-IV	पाठ्यपुस्तक - मराठी कथादर्शन - (24331)	१., मराठी साहित्य आणि मराठी सांस्कृती यांचे चे अध्ययन झाले . २.साहित्यहिविषयक आकलन, आस्वाद आणि मूल्यमापन क्षमता विकसित झाली. ३.साहित्याभ्यासातनू साहित्य लेखन कैशल्ये परिचित झाली . ४.मराठी भाषेची च उपयोनात्मक कौशल्ये विकसित करण्यास चालना मिळाली .

Mr.D.T.Jadhav

(Hod)

Department of Marathi
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College,
Deolali-Camp, (Nasik)

Dr.S.S.Kale

(Principal)

PRINCIPAL
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College
Deolali-Camp (Nasik)

Maratha Vidya Prasarak Samaj's

Shrimati Vimalaben Khimaji Tejookaya Arts, Science and Commerce College, Deolali Camp

Department of Psychology

B. A. Psychology

Program Specific Outcomes

The fundamental objective of the undergraduate program of Psychology is to provide solid foundation for the basic principles of Psychology and familiarize students with the historical trends in Psychology, major concepts, theoretical perspectives, and empirical findings. The program is designed to help student understand various mental disorders, its' causes and treatments. Similarly, it intends to acquaint students with various applications of Psychology and most importantly to familiarize students with problems in various fields and solutions Psychology can provide. At the end of the program students are expected to have

- A scientific understanding of human behaviour
- The flexible and multifaceted perspective on human behaviour
- The insight on how to develop themselves emotionally and socially
- The motivation and skills to help others in maintaining mental health
- An inspiration to do research in scientific manner
- The knowledge to use psychological tests to understand others better

Course Outcomes

F. Y. B. A.

Semester I

Course DSC-PSY- 1A: Foundations of Psychology
Course objectives and learning outcomes:
After the completion of this course students will be able to demonstrate the following competencies:
a) Understand the basic psychological processes and their applications in day to day life.
b) Develop the ability to evaluate cognitive processes, learning and memory of an individual.
c) Understand the importance of motivation and emotion of the individual.

d) Understand the personality and intelligence of the individuals by developing their psychological processes and abstract potentials.

Semester II

Course DSC-PSY- 1B : Introduction to Social Psychology
Course objectives and learning outcomes:
After the completion of this course students will be able to demonstrate the following competencies:
a) Understand the basics of social psychology.
b) Understand the nature of self, concept of attitude and prejudice of the individual.
c) Assess the interactional processes, love and aggression in our day today life. .
c) Understand group dynamics and individual in the social world.

S. Y. B. A.

Semester III

DSE-1A: PSYCHOLOGY OF ABNORMAL BEHAVIOR-I
Learning Outcomes: After the completion of this course students will be able to:
1. acquire the knowledge about the symptoms, diagnostic criteria, and causes of various psychological disorders
2. examine multiple probable causes and correlates of behaviour.
3. understand critiques, limitations, and implications of diagnosis and classification of psychological diseases.
4. create awareness about mental health problems in society.

DSE-2A: DEVELOPMENTAL PSYCHOLOGY:
Learning Outcomes: After the completion of this course students will be able to:
1. Understand the importance, characteristics and concern in lifespan development
2. Understand biological, cognitive, and socio-emotional processes.
3. Understand the periods of development, the significance of age, and discuss developmental issues.
4. Understand Psychoanalytic, Cognitive, Behavioural and Social Cognitive, Ethological, Ecological and Eclectic theories of development

5. Understand methods of data collection and research designs used in Life-span development research

SEC- 1A: HEALTH PSYCHOLOGY
Learning Outcomes: After the completion of this course students will be able to:
1: Understand health psychology and arrive at the introduction to the role of psychology in health.
2: Understand the nature of stress and coping
3: Understand various factors related to health and diseases.
4: Understand quality of life and promoting the good health.

SEC-2A: Health Promotion Life Skills

Learning Outcomes: After the completion of this course students will be able to:

1. To understand the nature and importance of hygienic behaviour
2. To understand the nature and importance of relationships
3. Understand competency mapping

Semester IV

DSE-1B: PSYCHOLOGY OF ABNORMAL BEHAVIOR-II

Learning Outcomes: After the completion of this course students will be able to:

1. Learn descriptions, and theories underlying diagnostic nosology of psychiatric disorders.
2. Learn and understand benefits, critiques, limitations, and implications of diagnosis and classification.
3. Help students to acquire the knowledge about the symptoms, diagnostic criteria, and causes of various psychological disorders.
4. Examine multiple probable causes and correlates of behaviour.
5. Create awareness about mental health problems in society.

DSE-2B: **THEORIES OF PERSONALITY**

Learning Outcomes: After the completion of this course students will be able to:

1. Understand the concept of personality with various theories of personality on the basis of personality psychology.
2. Understand different framework and theoretical aspects of personality.
3. Understand and observe, interpret individual differences in behaviour in the light of sound theoretical systems of personality.
4. Understand comprehensive overview of the major theories personality.

SEC- 1B: POSITIVE PSYCHOLOGY

Learning Outcomes: After the completion of this course students will be able to:

1. Understand how the positive psychology as the science of happiness, human strengths, positive aspects of human behaviour and 'psychology of well-being.'
2. How we lead our lives, find happiness and satisfaction, and face life's challenges.
3. How positive psychology has become an evolving mosaic of research and theory from many different areas of psychology.

SEC-2B: Basic Counselling Skills

Learning Outcomes: After the completion of this course students will be able to:

1. To understand the counseling process and skills
2. To understand the considerations in counseling

T. Y. B. A.

Semester V

SEC 1 C (3): INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY

After completing the course, student should be able to:

1: Describe the concept of industrial and organizational psychology, selection and training, evaluation and motivation at workplace.

2: Explain job profile, job analysis, recruitment techniques and employee training.
3: Identify and classify the appraisal rating system.
4: Compare different theories of motivation.
5: Evaluate the training programme and job performance.

DSE 1 C (3): PSYCHOLOGICAL TESTING (THEORY) + (1) TESTING PROJECT
After completing the course, student should be able to:
1: Describe the concept of psychological test, reliability, validity and norms.
2: Classify and categorize psychological tests, reliability- validity-norms types.
3: Identify the reliability and validity of psychological tests,
4: Evaluate the types of norms.
5: Conduct testing project for behaviour analysis

DSE 2 C (3): PSYCHOLOGICAL TESTS + (1) STATISTICS
After completing the course, student should be able to:
1: Describe mapping of human behaviour.
2: Explain general ability testing, personality, adjustment and attitude.
3: Identify and classify the intellectual ability and personality patterns.
4: Conduct testing and evaluate intellectual ability, personality traits, adjustment and attitudes of participant.
5: Analyze statistical methods employed in behaviour analysis.

SEC 2 C (2) (VALUE/SKILL-BASED COURSE) : PERSONALITY DEVELOPMENT-1
After completion of this course, student should be able to:
1: Describe the concept of personality.
2: Identify and classify various personality traits.
3: Correlate real life behavioural patterns with theoretical assumptions.
4: Apply psychological skills in daily life situations.

Semester VI

SEC 1 D (3): APPLIED PSYCHOLOGY
After completing the course, student should be able to:
1: Describe the concept of applied psychology, educational psychology, family structure and developmental patterns.
2: Know the clinical psychology related mechanisms, social issues, and criminal behavior.
3: Classify the intellectual ability, abnormality, criminal behavior.
4: Identify the problems and solutions in the field of education,
5: Evaluate the interpersonal relations.
6: Apply psychological remedies to assess abnormal behaviour, to tackle the social issues and to rectify the problematic behaviour.

DSE 1 D (3): EXPERIMENTAL PSYCHOLOGY (THEORY) + (1) RESEARCH PROJECT
After completing the course, student should be able to:
1: Describe the process of experiment in psychology, concept of psychophysics.
2: Explain problem, hypothesis, variables, sampling in experiment.

3: Identify and classify the learning system, methods of psychophysics.
4: Compare laws of psychophysics, types of hypotheses.
5: Conduct research based project.

DSE 2 D (3): PSYCHOLOGICAL EXPERIMENTS + 1 STATISTICS

After completing the course, student should be able to:
1: Explain psychophysics, various cognitive processes of human being.
2: Classify and compare psychological experiments.
3: Conduct laboratory experiments.
4: Analyse statistical base of human behavior.

SEC 2 D (2) (VALUE/SKILL-BASED COURSE): PERSONALITY DEVELOPMENT-2

After completion of this course, student should be able to:
1: Describe the concept of self-esteem and personality development.
2: Identify and classify behavioural assessment techniques.
3: Evaluate personality of individuals.
4: Apply psychological skills to develop owns personality.

M. A. Psychology

Program Specific Outcomes

In the wake of the National Education Policy, 2020 (NEP-2020), the program aligns the learning activities, assessment, physical environments and ways of thinking and practicing that expect students to have varied learning experiences of theoretical and practical nature. Innovative approaches, for teaching-learning and evaluation, are to be adopted in addition to imparting immense value to the skill development and understanding of the ever-changing dynamics between the local and the global. The curriculum aims to fulfil the required educational and vocational needs of students. At the end of the program students are expected to have

- Understanding of Cognitive processes
- The understanding of Psychometrics and ability to use Psychological Tests in research and counseling
- An ability to use appropriate research methods and application of statistics in research
- Understanding of the biological basis of behaviour
- Understanding of various personality theories and their applications
- Understanding of practical application of knowledge through on-the-job training and field project

Course Outcomes

M. A. I

Semester I
Course Type: MAJOR MANDATORY THEORY
Course Name: COGNITIVE PROCESSES
No. of Credits: 04
Upon successful completion of this course, students will be able to:
1: Define and explain the theoretical foundations of cognitive psychology, including theories, research methods
2. Illustrate how sensation, attention and perception form the building blocks of cognition
3: Demonstrate an understanding of the cognitive phenomenon of language acquisition and usage
4: Clarify the cognitive phenomena of problem-solving and creativity

Course Type: MAJOR MANDATORY THEORY
Course Name: PSYCHOMETRICS
No. of Credits: 04
Upon successful completion of this course, students will be able to:
1: Define and explain the basic concepts necessary for creating a psychological test
2. Illustrate the usage of psychological assessment in different fields
3: Make judgments based on criteria and standards through checking and critiquing of the methods used in the standardisation of different psychological tests
4: Develop skills necessary for test construction and standardisation, such as item writing, item analysis etc

Course Type: MAJOR MANDATORY THEORY

Course Name: STATISTICS FOR PSYCHOLOGY
No. of Credits: 04
Upon successful completion of this course, students will be able to:
1: Define and explain the basic concepts of statistical methods used in psychology
2. Demonstrate skills for conducting data analysis using different statistical methods
3: Demonstrate the skill of choosing the appropriate statistical analysis technique for given data
4: Use statistical software to conduct basic statistical analysis

Course Type: RESEARCH METHODOLOGY
Course Name: RESEARCH METHODS IN PSYCHOLOGY
No. of Credits: 04
Upon successful completion of this course, students will be able to:
1: Define and explain the basics of scientific research in applied psychology
2. Differentiate between the different experimental and quasi-experimental methods applicable in psychology
3: Summarize the various multivariate research methods used in psychology
4: Create a research proposal as per the APA style

Course Type: MAJOR MANDATORY PRACTICAL
Course Name: PSYCHOLOGY PRACTICAL: TESTS
No. of Credits: 02
Upon successful completion of this course, students will be able to:
1. Learn the importance and certain skills of psychological testing
2. Apply knowledge of psychological testing to real-world scenarios, such as diagnosing psychological disorders, making educational recommendations, or personnel selection
3. Exhibit proficiency in administering a variety of psychological tests and assessments.
4. Demonstrate ethical conduct in test administration and interpretation, adhering to relevant guidelines and professional standards

Course Type: MAJOR ELECTIVE
Course Name: PSYCHOLOGY OF ADJUSTMENT
No. of Credits: 04
Upon successful completion of this course, students will be able to:
1. Explain the meaning, determinants, and approaches to adjustment
2. Understand the nature of various relationships and how to make these relationships work
3. Comprehend how to choose a career, adjust to the workplace, and manage work-related issues
4. Understand the concepts of gender, sexual identity and sexual orientation

Semester II
Course Type: MAJOR MANDATORY THEORY
Course Name: LEARNING AND MEMORY
No. of Credits: 04
Upon successful completion of this course, students will be able to:
1: Define and explain the fundamental concepts of Learning, including theories and their applications
2: Define and explain the fundamental concepts of Memory, including theories and their

applications
3: Summarise the techniques in behaviour modification and memory improvement
4: Demonstrate an understanding of phenomena such as distortion of memory, etc.

Course Type: MAJOR MANDATORY THEORY
Course Name: BIOPSYCHOLOGY
No. of Credits: 04
Upon successful completion of this course, students will be able to:
1: Define and explain the biological foundations of behavior, including theories, research methods
2. Carry out or using a procedure for executing, implementing innovative techniques in biopsychology
3: Determine how the parts relate to one another and to an overall structure or purpose through differentiating, organizing, and attributing related to physiology and behaviour
4: Make judgments based on criteria and standards through checking and critiquing of the behaviour in various states

Course Type: MAJOR MANDATORY THEORY
Course Name: PERSONALITY
No. of Credits: 04
Upon successful completion of this course, students will be able to:
1: Define and explain the fundamental concepts of Personality, including the misconceptions and approaches
2: Explain the differences in the psychoanalytic and neo-psychoanalytic theories of personality
3: Demonstrate the applications of personality theories in different walks of life
4: Observe and interpret individual differences in behaviour in the light of sound theoretical systems of personality

Course Type: OJT/FP
Course Name: ON-THE-JOB TRAINING (OJT) / FIELD PROJECT
No. of Credits: 04
Upon successful completion of this course, students will be able to:
1. Balance theoretical understanding with practical experience
2. Understand the requirements of running Mental Health Organizations
3. Demonstrate the practical skills required in the field of mental health

Course Type: MAJOR MANDATORY PRACTICAL
Course Name: PSYCHOLOGY PRACTICAL: EXPERIMENTS
No. of Credits: 02
Upon successful completion of this course, students will be able to:
1. Understand the process of conducting laboratory experiments
2. Understand the importance of controlled conditions for conducting a laboratory experiment
3. Develop the capacity to design new experiment on the basis of psychological theory
4. Understand the importance and application of the experiments

Course Type: MAJOR ELECTIVE
Course Name: MEDIA PSYCHOLOGY
No. of Credits: 04

Upon successful completion of this course, students will be able to:
1. Explain the scope of Media Psychology along with the research methods used in the field.
2. Describe the psychological effects of media, specifically in context of violence and erotica
3. Develop guidelines for responsible media consumption
4. Propose interventions and strategies to mitigate the negative effects of Media exposure and create media campaigns to promote awareness of media's psychological effects

M. A. II
Semester III
Course Type: MAJOR MANDATORY THEORY
Course Name: PROFESSIONALISM IN PSYCHOLOGY
No. of Credits: 04
Upon completion of this course, students will be able to:
1. Demonstrate a comprehensive understanding of the foundational ethical principles and codes of conduct that guide the practice of psychology
2. Apply ethical decision-making models to analyse and address complex ethical dilemmas in psychological practice
3. Understand and navigate the legal frameworks that regulate the practice of psychology, including the intersection of legal and ethical considerations
4. Demonstrate the ability to obtain informed consent, maintain confidentiality, and conduct ethical psychological assessments, considering the unique challenges in these areas
5. Recognize and navigate ethical challenges in therapeutic relationships, including the establishment and maintenance of professional boundaries
6. Analyse and critically examine emerging ethical issues in the field of psychology

Course Type: MAJOR MANDATORY THEORY (Counselling)
Course Name: Counselling Processes
No. of Credits: 04
On completion of the course, student will be able to–
1. Explain the characteristics of an effective counselor.
2. Apply theory to world of work.
Unit

Course Type: MAJOR MANDATORY THEORY (Counselling)
Course Name: Counselling Skills and Psychotherapy
No. of Credits: 04
Students will be able to
1. Understand counselling skills and apply them in their personal counselling sessions
2. Plan and conduct therapy sessions as per particular special conditions

Course Type: MAJOR MANDATORY THEORY
Course Name: INDIAN PSYCHOLOGY
No. of Credits: 02
Students will be able to
1. Understand concepts in psychology explained in the Indian knowledge system
2. Able to explain the concept of personality as narrated in different Indian schools

Course Type: MAJOR MANDATORY ELECTIVE
Course Name: ADVANCED SOCIAL PSYCHOLOGY
No. of Credits: 04
Upon successful completion of this course, students will be able to:
1. Understand the dynamics that shape human behaviour within social contexts
2. Explore advanced theories, methodologies, and empirical findings in social psychology
3. Use and develop the tools to critically analyse and contribute to the field
4. Use the principles of social psychology to resolve real life-issues

Course Type: RESEARCH PROJECT
Course Name: Research Project: Pilot study
No. of Credits: 04
Upon successful completion of this course, students will be able to:
1. Understand the process of conducting a literature review
2. Complete the research proposal
3. Conduct a pilot study on the basis of the research proposal

Semester IV
Course Type: MAJOR MANDATORY THEORY
Course Name: Community Psychology
No. of Credits: 04
Upon successful completion of this course, students will be able to:
1. Get comprehensive overview of the community psychology discipline
2. Know about the aims of community research
3. Know about emerging trends in community psychology
4. Define and explain the core values of community psychology
5. Analyze and evaluate various socio-cultural psychological models and behaviours
6. Develop preventive measures and design promotion programmes for better community Development

Course Type: MAJOR MANDATORY THEORY (Counselling)
Course Name: GUIDANCE AND CAREER COUNSELLING
No. of Credits: 04
On completion of the course, student will be able to–
1. Understand the current trends and future directions in career counselling.
2. Students will be able to apply the theories of career development for career Counselling

Course Type: MAJOR MANDATORY THEORY (Counselling)
Course Name: Areas of Counselling
No. of Credits: 04
Upon successful completion of this course, students will be able to:
1. Know the application of counselling at educational and career setting
2. Understand the counselling at workplace setting
3. Engage with the counselling at clinical setting
4. Study the counselling in special situations

Course Type: MAJOR MANDATORY PRACTICAL
Course Name: Practicum in the Area of Counselling Psychology

No. of Credits: 04
Upon successful completion of this course, students will be able to:
1. Write a case history and detailed report for the client.
2. Use the various counselling skills required in practice, such as assessment, conceptualization and planning interventions.
3. Conduct a session for counselling the client

Course Type: RESEARCH PROJECT
Course Name: Research Project: Dissertation
No. of Credits: 06
Upon successful completion of this course, students will be able to:
1. Complete the dissertation in their field of specialization

SVKT College,Deolali Camp,Nashik

Department of Political Science- Academic Year 2022-23

Programme Outcomes (PO) & Course Outcomes (CO) offered by the institution are stated and displayed on websites.

Course Outcomes:BA (Political Science)

Class	Semester	Course Title	Outcome
FYBA	I	11161 CC-1 A Introduction to Indian Constitution I	• Students will be able to understand the making of Indian Constitution. • Students will understand their Fundamental Rights, Fundamental Duties and Directive Principles of State. • Students can understand the Salient features of Indian Constitution. • Students will be able to understand the Basic Structure of Indian Constitution.
FYBA	II	12161 CC-1B Introduction to Indian ConstitutionII	• Students will be able to understand the structure, powers and functions of three organs of government and their mutual relationship and engagements. • Students will be able to explain Electoral System & Reforms of India.
FYBA/B.Com/ B.sc/ B.Voc /B.B.A/ B.C.SSemesterII	II	12999 Democracy, Election & Governance	• To get students introduced to the meaning of democracy and the role of governance.

SYBA	III	23161 DSE-1A Western Political Thought (S-1)	• The students will know the key ideas of the Political philosophers given in the course. • The students will be able to make a distinction among Locke and Rousseau on the state of nature, law of nature, forms of contract and the emergence of state from contract. • The students will be able to know how and why Machiavelli gave an overriding priority to pragmatism above ethics and values in operation of statecraft. • The students will be able to discern the meaning of utilitarianism and how Bentham and Mill differed from each other.
SYBA	III	23162 DSE-2A Political Journalism (S-2)	• Students will learn to establish the complex relationship between the communication, media and power politics. • Students will be able to make a Critical appraisal of practices adopted in political image management, campaigns, propaganda and censorship.. • The Students will be aware of Political Journalism their Definitions and Meaning. • The Students will understand about Political journalism Nature Scope. • The Students will understand about Pre-Independence, Post-Independence and World History. • The Students will be able to understand about Methods of Political Journalism, Reporting of Political Events, Political Interview, Commentary of Legislation

SYBA	III	23164 CC-1C An Introduction To Political Ideologies (G-2)	• Students are enabled to understand the nature and scope of Political Ideologies. • Students are acquainted with the theories and approachesto Political Ideologies. • Students will understand Nationalism and the difference between Progressive and Reactionary nationalism. • Students are enabled to understand Internationalism.
SYBA	III	23165 SEC- 2A Basics Of Indian Constitution	• To familiarize students with the working of the Constitution of India. • To acquaint students with the important features of the Constitution of India and with the basic framework of Indian Government. • Explaining the Concept and Nature of Fundamental Duties. .
SYBA	IV	24161 DSE-1B Western Political Thought (S-1)	• The Students will be able to understand Bentham's Utilitarianism; and John Stuart Mill's views on liberty and representative government. • The students will be able to understand Hegel idealism & theory of State. • The students will be able to discern the meaning of Utilitarianism and how Bentham and Mill differed from each other.
SYBA	IV	24162 DSE-2B Political Journalism (S-2)	• The Students will aware about Indian Political Process & Journalism like Role of Social Media in Political Process. • The Students will understand about Role of Election and Media: Loksabha and Maharashtra Vidhansabha 2014 and 2019 General Elections, Political Parties and Social Media.. • The Students will Understand Challenges before Political Journalism like Increase

			of paid News. • The Students will Aware Party Spirited News Papers & Commercialization, Media Saturation
SYBA	IV	24164 CC-1D An Introduction To Political Ideologies (G-2)	• Students will be able to understand Marxism and its significance in the study of Political Ideologies. • Students will know about various Marxian theories like Historical Materialism and Marxian State. • Students are enabled to understand Feminism along with liberal feminism and feminism in India with Caste system and patriarchy as its major challenges.
SYBA	IV	24165 SEC- 2B Basics Of Indian Constitution	• The Students will able to know basic knowledge of Constitution. • The Students will understand the features of fundamentals Duties. • The Students will able to know the Relations between Directive Principles and Fundamental Duties.
TYBA	V	35161 DSE-1C Public Administration (S3)	• The Students will able to know about Meaning, Nature, Scope and Significance of Public administration. • The Students will understand about Evolution of New Public Administration. • The Students will aware about Salient Features & Goals of New Public Administration. • The Students will understand Concept of Governance, Idea of Good Governance, E- Governance, Public-Private Partnership.
TYBA	V	35162 DSE-2C International Relations(S4)	• Familiarization with the key concept of the Discipline of IR • The Students will able to understand & Explain Approaches to International

			Relations (Idealism. Realism – Neo realism, System approach, Marxism) • The Students will able to understand & explain World War II and the Cold War.
TYBA	V	35164 CC-2E Local Self Government of Maharashtra	• The students will know the background of Panchayati Raj and its evolution and working till date. • The students will be enabled to understand 73rd Amendment and rural bodies. • The students will be able to explain the working of Panchayat samiti and Zilla Parishad. • Students will learn about the 9th Schedule of Indian Constitution in this regard.
TYBA	V	35165 SEC- 2C Samyukta Maharashtra Movement	• It's helps to know what the Regional aspiration in India and concept of Regionalism. • Student Will Able to understand & explain Samyukta Maharashtra Movement.
TYBA	VI	36161 DSE-1D Public Administration (S3)	• The Students will come to know Bureaucracy & their Meaning and Definitions, Administrative Reform. • The Students will aware about Personnel Administration & their Recruitment, Training, Promotion. • The Students will understand Budgetary Process in India, Gender Budgeting.
TYBA	VI	36162 DSE-2D International Relations(S4)	• The Students will able to understand The theory of Non- Alignment & meaning and basic principles of Non- Alignment. • The Students will able to understand Emergence of Non- Alignment, Non-Alignment as a Movement, Relevance of NAM In Post Cold War period. • Students will be aware about Limits of Globalization & Role of the Nation State.

			• Students will be aware about Neo-Colonialism, New International Economic Order, North – South Divination, South – South Co-operation.
TYBA	VI	36164 CC-2F Local Self Government of Maharashtra	• The students will be enabled to understand 74rd Constitutional Amendment and Urban bodies before the amendment. • The students will learn about the working of Nagar Panchayat, Municipal Council, Municipal Corporation. • Students will learn about the 12th Schedule of Indian Constitution in this regard. • Students will be able to explain State election commission, State Finance Commission and challenges before them. • Students will be enabled to understand the Limitations and Challenges before Local Self Government in Maharashtra.
TYBA	VI	36165 SEC- 2D Samyukta Maharashtra Movement	• Students will able to know the basic Concept of Sub – Regionalism. • Student will able to understand & analyse the Emergence & Development of Regional Consciousness in Maharshtra. • Explaining the Role of Indian National Congress in Samyukta Maharashtra Movement.

H.O.D.
Department of Political Science
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College,
Deolali-Camp, (Nasik)

S.V.K.T. Arts, Science and Commerce College, Deolali Camp, Nashik

DEPARTMENT OF COMMERCE

COURSE OUTCOMES (POs) FOR UNDERGRADUATE COURSES- (2023-24)

F.Y.B.Com Course Outcomes (COs) of Bachelor of Commerce (B.Com.)		
Semester I	Financial Accounting-I (Course Code 112)	CO1: Students will be able to acquire in-depth knowledge in Financial Accounting.
		CO2: Students will be able to understand the process and importance of conversion of single entry into double entry system.
		CO3: Students will gain knowledge about GST and its implications.
Semester II	Financial Accounting-II (Course Code 122)	CO1: Students will be able to impart knowledge of various software used in accounting.
		CO2: Helps to impart the knowledge about final accounts of charitable trusts.
		CO3: To impart knowledge about valuation of intangible assets.
		CO4: Helps to impart the knowledge about accounting for leases.
		CO5: Students will be able to acquire in-depth knowledge.
Semester I	Consumer Protection and Business Ethics-I (Course Code 116D)	CO1. Students will be acquainting with knowledge and maturity to understand the consumer's interest
		CO2. Students will get training to face emerging issues..
		CO3. Students will be acquainting with knowledge and application of laws.
		CO4. Student can understand the defend and safety in e-commerce.
		CO5. Helps to understand the issues relating to e-commerce, e-Banking emerging issues and internet regulations.
Semester II	Consumer Protection and Business Ethics-II (Course Code 126D)	CO1: Student will be able to acquaint with the knowledge and maturity to understand the Business Ethics.
		CO2: It helps for the application of CSR in various sectors.
		CO3: Students will analyse the corporate governance in India.
		CO4: It helps to understand and achieve sustainable development.

Semester I	Organisational Skills Development-I (Course Code 115A)	CO1. Students will be able to understand the conceptual clarity on meaning of Modern Office, internal and external factors of an office environment.
		CO2. Students will be able to understand the conceptual clarity on the meaning of Scientific office management and understanding various techniques for scientific management.
		CO3. Students will be able to understand the technical skills and Critical analysis skills.
		CO4. Students will be able for the development of Technical and Analytical abilities.
Semester II	Organisational Skills Development-I (Course Code 125A)	CO1: Students will be able to understand the conceptual Clarity Goal Setting and Goal Measurement, Enhancing the Time Management Skills.
		CO2: It enables for Enhancing Communication Skills, Usability of latest communication media.
		CO3: It enables for development Technical and analytical skills.

Dr. V.G.Gaikwad
Head of Department
(Commerce Dept.)
Smt. Vimlaben Khimji Tejokaya
Arts, Science & Commerce College,
Deolali Camp, Tal. & Dist. Nashik

S.V.K.T. Arts, Science & Commerce College Deolali Camp
PHONE
2491820

Dr. S.S.Kale
Principal
PRINCIPAL
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College
Deolali-Camp (Nasik)

S.Y.B.Com Course Outcomes (COs) of Bachelor of Commerce (B.Com.)		
Semester III	**Business Communication-I** Course Code -: 231	CO 1: Understanding of basic knowledge of Business Communication.
		CO 2: Understanding the importance and Essentials Qualities of business letters.
		CO 3: Understanding the knowledge about soft skills.
		CO 4: To create awareness about soft skill among the students
		CO 5: To create ability among the students for writing resume and Job application letter.
		CO 6: To create ability among the students for Business Correspondence
Semester IV	**Business Communication-II** Course Code -: 241	CO 1: Understanding of basic knowledge of Report Writing and Internal Correspondence and Import-Export Correspondence.
		CO 2: Learning the Recent Trends in Business Communication.
		CO 3: To create ability among the students for Drafting of Business Letters.
		CO 4: To create ability among the students about Writing Formal Mails and Blog writing.
Semester III	**Corporate Accounting -I** **Course Code: 232**	CO 1: Developing understanding on applicability of various Accounting Standards.
		CO 2: Knowledge about types of profit and their apportionment
		CO 3: Conceptual Clarity and Practical understanding.
		CO 4: Analytical skills enhancement and decision-making skills of students will be developed.
Semester IV	**Corporate Accounting-II** **Course Code: 242**	CO 1: Developing understanding on accounting procedure for Holding companies.
		CO 2: Conceptual understanding, Practical application skills in the process of accounting for Absorption.
		CO 3: Practical understanding on Process of Liquidation on companies.
		CO 4: Updating knowledge on recent advances in the field of Accountancy.

Semester III	**Business Management -I** **Course Code: 234**	CO 1: Students will get an idea about the basic managerial process.
		CO 2: Students will get an idea about how planning works in real life.

		CO 3: Students will understand the process of implementation of both the concepts.
		CO 4: Students will understand importance of proper direction and team work.
Semester IV	**Business Management-II Course Code: 244**	CO 1: Students will get an idea about the basic motivational tools used in the field of management.
		CO 2: Students will get an idea about how leadership influences organizational success.
		CO 3: Students will understand the significance of coordination and control in modern business management.
		CO 4: Students will come across various emerging trends in management.

Semester III	**Elements Of Company Law - I Course Code: 235**	CO 1: Acquaint with knowledge and maturity to understand Company law 2013.
		CO 2: To Acquaint knowledge and application of formation and incorporation of Company.
		CO 3: To understand the knowledge about the principal documents of the company.
		CO 4: To inculcate skills and knowledge about the shar capital of the company.
Semester IV	**Elements Of Company Law - II Course Code: 245**	CO1: To Acquaint knowledge and maturity to understand Company management.
		CO2: To Acquaint with knowledge and role of key managerial person of the Companies and Rules about CSR.
		CO3: To get training in to various types of meeting and procedure.
		CO4: To enhance skills and knowledge about the E- governance of the company and winding-up of the company.

Semester III	**Cost and Works Accounting -I (Basics Of Cost Accounting) Course Code: 236(E)**	CO1: To remember and understand basic concept of cost accounting. Development of an overall outlook of Cost Accounting
		CO2: Ability to prepare a cost sheet.
		CO3: 1) Ability to understand which procedures are used for purchasing the material 2) Understand the documentation for purchase procedures.
		CO4: Understanding methods used for controlling the inventory.
Semester IV	**Cost& Works Accounting-II Course Code: 246(E)**	CO1: Understanding various methods used in the pricing of the issue of materials.
		CO2: Enabling to calculate wage payment and incentives.
		CO3: Understanding the process of job analysis, job evaluation and merit rating.
		CO4: Insight into recent processes used for cost reduction.

Semester III	**Marketing Management - I** **Course Code: 236(H)**	CO1: To give the students the basic knowledge of Marketing Management.
		CO2: To develop the awareness amongst the students about how marketing strategy plays a vital role in making today's customers want to buy the products and services.
		CO3: To enable the students to plan and make the best possible utilization of all the human and physical resources so that predetermined marketing objectives of the firm can be achieved.
		CO4: To make the students able to explain value of Market Research and its impact in decision making.
Semester IV	**Marketing Management -II** **Course Code: 246(H)**	CO1: Students will understand how Green Marketing is necessary for marketers to use resources efficiently, so that organizational objectives are achieved without waste of resources.
		CO2: It will help the student to apply the various techniques and methods of E- Marketing practically.
		CO3: It will help them to implement the knowledge of Digital Marketing in practical by enhancing their skills in the field of Marketing.
		CO4: It will help them to gain a solid understanding of the theoretical and conceptual knowledge of International marketing.

Dr. V.G.Gaikwad
Head of Department
(Commerce Dept.)
Smt. Vimlaben Khimji Tejokaya
Arts, Science & Commerce College,
Deolali Camp, Tal. & Dist. Nashik

S.V.K.T. Arts, Science & Commerce College Deolali Camp
PHONE
2491820

Dr. S.S.Kale
Principal
PRINCIPAL
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College
Deolali-Camp (Nasik)

T.Y.B.Com Course Outcomes (COs) of Bachelor of Commerce (B.Com.)		
Semester V	Business Regulatory Framework (351)	CO1. To provide conceptual knowledge about the framework of business Law in India. CO2. To orient the students about the legal aspect of business. CO3 To create awareness among the students about legal environment relating to the Contract Law, Partnership Act, Sale of Goods Act in India CO4. To understand the emerging issues relating to e-commerce, e-transaction issues and E Contracts
Semester VI	Business Regulatory Framework (361)	CO1. To develop general awareness of Business Law among the students. CO2. To have a understanding about the landmark cases/decisions having impact on business laws CO3 To acquaint the students on relevant developments in business laws to keep them updated. CO4. To enhance capacity of learners to seek the career opportunity in corporate sector and as a business person.
Semester V	Advance Accounting – I (352)	CO1. To acquaint the student with knowledge about various concepts, objectives, and applicability of some important accounting standards. CO2. To develop the knowledge among the students about reorganization of business regarding restructuring the capital. CO3. To empower to students with skills to prepare the investment account in summarize manner.
Semester VI	Advance Accounting – II (362)	CO1. To empower to students about the branch accounting in simple. CO2. To understand the procedure and methods of analysis of financial statements.
Semester V	Auditing (354)	CO1. To get knowledge about concept of Checking, Vouching, Verification and Valuation, Types of Audit Report and Auditing Assurance Standard. CO2.To know the various new concepts in computerized system and Forensic Audit.
Semester VI	Taxation – II (364)	CO1.To understand the basic concepts of Income Tax Act, 1961 and create awareness of direct taxation among the students. CO2. To understand the income tax rules and regulations and its provisions. CO3. To have a comprehensive knowledge of calculation various types of income. CO4. To know the recent changes made by the finance bill (Act) every year and its impact on taxation of person.
Semester V	Marketing Management-II (355H)	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.
Semester VI	Marketing Management-II (365H)	CO1. The primary purpose of this course is to brief students about agricultural marketing, various marketing regulations, importance of global marketing and various measures used by cyber security marketers in today's digital world.

Semester V	Marketing Management-III (356H)	CO1.To introduce the concept of advertising and advertising media. CO2. To provide the students the knowledge about appeals and approaches in advertisement. CO3. To acquaint the students to the economic ,social and regulatory aspects of advertising. CO4. To make the student understand the role of Brand Management in marketing.
Semester VI	Marketing Management-III (366H)	CO1.To introduce the concept of Marketing of Service. CO2. To provide the students the knowledge of Creative Advertisements. CO3. To acquaint the students to various social media marketing. CO4. To make the student understand the technique and process of Marketing Control and Audit.
Semester V	Cost & Works Accounting-II (355E)	CO1.To provide the knowledge about the concept and principals of overheads. CO2. To introduced the cost accounting standards and the cost accounting standard board. CO3. To understand stages involved in accounting of overheads. CO4. To build and ability towards stragic overhead accounting under activity based costing.
Semester VI	Cost & Works Accounting-II (365E)	CO1.To provide knowledge about various methods of costing. CO2. To understand the applications of costing methods in manufacturing and service industry. CO3. To enable students to prepare cost statemenets accoriding to types of manufacturing and service industry. CO4. To build the applicability of cost accounting standard in the methods of costing
Semester V	Cost & Works Accounting-III (356E)	CO1.To prepare learners to understand the basic techniques in cost accounting. CO2. To understand the learner, application of cost accounting techniques in cost control & decision making. CO3. To enable the learners to prepare various types of budgets.. CO4. To learn the basic concept of uniform costing and interfirm comparison.
Semester VI	Cost & Works Accounting-III (366E)	CO1.To impart knowledge about standard costing and variance analysis. CO2. To learn about pricing policy and its implementation. CO3. To know the related cost accounting standard and cost management practices in specipic sectors. CO4. To provide a conceptual understanding of procedures and provisions of cost audit. .

Dr. V.G.Gaikwad
Head of Department
(Commerce Dept.)
Smt. Vimlaben Khimji Tejokaya
Arts, Science & Commerce College,
Deolali Camp, Tal. & Dist. Nashik

Dr. S.S.Kale
Principal
PRINCIPAL
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College
Deolali-Camp (Nasik)

S.V.K.T. ARTS, SCIENCE AND COMMERCE COLLEGE, DEOLALI CAMP

DEPARTMENT OF COMMERCE

PROGRAM OUTCOMES (POs) FOR UNDERGRADUATE COURSES

1. Program:B.Com: Academic Year 2023-24

After completing the Bachelor of Commerce Degree, Students are able to:

POs	Program Outcomes
PO1	Commerce education is that area of education, which develops the required knowledge, skills and attitudes for the handling of Trade, Commerce and Industry.
PO2	Commerce education is entirely different from other disciplines. Hence, it must charter Course routes to service the aspirations of the nation.
PO3	To meet the growing needs of the business society, there is greater demand for sound development of commerce education.
PO4	The relevance of commerce education has become more imperative; this means a marked change in the way commerce and management education is perceived in India.
PO5	The Commerce education is dedicated to developing tomorrow's leaders, managers, and professionals.
PO6	Commerce education is that area of education, which develops the required knowledge, skills and attitudes for the handling of Trade, Commerce and Industry.
PO7	Commerce education is entirely different from other disciplines. Hence, it must charter Course routes to service the aspirations of the nation.
PO8	To meet the growing needs of the business society, there is greater demand for sound development of commerce education.

Dr. V.G.Gaikwad
Head of Department
H.O.D.
(Commerce Dept.)
Smt. Vimlaben Khimji Tejokaya
Arts, Science & Commerce College,
Deolali Camp, Tal. & Dist. Nashik

S.V.K.T. Arts, Science & Commerce College Deolali Camp
PHONE
2491820

Dr. S.S.Kale
Principal
PRINCIPAL
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College
Deolali-Camp (Nasik)

2.6.1 Teachers and students are aware of the stated Programme and course outcomes of the Programmes offered by the institution. NEP 2020 Pattern (2023-24)

Subject/Course	Course code	Course outcome
Management Accounting	MA501MJ	1) Students will understand importance of management accounting and functions of Management Accounting. 2) Students will understand various decision-making techniques of marginal costing and its application in modern business. 3) Product Pricing decision-making capacity of the students will be developed. 4) Learners can prepare various budgets independently
Industrial Economics	IE502MJ	1. Learners will be acquainted with the concepts of industrial economics 2. The learners will get exposed to recent changes in industrial finance, measures to correct industrial imbalance etc. 3. The students will identify the location of industries and the concepts associated therewith 4. The learners will be aware of the industrial profile of Maharashtra 5. The students will develop an ability to apply and interpret the concepts of industrial economics
Research Methodology	RM529MJ	1. Students will understand research process and can explore various ethical issues and modern practices in research. 2. Students will gain fundamental knowledge about Methods of Data Collection and formulating questionnaire. They will understand the process of Analysis and Interpretation of data. 3. Students will grasp knowledge on developing the most appropriate methodology for their research studies 4. Students will develop knowledge on how to write a research report by using different research methods and techniques.
Production & Operation Management	PO520MJ	1. Students will be able to define the main goals, duties, and review of production and operation management and understand the significance of successful POM in achieving operational effectiveness and competitiveness. 2. Students will thoroughly understand production systems, which will serve as a strong basis for their further exploration

		of production and operation management principles and practices. 3. Students will learn about various operations management strategies and tactics, including inventory control and lean operations management. Additionally, they will learn about current trends and advancements in the industry as well as the difficulties faced in operations management. 4. Students will have a strong foundation in supply chain management principles, enabling them to apply them and optimize the movement of products and information across the supply chain to increase operational effectiveness and customer satisfaction.
E-Commerce	EC521MJ	1. Students will understand the Role of E-Commerce Industry and the utility of ECommerce models. 2. Students will gain insight knowledge for E-Payment systems. How technology plays a vital role in the E-commerce sector will be leant by them. 3. Students will be able to understand the recent e-marketing tools and their utility. How search engine operation help to search data will be learnt by them. 4. Functioning of Digital economy will be understood. Students will gain knowledge about various cyber threats and understand the importance of IT Act and Cyber security
Financial Management	FM522MJ	1. Students will understand the Financial System of India ad its role and importance in financial management. 2. Students will understand the concepts of financing and will gain knowledge on Financial Statement Analysis . 3. Students will understand how to make Investment Decisions and the importance of Capital budgeting techniques. 4. Students will have a strong foundation in understanding the meaning and nature of Working Capital management and to formulate Credit and Collection policy. 5. They will gain knowledge on how to evaluate a project and provide recommendations for the same.

Financial Analysis & Control	FA551MJ	1) To understand the Financial Analysis Techniques, Funds Flow and Cash Flow Analysis, and AS & Ind AS. 2) To apply the Financial Analysis Techniques for analysis and interpretation. 3) To understand the concept budgeting and its Appraisal Methods. 4) To analyze the financial information for decision-makings.
Strategic Management	ST552MJ	1. Students will understand the concept and process of strategic management. Emergence of changes in modern business environment will be leant be them. 2. Students will develop strategic analytical skills to design an effective strategic plan. They will gain technical and managerial skills in various areas of business administration. 3. Students will learn Development of Applicability skills for effective plan implementation. They will gain technical skills required for evaluation of alternatives and analytical skills for choice among alternatives 4. Students will have a strong foundation in understanding the formulation of sound functional Strategy in various areas of business. They will develop Analytical and Managerial Abilities for critical evaluation.
Business Ethics & Professional Values	BV568MJ	1. Students will develop conceptual skills and understand the importance of business ethics adopted in different areas of business. Additionally they will be recognizing the significance of Professional Values and ethical obligations. 2. Students will improve analytical ability and gain technical and practical oriented skills. 3. They will build an understanding on practical importance of healthy distinctions on account of ethical behavioural approach towards stakeholders. Students will gain knowledge to understand Corporate Governance and Value Based Management systems. 4. Students will have a strong foundation in recognizing the unethical issues in Finance, Marketing, IT, HRM and at workplace. They will be able to recognize environmental issues

		and itsimpact on Business. How to achieve Sustainable Development will be understood by them.
Corporate Social Responsibility	CS569MJ	1. Students will be able to understand the role of corporate social responsibility towards multistakeholder perspectives. 2. Students will thoroughly study theories, models, CSR policies and governance. 3. Students will learn about implementation of CSR programmes in corporations. 4. Students will have a strong foundation in the monitoring and measuring the impact of CSR programmes.
Elements of Knowledge Management	KM570MJ	11. Students will develop conceptual skills and understand the importance of knowledge management. Additionally they will learn how important it is to create, share and store knowledge. 2. Students will improve analytical ability and gain technical and practice oriented skills. 3. Students will learn about how knowledge management is effective for change management. They will understand how knowledge management plays a pivotal role in various cross functional areas. 4. Students will have a strong foundation in knowledge strategies, enabling them to apply them and optimize the knowledge database. Students will understand the importance of knowledge audit and how it is beneficial for satisfaction of the organization.

2.6.1 Teachers and students are aware of the stated Programme and course outcomes of the Programmes offered by the institution. 2019 Pattern		
Management Accounting	**101**	1- Enable to enhance the abilities of learners to develop the concept of management accounting and its significance in the business. 2- Developing the abilities of learners to analyze the financial statements. 3- To enable the learners to understand, develop and apply the techniques of management accounting in the financial decision making in the business corporates 4- The students can develop competence with their usage in managerial decision making and control
Strategic Management	**102**	1- The students get the knowledge on emerging changes in the modern business environment 2- Enable to develop the analytical, technical and managerial skills of students in the various areas of Business Administration 3- It will help to empower to students with necessary skill to become effective future managers and leaders 4- It will enable to develop Technical skills among the students for designing and developing effective Functional strategies for growth and sustainability of business.
Production & Operation Management	**113**	1- It enables to understand among students the deep insight of Production & Operation Management. 2- It helps to understand & identity business problems involving operational function, planning and control, design development and quality management. 3- Enable to demonstrate awareness and importance of application, operation and supply chain management. 4- Students will be able to develop skills necessary to effectively analyse and synthesize the many inter relationship inherent in complex socio-economic productive systems. 5- Increase the knowledge and perspective to gain from emerging trends in production and operation management.

Financial Management	**114**	1- Help to acquaint the student with knowledge of various Financial Management terminologies (Investment, Credit Planning, Working Capital Management). 2- Understanding the concepts relating to Financing & Financial Statement Analysis 3- Student will be able to utilize the information gathered to reach an optimum conclusion by a process of reasoning 4- It will enable the students to use their learning to evaluate, make decisions and provide recommendations
Financial Analysis & Control (Compulsory)	**201**	1- This enables the students to acquire knowledge of financial analysis and control tools 2- It will help to make appropriate application and uses of financial analysis and control
Industrial Economics (Compulsory)	**202A**	1- It helps to provide the knowledge to the students about the basic issues of industrial economics. 2- The students will understand the industrial profile of India and the industrial policy of government of India.
Business Ethics & Professional Values	**213**	1-This will help to raise the student's general awareness on the ethical dilemmas at work place 2- This enables to understand the differing perceptions of interest in business related solutions 3- It will help to understand the concept of Corporate Social Responsibility and explore its relevance to ethical obligations and ethical ideals present in the relationship between employers and employees 4- To investigate whether ethics set any boundaries on competition, marketing, sales and advertising 5-**:** Enable the students to validate or correct, personal ideas about various ethical perspectives 6- Enable students to develop their own considered judgment about issues in Business Ethics 7- To foster more careful, disciplined thinking in trying to resolve issues in business ethics

		8- It helps to prepare students to play a constructive role in improving the sustainable development with which they may become involved
Elements of Knowledge Management	**214**	1- It will help to develop Analytical and Research oriented skills among the students. 2- To understand value application and relevance of Knowledge management in today's corporate world. 3- This will promote research and innovation ideas based on Knowledge Management. 4- To enhance knowledge level and practice of linking theoretical background with applied Social Science
Business Finance	**301**	1- Students will be able to understand the role and importance of corporate finance, and learn the calculation value of money. 2- Students will be able to understand the financial planning, theories of capitalization and estimation of finance need of firm 3- Students will be able to learn the sources of finance to be tapped for running business successfully. 4- Students will be able to apply best practice in working capital management.
Research Methodology for Business	**302**	1- Understanding of basic knowledge of Business Research, Research Process, ethical issues and modern practices in research. 2- Learning the formulation of Research Problem, Hypotheses, Research Design and Sampling 3- Gaining knowledge of Sources of Data Collection Measurement & Scaling, Processing of Data 4- Understanding the procedure of Research Report and mode of citation and bibliography
Human Resource Management	**313**	1- The Definition and meaning of Human Resource Management, its Concept, Approaches, Functions. Can identify that the HRM is profession or not. Able to cope with the concept Human Resource Environment. Place of female employee in the organization. Identify the changing Role of Human Resource Management.

		2- The Objectives of Human Resource Planning and Development. Need and Estimation for Human Resource Planning and Development. They Can understand the recruitment and selection process. Understand the concept of Retention of Manpower, Succession Planning. 3- Understand the Basic Concept and Purpose of Training, Importance, Benefits, Training process and methodology. Able to differentiate the various methods of Training and Aids, Evaluation of Training Programmes. Identify the changing Role of performance appraisal and result-based performance with the new concepts like errors, 360 Degree Feedback. Able to identify the concept of merit rating, job Evaluation, Job Enlargement, Job Enrichment, Job 4-**:** Kinds of Retirement, Resignation, Discharge, Dismissal, Suspension, Lay off. He Identify recent trends in HRM
Organizational Behaviour Course	**314**	1- The Definition and meaning of organizational Behaviour ▪ Able to cope with the role of technology in organization. ▪ Describe the theoretical and conceptual framework of Organizational Behaviour ▪ Analyze the impact of globalization on OB. 2- The explain the horizontal and virtual designs ▪ Understand the characteristics organizational culture. ▪ Identify the process of impression management, define the concept of Personality. ▪ Explain the attributes of personality and various dimensions of attitude. 3- The defines the concept of motivation. ▪ Capacity to describe the types of motives. ▪ Capacity to analyse motivational process. ▪ Describe the theory of motivation. ▪ The definition of Emotional Intelligence, and explain the characteristics and Importance. 4- The definition of stress, describe the causes of stress. ▪ Describe the effects of stress. ▪ The definition of Conflict and describe the types of conflict. ▪ The

		definition of Group and team. ▪ Explain the types of Teams and Team building.
Capital Market and Financial Services	**401**	1- Students will be able to learn the importance and working of capital market. 2- Student will be able to understand the working of BSE and NSE, and OTCEI in detail. 3- Students will be able to know the role of inter-mediatories, Mutual funds. Portfolio management. 4- Students will be able to know the role of SEBI in regulating stock exchanges and investors' education, financial advisors.
Industrial Economic Environment	**402**	1- Will understand the impact of economic and non – economic factors affecting industrial environment 2- Will understand role of various types of industries in India like small scale industries, public sector industries, MNCs etc 3- Critically evaluate industrial polices in India. Analyze the impact of new industrial policy adopted by India. 4- Will understand role, progress and problems of manufacturing and service industries in India
Recent Advances in Business Administration	**413**	1- The Definition and meaning of change management and get the knowledge about the approach's management change and Important feature. Can identify dimensions Approaches towards managing change. Able to cope with the futuristic and Strategic approaches due technology. 2- Define the concept, strategies internal and external customers in customer centric approach. Able to know the challenges before customer centric organization. Identify the best practices and way to measure the success of customer centric company. 3- Understand the concept and significance of Global Management. Able to Know the cross-cultural Management issues. Able to identify to aquatint the role, importance and current trends in merger 4- Understand the concept significance and techniques of turnaround management. Identify the prerequisite for

		success. Able to identify the concept and significance of Restructuring and Reengineering of Business. Able to cope with the steps of innovation management. And also, the role of various institution for promoting.

Maratha VidyaPrasarakSamaj's
S.V.K.T Arts, Commerce & Science College Deolali Camp Nashik.
Program Outcomes, Program Specific Outcomes, and Course specific Outcomes

2022-23

Department of Botany

Program outcome: B.Sc. (Botany)	
1	Apply the knowledge of biology to make scientific queries and enhance the comprehension potential.
2	It also provides opportunities to learn experimental concepts related with life science.
3	Successful transfer of scientific knowledge both orally and in writing.
4	Function as an individual, as a member or a leader to perform a task in class room situation or during field study.
5	Acquired the skills in handling scientific instruments, planning and performing in laboratory experiments. The skills of observations and drawing logical inferences from the scientific experiments. Analyzed the given scientific data critically and systematically and the ability to draw the objective conclusions. Been able to think creatively (divergently and convergent) to propose novel ideas in explaining facts and figures or providing new solution to the problems.
6	Insist the significance of conserving a clean environment for perpetuation and sustainable development. study incessantly by self to cope with growing competition for higher studies and employment.

7	Developed scientific outlook not only with respect to science subjects but also in all aspects related to life. Realized that knowledge of subjects in other faculties such as humanities, performing arts, social sciences etc. can have greatly and effectively influence which inspires in evolving new scientific theories and inventions. Imbibed ethical, moral and social values in personal and social life leading to highly cultured and civilized personality.

Program Specific outcome : B.Sc. (Botany)	
1	Students acquire fundamental Botanical knowledge through theory and practical as well as to explain basis plant of life, reproduction and their survival in nature
2	To enrich knowledge through problem solving, minor/major projects, seminars, tutorials, review of research articles/papers, participation in scientific events, study visits.
3	Helped to understand role of living and fossil plants in our life.
4	To create awareness about cultivation, conservation and sustainable utilization of biodiversity
5	To know advance techniques in plant sciences like tissue culture, Phytoremediation, plant disease management, formulation of new herbal drugs etc.
6	Students able to start nursery, mushroom cultivation, biofertilizer production, fruit preservation and horticultural practices.
7	To help students to build-up a progressive and successful career in botany

Course outcome : B.Sc. (Botany) Semester I		
Class	**Course Title**	**Outcome**
F.Y.B.Sc. Sem-I	BO-111- Plant life and utilization I	• Study of cryptogams to understand their Diversity, know evolution of algae, fungi and bryophytes. • Discuss about morphological structure, classification, reproduction & economic importance of algae. • Study and impart knowledge about the general Characteristics, structure, reproduction, life history and economic importance of fungi. Understand the features of Lichens. To get knowledge about classification, mode of reproduction and detailed study of some important bryophytes.
	BO-112-Plant morphology and Anatomy	• Understand the floral morphology of angiosperms and different theories related to the evolution of advanced leaf like or floral parts of the plants. • To understand the types of an inflorescence and its significance. To provide knowledge about morphological and internal structure of plants. • Students identify the different plants on the basis of its morphological and anatomical structure • Plant anatomy and embryology are much awaited subject to study the internal structures and structure & function of reproductive organs in plants • The course paper cover basic aspects of anatomy of plant tissues such as meristems, epidermis, permanent tissues, complex tissue systems and organ structure of plant
	BO-113 Practical based on BO 111 & BO 112	• To study and get knowledge about parts and working principles of compound and dissecting microscope. • Students are capable to become practical knowledge about micro-preparation and

		observation of permanent slides of genera. • Learn the microscopic technique, familiarize with the external and internal structure of lower and higher group organisms. Study of Lichens and its types. • Understand in details with practical knowledge of the morphology of different types of inflorescence. Practical understanding of the different types of fruits and their morphology. • Students able to understand the internal structure of monocot and dicot (stem, leaf and root), secondary thickening, anomalous secondary thickening (Dicot and Monocot) and nodal anatomy.
S.Y.B.Sc. Sem-lll	BO-231:Taxonomy of Angiosperms and Plant Ecology	• Understand the objective, scope and importance of angiosperms. • Understand the concept of Artificial, Natural and Phylogenetic system of classification. its merits & demerits • Understand the system of binomial nomenclature advantages and disadvantages • Aware various plant families and its economic importance • Understand the Plant ecology, concept of population, community and ecosystem as well as plant adaptation to environment
	BO-232: Plant Physiology	• Acquire knowledge on the physiological functions of plant. • To become knowledgeable in plant and its water relations. • Students will able to gain knowledge on role of micronutrients in plant growth, their development and understand the mechanism of nitrogen metabolism • Students will be able to understand the various physiological life processes in plant • Learn about the movement of sap & absorption of water in plant body • Understand the Photoperiodism concept of short day plants, long day plants and day neutral plants.

	BO 233: Practical based on BO 231 & BO 232	• Students will gain a clear understanding of the most advanced plant division i.e. Angiosperms. • Understand the floral morphology of angiosperms and different theories related to the evolution of advanced leaf like or floral parts of the plants. • Understand in detail practical knowledge on study of plant families and its economic importance • Understand the ecological adaptation in hydrophyte and xerophytes with the help of T.S. of plant material. • Practical knowledge on how to measure the abundance, frequency of a species, population or community using quadrate method. • Understand knowledge on different tools of taxonomy and ecological instruments. • Students able too understand phytochemical test for starch and protein in germinating and non - germinating seeds • To understand Isolation of Leaf Protein Concentration (LPC) from suitable plant material. • Acquire knowledge about the Determination of DPD, Determine rate of transpiration in different condition of environment. Student will gain knowledge about Arc Auxanometer, Curling exp. Imbibition in seed, • Students will gain a clear understanding of theCommercial biofertilizers b. Imbibition in seeds c. Ringing experiment d. Arc Auxanometer e. Spectrophotometer f. Nitrogen fixing bacteria / BGA (specimen/ slide) • Student will Calculate seed germination percentage and vigor index. • Knowledge on the various taxonomic techniques used in field study and various procedure of plant specimen preservation for further study.
T.Y.B.Sc. Botany **(Semister-V)**	**BO: 351 Cryptogamic Botany (Algae & Fungi)**	• Know the salient features of Cryptogams plants. •Become aware of the status of cryptogams as a group in plant kingdom. •Understand the life cycles of selected genera. •Learn about the economic and ecological

		importance of Cryptogams plants.
	BO: 352 Archegoniate	•Introduction of Archegoniate general character. •Range of thallus organization origin of bryophytes •Study of life cycle of bryophytes. •Study of life cycle of Pteridophytes. •Ecological & Economic importance of Pteridophytes.
	BO: 353 Spermatophyta and Palaeoboatny	• Understand the diversity of angiosperms. • Understand the comparative account among the families of angiosperms. • Know the economic importance of the angiosperm plants. • Understand the distinguishing features of angiosperm families • Understand Gymnosperms with respect to distinguishing characters, comparison with Angiosperms, economic importance and classification. • Understand the life cycles of Pinus and Gnetum.
	BO: 354 Plant Ecology	• Know the scope and importance of the discipline. • Understand plant communities and ecological adaptations in plants. • Learn about conservation of biodiversity, Nonconventional Energy and Pollution. • Discover botanical regions of India and vegetation types of Maharashtra. • Ecological Impact Assessment • Ecological management. •Remote sensing.

	BO: 355 Cell & Molecular Biology	• Gain knowledge about "Cell Science. Understand Cell wall Plasma membrane, Cell organelles and cell division. • Learn the scope and importance of molecular biology. • Understand the biochemical nature of nucleic acids, their role in living systems, experimental evidences to prove DNA as a genetic material. • Understand the process of synthesis of proteins and role of genetic code in polypeptide formation.
	BO: 356 Genetics	• Introduction to genetics concept application. • Mendelism,NeoMendelism (gene interaction) • Multiple alleles definition concept character. • Linkage recombination & crossing over. •Mutation concept •Numerical alteration of chromosome. •Structural alteration of chromosome. •Sex linked Inheritance:
	BO: 357 : Practical based on BO:351 and BO:352	•Study of Algae with respect to systematic position, thallus structure and reproduction . •Study of Fungi respect to systematic position, thallus structure and reproduction . •Study of *Marcantia ,Anthoceros and funaria* with respect to systematic position, morphology of thallus . •Study of sporophyte evolution in Bryophytes with help of permanent slides . •Study of Selaginella, Psilotum, Equisetum with respect to taxonomic position ,Morphology of sporophyte,anatomy reproductive structures. •Study of Stelar evolution in pteridophytes with the help of permanent slides.

	BO:358 Practical based on BO:353 and BO:354	• Study of following families with reference to systematic position, Diagnostic characters, floral formula, floral diagram . • Preparation of botanical keys: Indented and Bracketed keys by using vegetative and reproductive characters . • Study of Internal and External morphology of *Gnetum* and *Pinus*. • Study of Polluted water body with ref. To BOD. • Study of physiochemical properties of water body by using sacchidisc,PH meter and electric conductive meter. • Acquisition of ecological data of particular locality by using GPS /altimeter /geographical maps etc. • Study of suitable ecosystem by line /belt transects method.
	BO359 :Practical based on BO355 and BO356	• Cytological techniques –preparation of fixatives preparation of stains . • Isolation of nuclei and characterization. • Study of various stages of mitosis and meosis . • Induction of C metaphase in suitable plant material • Study of chromosome Morphology. • Isolation of plant genomic DNA by suitable method • Estimation of plant DNA by DPA method Extraction and estimation of RNA by orcinol method. • Preparation of salivary gland chromosomes in *chironomous*larvae . • Genetic problem on gene mapping using three point test cross data . • Study of structural heterozygotes in Rhoeo. • Problem on quantitative inheritance. • Problem on multiple alleles.
	BO3510:Medicinal Botany	• **Medicinal plants**: history scope and importance. Indigenous Medicinal Sciences Definition and Scope. • **Ayurved**:History, origin, Panchamahabhuta, Saptadhatu and tridosha concept . • **Siddha**:Origin of siddha medicinal system. • **Unani**: History concept ;Umoor-e-tabiya ,tumors treatments . • Conservation of endangered and endemic medicinal plants. • Preparation of medicinal plants. • Ethnobotany and folk medicine .
	BO3511:plant diversity and Human health	• **Plant diversity and its scope** –Genetic and species diversity, plant diversity at the ecosystem level. • Agro biodiversity and cultivated plant taxa, wild taxa .value and uses of biodiversity . • **Loss of biodiversity**: Loss of genetic diversity, projected scenario for biodiversity loss. • **Management of plant biodiversity**: organisation associated with biodiversity management. • **Conservation of biodiversity**: conservation of genetic diversity ,species diversity ,in situ ex situ conservation . • Role of plant in relation to Human Welfare importance of forestry their utilisation and commercial aspect .Avenue trees ,ornamental plants of India .Alcoholic beverages through

		ages .fruits and nuts.
Course outcome : B.Sc. (Botany) Semester II		
Class	**Course Title**	**Outcome**
F.Y.B.Sc. Sem-II	BO-121 : Plant life and utilization II	• To get knowledge about plant diversity such as Pteridophytes, Gymnosperms and Angiosperms. • To get knowledge about classification, mode of reproduction and detailed study of some important Pteridophytes. • To study Gymnosperms, classification ,reproduction ,utilization and economic importance. • To understand about Angiosperms, comparative account of monocotyledons &dicotyledons Utilization and economic importance of angiosperms.
	BO-122 : Principles of plant science	• To understand the scope of plant physiology. • To get knowledge about diffusion in plants, imbibition as a special type of plant diffusion. • To understand the osmosis three types of solution such as Hypotonic, .Isotonic and Hypertonic.to study the exo-osmosis &endo-osmosis, plasmolysismechanism& its significance. • To understand about the concept of plant growth & growth regulator & their significance. • Acquire knowledge on ultrastructure of cell. Comparative account of prokaryotic and eukaryotic cell. • Acquire knowledge on ultrastructure of cell. • Understand ultrastructure of cell wall, plasma membrane and cell organelles as well as cell cycle in plants and stages of mitosis & meiosis. • To understand the structure of DNA types of DNA & chromosomes, structure of RNA.

	BO-123 Practical based on BO-121 & BO-122	• Understand the internal structural variation of pteridophytes and gymnosperms through T.S. and L.S Study of utilization & economic importance of pteridophytes, Gymnosperms & Angiosperms. • The laboratory course gives practical knowledge to perusing students in the field of cytology, cell division-Mitosis & Meiosis • Students are capable to become practical knowledgeable in estimation of chlorophyll-a & b by using plant material. • These experiments will be helpful to student for better understanding of the scientific principles and skillful implementation of the experiments such as Plasomolysis& DNA extraction by using Banana.
S.Y.B.Sc. Sem-IV	BO 241:Plant Anatomy and Embryology	• Plant anatomy and embryology are much awaited subject to study the internal structures and structure & function of reproductive organs in plant • The course paper cover basic aspects of anatomy of plant tissues such as meristems, epidermis, permanent tissues, complex tissue systems and structure of plant organs; reproductive developmental aspects of male reproductive system - Pollen grains, female reproductive system - embryo sac. • Students will be benefitted by studying the plant anatomy enables to identify fragmentary plant materials, wood, forensic investigation, and applied aspects of meristems cultures. • Students will be able to utilize embryological studies in various aspects like analysis of evolutionary trends, circumscription and delimitation of taxa and making a decision on systematic position. • Students familiarize in secondary growth, anomalous secondary growth in monocot and dicot stems. Student able to understand the process of microsporogenesis, megasporogenesis and double fertilization. • Students able To understand endosperm and its types and know the structure and development of monocot and dicot embryos.

	BO 242: Plant Biotechnology	• Students will Acquire knowledge about Biotechnology-concept and scope Interdisciplinary nature of biotechnology Current status of biotechnology in India. • Student get knowledge on Enzyme Technology & properties of enzymes. Classification of enzymes Industrial applications of enzymes. Production of amylase, proteases and lipase enzyme Enzymes immobilization - concept and techniques of immobilization • Understand the basic principles of plant tissue culture. Able to learn the plant tissue culture techniques • Acquir knowledge on Concept of plant tissue culture and cellular totipotency Basic techniques: Types of culture, Media preparation, sterilization, inoculation, incubation, hardening. • To understand the Applications with reference to: Micropropagation, Somaclonal variation, Haploid production, Protoplast fusion & Somatic hybrids, Embryo rescue, Production of secondary metabolites. • Students get knowledge on single cell protein, Methods of phytoremediation-Rhizofilteration, phytoextraction, phytostabilization, phytovolatization, phytodegradation. • Students learned about the Basics of plant genetic engineering Gene Cloning. DNA electrophoresis ,fragments ,genetic engineering and nano - technology in gene • Students get knowledge on Definition, Concept and types of Renewable and non-renewable energy sources Definition and concept of Biogas, Bioethanol, Biobutanol, Biodiesel &Biohydrog.
	BO 243: Practical based on BO 241 & BO 242	• Students will gain a clear understanding of theStudy of epidermal tissue system – non-glandular and glandular trichomes, Multi layered epidermis, typical stomata (Dicotyledonous and Monocotyledonous). • Student will be able to apply Study of mechanical tissues and their distribution in

		root, stem and leaves. • Students able to understand the internal structure of monocot and dicot (stem, leaf and root), secondary thickening, anomalous secondary thickening (Dicot and Monocot) and nodal, anatomy. • Understand the .Study of tetrasporangiate anther and types ofovules. dicot and monocot embryo • Student will be able to identify Instruments/equipments used in plant tissue culture laboratory: Principle and working of Autoclave, oven, laminar air flow cabinet, micropipette, culture bottles/tubes with cotton plug. • Student apply knowledge about thePreparation & sterilization of MS medium Surface sterilization and Inoculation of nodal sector, leaf, anther and maize embryo.Know theLaboratory cultivation of *Spirulina.* • Student will be able to determine practical on transgenic crops viz; Bt-Cotton, Golden rice Demonstration of principle and working of agarose gel electrophoresis, centrifuge, spectrophotometer • Visit to plant tissue culture laboratory to understand the techniques of plant tissue culture.
T.Y.B.Sc. Botany **(Semister - VI)**	**BO 361: Plant Physiology and Metabolism**	• Acquire knowledge on the physiological functions of plant. • To become knowledgeable in plant growth regulators and its physiological role. • Students will able to gain knowledge on role of micronutrients, role of essential nutrients, transport of ions across cell membrane. • Students will be able to understand the various physiological life processes in plant • Learn about the Mechanism of Photosynthesis, Light reaction and dark reaction. • Understand the types of Respiration, mechanism of aerobic respiration. • Acquire knowledge on Stomatal Biology, Translocation in phloem , and composition of phloem sap.
	BO 362: Biochemistry	• Understand the Origin of cell by Miller & Urey Expt. Functional groups of bio molecule in cell .

		• They will learn about the Physical properties of Water. • Understand the Structure, classification, properties & function of Amino acids, Carbohydrate, Vitamin. • Understand lipid metabolism & commercial application. • Understand the Nature of Enzymes, Classification, & properties of enzyme.
	BO 363: Plant Pathology	• Know the terminologies in plant pathology. Understand the scope and importance of Plant Pathology. • Know the prevention and control measures of plant diseases and its effect on economy of crops. • They will learn about Macroscopic and microscopic study,koch'sposchulates and types of culture media. • Acquire knowledge on Fungal plant diseases and Bacterial plant diseases. • Understand the Mycoplasma Nematodaland plant diseaseswith reference causal organism symptoms disease management . • They can identify Viral plant diseases with reference to causal organism & symptoms. • They will learn about Non parasitic diseases. Understand the principle of plant disease control.
	BO 364: Evolution of population genetics	•Understand the Historical account of origin of life,Origin of earth Vs origin of life. prebiotic Evolution , primordial soup , Oparin's coacervative model , Early life and RNA and origin of genetic code . •Understand the concept of evolution, theories of evolution , pre Darwinean period . They will learn about Evolution through ages fossil and fossilization,Dating of fossils . •Acquire Knowledge on Population genetics and Evolution. •Understand the speciation and isolating mechanisms,Morphological criteria for species and races, allopatric and sympatric populations, Isolating mechanisms. •Understand the direct evidences and conclusion from fossil record, indirect evidences, evidences from genetics , biogeographical relations .
	BO 365: Advanced plant biotechnology	•Students will Acquire knowledge about Biotechnology-concept and impact. • Understand the basic principles of plant tissue culture. Able to learn the plant tissue culture techniques • Acquirknowledge on Concept of plant tissue culture and cellular totipotency Basic techniques: Types of

		culture, Media preparation, sterilization, inoculation, incubation, hardening. • To understand the Applications with reference to: Micropropagation, Somaclonal variation, Haploid production, Protoplast fusion & Somatic hybrids, Embryo rescue, Production of secondary metabolites. • Students get knowledge on single cell protein, Methods of phytoremediation-Rhizofilteration, phytoextraction, phytostabilization, phytovolatization, phytodegradation. • Students learned about the Basics of plant genetic engineering Gene Cloning. DNA electrophoresis ,fragments ,genetic engineering and nano -technology in gene • Students get knowledge on Definition, Concept and types of Renewable and non-renewable energy sources Definition and concept of Biogas, Bioethanol, Biobutanol, Biodiesel &Biohydrog.
	BO: 366 Plant Breeding and Seed Technology	•Student will study the plant breeding methods. • Student will get the knowledge about Hybridization & Tissue culture techniques. • This course makes the students aware about objectives and methods of plant breeding and its role in improvement of crops. • It also gives information about various crops developed through plant breeding and how the principles of plant breeding can be applied for further improvement of crops, disease resistance, stress tolerance etc. • The paper is very helpful in further research and higher studies in agriculture science. • Know about seed germination, processing , production.
	BO: 367 Practical Based on BO. 361, BO. 362.	• Study the light intensity & bicarbonate concentration on O2 evolution in photosynthesis. • Separation of amino acid by paper chromatography. • Estimation of soluble proteins by Lowery*et. al.* method. • Demonstration of Enzyme activity. Amylase/

		invertase/catalase. • Demonstration of Bolting Effect of auxins on rooting, R.Q. •Calculation of stomatal index & stomatal frequency of a mesophyte& xerophytes.
	BO: 368 Practical **Based on BO. 363, BO. 364.**	•Study of Koch's postulates. • Study of any two fungal, bacterial, &mycoplasma , viral non-parasitic diseases of plants. • Preparation of culture media for isolation of plant pathogens. • Study of Geological time scale. • Demonstration of any evidences of organic evolution. • Numerical problem based on Hardy- Weinberg equilibrium. • Numerical problem based on Allele frequency & genotype frequency.
	BO: 369 **Based on BO. 365, BO. 366.**	• Preparation of MS medium. • Problem on genetic engineering. • Preparation of plant based nano particles. • Production of secondary metabolites. • Demonstration of Hybridisation techniques. •Study of Transgenic plants. •To test seed moisture by hot air oven method. •To study germination method.
	BO: 3610 Nursery & gardening management	•Nursery definition, objectives & scope •Seed structure & types seed dormancy causes & methods of breaking dormancy. •Vegetative propagation; Air layering cutting collecting season. •Gardening: definition objectives & scope •Sowing/ rising of seeds & seedlings.
	BO:3611Biofertilisers	•Introduction Scope & importance of bio fertilisers. •Bacterial bio fertilisers ; Isolation of Rhizobium •Algal bio fertilisers; Cyanobacteria, Azolla, BGA in rice cultivation. •Fungal bio fertilisers; Introduction occurance& distribution of mycorrhizal association. •Compost & Manure.

Department of Chemistry

2023-24

Course outcomes

	Program	Program outcomes
1	**B Sc. Chemistry**	**PO1. CRITICALTHINKING** The curriculum is designed such way that students should acquire and ability to observe accurately and objectively. They should be able to solve the problems and also think scientifically, independently and draw rational conclusions. **PO2. EFFECTIVE COMMUNICATION** The medium of instruction for this course is English. English being the language of world students become habitual to communicate in English using language of Chemistry. **PO3 SOCIAL INTERACTIONS** In this course students are made aware of environment related issues. They are made aware of optimal use of fertilizers, water, fuels and drugs. **P04 EFFECTIVE CITIZENSHIP** In this program students are made aware of pollution problems waste water management, water treatment etc. They are also made aware importance of energy and water, food, fuels, general hygiene and cleanliness etc. **PO5 ETHICS** In this program students are made alerts regarding misuse of food adulteration, chemical technology, poisons, fungicides, pesticides and chemical and nuclear weapons **PO6 ENVIRNMENT AND SUSTAINABILITY** Being Chemistry students they becom well conversant with various pollutants their sources and their impact on biosystem. So they become well versed with protection and conservation of environment. **PO7 SELF DIRECTED AND LIFE LONG LEARNING** Program curriculum inculcates the curiosity and problem solving approach which makes them self directed and learning becomes a continuous process throughout the life.

Courses offered – Under graduate Chemistry

Sr.No.	Class	Course	Course Outcomes
1	**F.Y.B.Sc.**	**Paper I Physical**	This course enables students to understand basic

	Chemistry	**Chemistry**	laws regarding states of matter, surface chemistry, thermodynamics and structure of atom. Students are also made aware of mole concept, derivations, depictions and problem solving and periodic properties of the elements including the preliminary theories of bonding.
		Inorganic chemistry	Periodic properties of the elements including the preliminary theories of bonding. To understand hybridisation and types of hybridisation.
		Organic Chemistry	Students are made aware of fundamental concepts of organic and inorganic chemistry which governs the structure, bonding, properties, structural effects, acid-base theories, preparation methods, reactivity and stereochemistry of organic molecules.
		Analytical Chemistry	1. Introduction to Analytical Chemistry i. Analytical Chemistry –branch of chemistry ii. Perspectives of analytical Chemistry iii. analytical problems 2. Calculations used in Analytical Chemistry i. Calculations of mole, molar concentrations and various units of concentrations which will be helpful for preparation of solution ii. Relation between molecular formula and empirical formula iii. Stoichiometric calculation iv. Define term mole, millimole, molar concentration, molar equilibrium concentration and Percent Concentration. v. SI units, distinction between mass and weight vi. Units such as parts per million, parts per billion, parts per thousand, solution-dilatant volume ratio, function density and specific gravity of solutions.
		Paper III Practical Chemistry	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
2	**S.Y.B.Sc. Chemistry (semester Pattern)**	**Physical & Analytical Chemistry**	Students are made aware about kinetics of chemical reactions, photochemical laws , distribution law and extraction process. Students are introduced to analytical chemistry in which they are made aware of inorganic qualitative analysis and analysis of organic compounds (Qualitative & Quantitative). Along with it they also study error in quantitative analysis & ways to minimize them.
		Organic & Inorganic Chemistry	Students are made aware of stereochemistry of different stereoisomers & organic reaction

			mechanism in which they study different types of reagents, reactions and their mechanisms. Students are introduced to metallurgy to understand chemical reactions and processes occurred in metallurgy. The corrosion & passivity is also included in the syllabus.
		Physical & Analytical Chemistry	Students are made aware about concepts of Helmholtz free energy & Gibbs free energy as well as free energy of chemical reactions & physical transformation. Students also study different modes of concentration , distillation of solutions of liquid in liquid , partially immiscible liquids& distillation of immiscible liquids. Students are made to understand volumetric analysis wherein they study non-instrumental volumetric analysis which comprises of study of various titrations, indicators used in it& some theoretical aspects related with titrations.
		Organic & Inorganic Chemistry	Students are introduced to various biomolecules, their role & structural aspects. Students also study different oxidizing and reducing reagents, their selectivity to different substrates, heterocycles, their preparation & reactions. Students are introduced to organometallic chemistry & use of organometallic compounds in synthesis of organic as well as inorganic compounds. They also study chemical toxicology to know adverse effects of chemicals
	S. Y. B.Sc. Chemistry	**Practical course**	Students are trained to determine the rate constant of chemical reactions, heat of solution , heat of neutralization, critical solution temperature of partially miscible system & distribution coefficient. Students are trained for quantitative analysis of different samples such as Na2CO3 in washing soda, Aspirin in APC tablet, Aluminium in Alum, strength of H2O2, Copper in Brass & iodimetric methods. Students are trained for organic & inorganic qualitative analysis. They are also trained for preparation of organic compounds & chromatographic techniques like TLC.
3	**T. Y. B.Sc. Chemistry Semester III**	**Physical Chemistry**	Students are introduced basic concept of physical chemistry. They also learn methods to determine order of reaction, Arrhenius equation, and graphical evaluation of energy of activation. Students learn principle and applications of rotational, vibrational, raman and electronic spectroscopy. Students will get familiar with phase rule, phase diagram of one and two component systems.
		Inorganic Chemistry	Students are made aware of the principles of various theories of bonding like Sidgwick model, Werner's theory VBT,CFT, MOT. They are also made

			aware of the principles of isomerism, nomenclature and structures of inorganic complexes .
		Organic Chemistry	It is the basic course in organic chemistry. Students are introduced with concepts like acidity, basicity of organic molecules, electrophile, nucleophile and good and bad leaving groups. Students are introduced with stereochemistry of disubstituted cyclohexane. Students are able to understand mechanism of organic reaction. Arrow drawing concept which is important part of reaction mechanism is explained thoroughly in this course. Students are able to identify different types of organic reactions and also they can understand reactivity profile of organic molecules.
		Analytical Chemistry	Students are made aware of quantitative chemical analysis using the techniques like gravimetry, polarography, AAS, FES and spectrophotometry at the levels of macro, micro and trace analysis of metals and non-metals from industrial and natural samples
		Industrial Chemistry	This course enables the students to learn use of agrochemicals like pesticide, insecticides, fungicides, fertilizers and their environmental impact. Study of food industry makes them aware of food adulteration, storage and processing of food. This course also provides opportunity to study agrochemicals, food chemicals on industrial scale. Students also learn manufacturing of basic chemicals such as Ammonia, Sulphuric acid and Nitric acid. Syllabus further comprises study of petrochemicals and eco- friendly fuels, where in students study processing of petrochemical fuels, properties of fuels and applications of fuels,non conventional energy. Syllabus also includes study of cement and glass industry. Properties, manufacture and applications of different types of cement and glass
		Environmental and Green Chemistry	Students are made aware of Different techniques of waste water and effluent management, Soil and solid waste management, instrumental methods of analysis of an environmental pollution, Green House Gases and their effect on global warming, Overall studies of ultimate green solvent i.e. water, Energy formations, conversions and conservation.
	T. Y. B.Sc. Chemistry Semester IV	**Physical Chemistry**	The course aims to give fundamental understanding and applications of electrochemical Cells, Nuclear Chemistry, Crystal structure and Quantum Chemistry. Students get to know thermodynamics and EMF, Chemical cell with and without transfer, application of EMF measurement such as pH

			determination, determination of solubility and solubility product. Basic elements of quantum chemistry are also introduced
		Inorganic Chemistry	Students are made aware of chemistry of f block elements principles and applications of catalysis, organomettalic chemistry and the principles and the applications of metals, semiconductors and superconductors.
		Organic chemistry	Students are introduced with carbanions and their reactions. Retrosynthetic analysis concepts are explained to students. Rearrangement reactions are introduced with mechanistic approach. Spectroscopic techniques like PMR, U.V. and I.R. are introduced. Students learned to differentiate organic compounds with the help of these spectroscopic techniques.
		Analytical Chemistry	The students are trained in the technique of separation, identification of purification using chromatographic techniques like TLC,GC,HPLC, electrophoresis etc . This knowledge enables them to be good analytical of Quality control chemist in various fields
		Industrial Chemistry	Students are expected to learn properties, ways to manufacture or process and application of different types of polymer, paints, pigments, dyes, soaps, detergents and cosmetics. Students also learn theoretical aspects of manufacturing of sugar and fermentation industry. Syllabus further includes study of Pharmaceutical industry where students are introduced to general aspects of drug action, manufacturing of some drugs and its usage and lastly there is topic which discusses problems caused by industry such as pollution and generation of waste and what are the ways which can prevent or minimize it.
		Environmental and Green Chemistry	Students can understand basic concept of the environmental chemistry, Realise basic concept of the instrumental analysis of an environmental pollution, Make aware about the global warming, Different energy sources and their conservation,Understand the details of water.
	T. Y. B.Sc. Practical Chemistry	**Physical Chemistry Practical**	Students are trained in the techniques such as pH metry, Conductometry, Potentiometry, Colorimetry, Spectrophotometry, Refractometry and G. M. Counter. They learn to use these techniques in order to understand various chemical reactions.
		Inorganic Chemistry Practical	Students are trained in the IQA of different mixtures of inorganic compounds, and the separation of the metal ions using chromatographic techniques and inorganic quantitative analysis using

			the techniques of gravimetry, volumetry, colorimetry
		Organic Chemistry Practical	Chemistry is an experimental subject; practical course is proposed to achieve the basic skills required for understanding the reactivity of organic molecules and validating the basic principles. It helps in development of practical skillsof the students & understanding the importance of chemical safety and also explains the factors affecting reaction outcomes and yields.

S.VK.T. ARTS, SCIENCE & COMMERCE COLLEGE

M.Sc. II Organic Chemistry

Semester-III

M.Sc. II Organic Chemistry Course Outcomes

CHO-601 MJ -Organic Reaction Mechanism and Stereochemistry

Course Outcome- Student will able to –

CO-1: Acquire familiarity with fundamental organic reaction mechanisms and stereochemistry principles.
CO-2: Gain a comprehensive understanding of Theoretical Concepts to Predict Reactivity and Selectivity.
CO-3: Apply concepts of reaction mechanisms and stereochemistry.
CO-4: Design Synthetic Routes and Strategies.
CO-5: Analyze the products of different organic reactions.
CO-6: Solve Complex Organic Chemistry Problems based on Organic Reaction Mechanism

CHO-602 MJ: Advanced Spectroscopic Methods in Structure Determination

Course Outcomes- Student will able to –

CO1: Learn the fundamental knowledge of 1H NMR, 13C NMR, 19F NMR and Mass Spectral techniques.
CO2: Acquire advanced knowledge of 1H NMR, 13C NMR, 19F NMR and Mass Spectral techniques.
CO3: Apply the knowledge of 1H NMR, 13C NMR, 19F NMR and Mass Spectral techniques for structure determination.
CO4: Discuss probable spectral signals.
CO:5: Interpret different types of spectra.

CHO- 603 MJ: Heterocyclic Chemistry

Course Outcomes- Student will able to –

CO1: learn the structures, nomenclature rules, and classifications of heterocyclic compounds.
CO2: understand advanced synthetic methodologies to design and execute the synthesis of various heterocyclic compounds.
CO3: Predict the molecular properties, electronic structures, and the reactivity of heterocyclic systems.
CO4: Distinguish the reactivity of heterocycles, elucidating reaction mechanisms and their pathways.
CO5: Evaluate the heterocyclic compounds with other organic compounds.

CHO-604 MJP: Organic Synthesis Experiments

Course Outcomes- Student will able to –

CO1: Recognize the mechanisms of organic preparations and their relevance to product formation.
CO2: Apply knowledge of functional group transformations to troubleshoot and optimize reaction conditions.
CO3: Assess the synthetic pathways for the efficient production of target compounds.
CO-4: Examine the structure and reactivity of starting materials to propose viable synthetic routes for heterocyclic compound synthesis.

CHO-605 MJP: Ternary Mixture Separation

Course Outcomes- Student will able to –

CO1: understand the concept of type determination and apply separation techniques.
CO2: comprehend different purification techniques.
CO3: accurately record and report physical constants.
CO4: analyze microscale chemical elemental analysis.
CO5: evaluate and execute qualitative estimation of functional groups.
CO6: create a report on ternary mixture separation.

CHO-610 (A) MJ: Synthetic Methods in Organic Chemistry

Course Outcomes- Student will able to –

CO1: Know the concepts of ring formation mechanism and will apply in organic synthesis.
CO2: learn the synthetic applications of Organo-Boron, Organo-Tin and Organo Silicon
CO3: Predict the reaction conditions of organic reactions.
CO4: Analyze the products obtained from the synthetic methods.
CO5: Relate the reaction mechanism and its products

CHO-610 (B) MJ: Carbohydrates and Chiron Approach

Course Outcomes- Student will able to –

CO-1: Recall monosaccharide structures and D/L forms in Fisher projections.
CO-2: Understand cyclic hemiacetal forms and anomeric configurations.
CO-3: Applying Chiron approaches, they'll design syntheses of complex chiral molecules.
CO-4: Analyze protective group strategies between temporary and permanent groups.
CO-5: Evaluate glycosylation methods, stereoselectivity, and coupling efficiency.

CHO: 610 (C) MJ: Medicinal Chemistry

Course Outcomes- Student will able to –

CO1: Identify drug and learn different stages of drug design and development.
CO2: Know the application of computers in drug design.
CO3: Categorize various stages of Drug action and analyze various factors affecting drug action.
CO4: distinguish between infectious and non-infectious diseases
CO5: Relate the infectious diseases and causative agents.

CHO-631 RP: Research Project

Course Outcomes- Student will able to –

CO-1: understand key concepts and principles relevant to the research topic.
CO CO-3: write and communicate research findings persuasively through various mediums in the form of project report
CO-4: analyze and synthesize scholarly literature effectively.
CO-5: evaluate research findings and methodologies critically.
CO-6: design and execute original research projects independently. -2: learn diverse research methodologies proficiently.

Semester-IV

CHO-651 MJ: Chemistry of Natural Products

Course Outcomes- Student will able to –

CO1: Learn the fundamental aspects and knowledge of natural products.
CO2: Know the different pathways and biogenesis of natural products
CO3: Apply the gained knowledge in the synthesis of natural products.
CO4: Categorize the organic functional group transformations in their synthesis

CHO-652 MJ: Advanced Synthetic Organic Chemistry

Course Outcomes- Student will able to –

CO1: Learn the fundamental concepts of organometallic reactions and their bonding, reactivity, and mechanism.
CO2: Understand the significance of advanced organometallic reagents in organic chemistry.
CO3: Employ synthetic methodologies for cross-coupling reactions, enabling the formation of C-C, C-N, and other bonds.
CO4: Analyze the products of synthetic organic reactions.
CO5: Relate the products of the retrosynthetic transformations with the Target Molecules.

CHO-653 MJP: Convergent and Divergent Organic Synthesis

Course Outcomes- Student will able to –

CO-1: Learn new synthetic methodologies for the selective modification of starting materials.
CO-2: Recognize the reactivity of starting materials towards different reagents and reaction conditions.
CO-3: Apply multi-step synthesis strategies to construct complex molecules from simple starting materials.
CO-4: Analyze reaction mechanisms and intermediates to understand the synthesis pathways.
CO-5 Evaluate the efficiency and practicality of different synthetic routes based on yield and selectivity.

CHO-654 MJP: Green Chemistry Experiments

Course Outcomes- Student will able to –

CO-1: Know the principles of green chemistry and the importance of sustainability in chemical processes.
CO-2: Identify solvent-free reactions using appropriate techniques and equipment.
CO-3: Optimize green chemistry reactions in the laboratory.
CO-4: Analyze the advantages and disadvantages of solvent-free reactions, green catalysts, and green solvents in comparison to traditional chemical methodologies.
CO-5: Assess the role of green catalysts in promoting the desired reactions while minimizing waste and environmental impact.

CHO-660 (A) MJ: Asymmetric Synthesis

Course Outcomes- Student will able to –

CO-1: Learn the principles of asymmetric synthesis to achieve stereoselectivity, enantio-select CO-2: Interpret enantiomeric and diastereomeric excess in reactions,
CO-3: Distinguishing between R and S configurations in compounds.
CO-4: Evaluate total synthesis examples, integrate multiple asymmetric synthesis strategies to design efficient synthetic routes, and assess the applicability and limitations of different methods in complex synthesis challenges. .

CHO-660 (B) MJ: Applied Organic Chemistry

Course Outcomes- Student will able to –

CO1: Gain a comprehensive understanding of impurities in organic drugs, functional dyes, polymers, and metal-organic frameworks.
CO2: Demonstrate comprehension of the principles, structures, and mechanisms underlying each concept.

CO3: Identify functional dyes, polymers, metal-organic frameworks and impurities present in organic drugs.
CO4: Classify functional dyes, polymers, and metal-organic frameworks and impurities found in drugs according to relevant criteria.
CO5: Compare functional dyes, polymers, metal-organic frameworks, and the impurities in drugs.

CHO-660 (C) MJ: Industrial Organic Chemistry

Course Outcomes- Student will able to –

CO-1: list the key industrial processes used in the synthesis of major organic chemicals.
CO2: explain the basic principles and mechanisms underlying the production of organic chemicals.
CO-3: apply knowledge of organic reaction mechanisms to optimize conditions in industrial chemical processes.
CO-4: differentiate between various catalytic methods used in industrial organic synthesis and assess their efficiencies and environmental impacts.

CHO-681 RP: Research Project

Course Outcomes- Student will able to –

CO-1 understand key concepts and principles relevant to the research topic.

CO-2 learn diverse research methodologies proficiently.
CO-3 write and communicate research findings persuasively through various mediums in the form of project report
CO-4 analyze and synthesize scholarly literature effectively.
CO-5 evaluate research findings and methodologies critically.
CO-6 design and execute original research projects independently.

PROGRAMMES OUTCOMES

PO-1 Learn the terms, theories, assumptions, methods, principles, theory statements, and classification.
PO-2 Actively participate in the team on case studies and field-based situations.
PO-3 Aware and implement the subject facts that can be applied to personal and social development
PO-4 Improve their managerial skills and abilities in subject-related activities.
PO-5 Use digital literacy to retrieve and evaluate subject-related information
PO-6 Inculcate his knowledge for carrying projects and advanced research-related skills.

S.VK.T. ARTS, SCIENCE & COMMERCE COLLEGE

MSc-I Organic Chemistry

Semester –I

CHE- 501, Physical Chemistry I

Course Outcomes- Student will able to –

CO1: Students should be able to remember the concepts of thermodynamic parameters, quantum mechanical postulates, rate laws of chemical reactions and computation of macroscopic properties of matter
CO2: Students should understand the basics like state function and path function, Schrodinger wave equation, kinetics of fast reactions, partition functions and ensembles.
CO3: Students should be able to apply the knowledge of various quantum mechanical methods to determine the different molecular properties and built the concept of the relation between thermodynamics and quantum mechanics.
CO4: Students should be able to analyze the rates of various chemical reactions both theoretically and experimentally and also observe the effect of catalyst and determine energies of activation of such reactions.

CHEOD-502, Inorganic Chemistry-I

Course Outcomes- Student will able to –

CO-1: Define symmetry elements and symmetry operations, classes, properties of a group, group multiplication table, etc.
CO-2: Classify symmetry elements, point group, Group, sub-group and classes.
CO-3: Use wave function as basis for determination of irreducible representations and the Great Orthogonality theorem and its consequence.
CO-4: Solve problem based on point group, matrix representation and character table
CO-5: Construct character table of various point group

CHE-503, Organic Chemistry-I

Course Outcomes- Student will able to –

CO1: Understand the concepts of chemical bonding, various structural effects, acids and bases, intermediates and aromaticity.
CO2: Learn the concepts of stereochemistry.
CO3: Understand and identify the types of organic reactions.
CO4: Advanced knowledge of various stereochemical aspects.
CO5: Establish mechanistic knowledge of aliphatic and aromatic substitutions, and oxidation-reduction reactions
CO6: Develop problem solving ability of the students.

CHE- 504, Physical Chemistry Practical I

Course Outcomes- Student will able to –

CO1: Students will grasp the concept of reaction rate and its significance in Chemical Kinetics.
CO2: Students will learn how to use experimental data to deduce rate laws and rate constants.
CO3: Students will be familiar with the fundamental principles of colorimetry and spectrophotometry including Beer's law, Lambert- Beer's law and the relationship between absorbance and concentration.
CO4: Students will be able to operate the instruments like spectrophotometer and colorimeter.
CO5: Students will be able to determine the densities of the solutions and can calculate molar volumes

CHE-505, Inorganic Chemistry Practical-I

Course Outcomes- Student will able to –

CO-1: Prepare solution of required conc. and the handle laboratory equipment properly.
CO-2: Perform experiment accurately and able to perform calculation.
CO-3: Explain experiment and principal of experiment in detail.
CO-4: Perform calculations and discuss results and write conclusions of the experiment.
CO-5: Apply knowledge to a) design experiment for given aim or modify experiment to enhance results. b) to find out lacuna in experimental procedure.
CO-6: Solve problem/ numerical depending on given experimental data / information.

CHE-506, Organic Chemistry Practical I

Course Outcomes- Student will able to –

CO1: Understand the theoretical aspects behind separation, purification and synthesis of organic compounds.
CO2: Acquire the experimental skills for separation, purification, identification and synthesis of organic compounds.
CO3: Design experimental set up for performing the organic reactions.
CO4: Monitor the organic reactions.
CO5: Describe the mechanistic aspects of organic reactions.
CO6: Develop problem solving ability.

CHEOD-507(D) Organic Reactions and Reagents

Course Outcomes- Student will able to –

CO1: Understand the concepts of named organic reactions and reagents.
CO2: Identify the type of named organic reaction and uses of reagents.
CO3: Predict the reaction conditions of organic reaction.

CHE-508, Research methodology

Course Outcomes- Student will able to –

CO1: Develop a comprehensive understanding of different research methodologies and their applications in mathematics.
CO2: Cultivate critical thinking and analytical skills necessary for identifying research problems and formulating research questions.
CO3: Provide practical experience in designing experiments, collecting and analyzing data, and interpreting research results.
CO4: Foster effective communication skills for presenting research findings orally and in written form.

Semester II

CHEOD- 551, Molecular Spectroscopy

Course Outcomes- Student will able to –

CO1: Understand principles and applications of rotational, vibrational, raman, electronic and mossbauer spectroscopy.
CO2: Apply various spectroscopic techniques for gaining insights into molecular structure
CO3: Analyse vibrating diatomic molecule, simple harmonic and anharmonic oscillator, Scattering of light and Raman Spectrum.
CO4: Evaluate bond length, vibrational frequency, force constant and dissociation energy using spectral data.
CO5: Create awareness about rotational fine structure, vibrational coarse structure, Quadrupole effects

CHE-552: Inorganic Chemistry-II

Course Outcomes- Student will able to –

CO-1: Define R. S. term, configuration, microstate, paramagnetic, diamagnetic ferromagnetic, antiferromagnetic, Curie and Neel temperature.
CO-2: Identify complex ions showing same R.S. terms, degeneracy of ground state terms of metal ions, and spin multiplicities of different configurations.
CO-3: Interpret electronic spectra for spin allowed Oh and Td complexes using Orgel diagram, Magnetic properties of A, E and T ground terms in complexes and selection rules.
CO-4: Calculate frequencies of absorption spectrum, 10Dq, Racah and nepholauxetic parameter for a complex, and magnetic moments of complexes
CO-5: Construct microstate table for various configuration and prepare correlations diagram and Tanabe-Sugano diagram for various configurations in Td an Oh ligand field

SECTION-II: Bioinorganic Chemistry

Course Outcomes: At the end of course student should able to
CO-1: Define metalloproteins, metallo-eznymes, photosynthesis, HSAB concept, nucleic acids, metalloregulation, Biopolymer effects and acetylcholine receptor.
CO-2 : Explain chelate effect and Irving-William series, pKa values of coordinated ligands, Tuning of redox potential, and Reactions of coordinated ligands.
CO-3: Describe Fe-S clusters, model compounds and spontaneous self-assembly, metals in medicine, blue copper proteins, and cytochromes, and Na/K pumps.
CO-4: Express nitrogen fixation, detoxification of mercury, structure of RNA, cis-platin, amino acids, siderophore,and calmoduline zinc finger proteins.
CO-5: Distinguish between hemoglobin and myoglobin, transferrin and ferritin, photosystem-I and photosystem-II.

CHE-553, Organic Chemistry-II
(Pericyclic Reactions, Molecular Rearrangements, Photochemistry and Organic Spectroscopy)

Course Outcomes- Student will able to –

CO1: Understand the concepts of pericyclic and photochemical reactions, and molecular rearrangements
CO2: Learn concepts of Organic Spectroscopy.
CO3: Identify the type of pericyclic and photochemical reactions
CO4: Solve the problems based on pericyclic and photochemical reactions and molecular rearrangements
CO5: Deduce the structure from the spectral data and justify the findings.
CO6: Develop problem solving ability of the students.

CHE- 554, Physical Chemistry Practical II

Course Outcomes- Student will able to –

CO1: Students will grasp the fundamental principles of Conductometry, Polarography, Potentiometry and pH metry.
CO2: Students will familiar with the operation of Conductometer, Polarimeter, Potentiometer and pH meter.
CO3: Students will understand the concepts of conductance, resistance and learn how to calculate and interpret these values.
CO4: Students will learn to interpret polarographic waves and understand their significance in identifying electroactive species and determining their concentration.

CHE-555: Inorganic Chemistry Practical-II

Course Outcome: Student will able to-

CO-1: Define coordination complex, cell constant, resistance, specific conductance, equilibrium constant, absorbance, Beer's law, solubility product, chromatography, etc.
CO-2: Discuss photochemistry of potassium trioxalatoferrate complex, kinetics of formation of Cr(III)-EDTA, Determination of Cu(II)and Fe (II) by solvent extraction technique.
CO-3: Outline the flow-chart for synthesis of [Mn(acac)3], Chloropentaamminecobalt(III) chloride, Nitro pentaamminecobalt(III) chloride, Bis[TrisCu(I)thiourea complexes.
CO-4: Estimate purity of the [Mn(acac)3], Chloropentaamminecobalt(III) chloride, Nitro pentaamminecobalt(III) chloride, Bis[TrisCu(I)thiourea complexes.

CHE-556, Organic Chemistry Practical II

Course Outcome: Student will able to-

CO1: Understand the theoretical concepts behind organic synthesis.
CO2: Acquire the experimental skills for separation, purification, identification and synthesis of organic compounds.
CO3: Design experimental set up for performing the organic reactions.
CO4: Monitor the organic reactions and analyse the products using spectral results.
CO5: Describe the mechanistic aspects of organic reactions.
CO6: Develop problem solving ability.

CHE-557(A), Organometallic Compounds and Inorganic Reaction

Course Outcome: Student will able to-

CO1: Define various terms in organometallic chemistry and inorganic reaction mechanism etc.
CO2: Explain/Discuss various reaction mechanisms such as ligand insertion, inner and outer sphere mechanism, ligand substitution reaction.
CO3: Discuss 1. Structure and bonding in carbonyl and organometallic complexes, 2: Trans effect, 3. Ligand field effects, catalytic cycles, 4. Inert and labile complexes, 5. Synthesis methods of organometallic compounds, etc.
CO4: Apply 18 electron rule. Applications of organometallic compounds and mechanism of these reactions.
CO5: Demonstrate IR spectra of carbonyl complexes, deduce structure of carbonyl complexes
CO6: Justify structures of organometallic compounds from spectral data **.**

CHE-558, On Job Training/Internship

Course Outcome: Student will able to-

CO-1Students in this course will be required to do On the Job Training (OJT)/Internship in relevant industries/government sectors/institutes, etc. to gain practical training.

CO-2Hands on Training on various analytical instruments -
UV-Visible Spectrometer, Fourier Transform Infrared Spectrometer, Nuclear Magnetic Resonance Spectrometer, Mass Spectrometry, Gas Chromatography, HPLC, X-Ray Diffractometer, Powder X-ray Diffractometer, Thermal Analyzer (TGA-DSC), Scanning electron microscope, Transmission electron microscope, BET Surface Analyzer, Raman Spectrometer,

Programme Outcomes (POs)

Students are able to –

1-Learn the terms, theories, assumptions, methods, principles, theorem statements and classification
2-Inculcate knowledge for carrying projects and advanced research related skills.
3- Aware and implement the subject facts that can be applied for the personal and social development
4- Improve their managerial skills and abilities in subject related activities.
5-Inculcate continuous learning habit through all available resources

MVP Samaj's
Shrimati Vimalaben Khimaji Tejookaya Arts, Science and Commerce College
Deolali Camp, Nashik

Department of Mathematics

Aims, Objectives and Outcomes of course [Pattern 2019(Choice Based Credit System)]

Name of Course: B. Sc (Mathematics)

I :Class:FYBSc

Aims:

(i)Give the students a sufficient knowledge of fundamental principles, methods and a clear perception of innumerous power of mathematical ideas and tools and know how to use them by modeling ,solving and interpreting.
(ii) Reflecting the broad nature of the subject and developing mathematical tools for continuing further study in various fields of science and technology.
(iii)Enhancing students' overall development and to equip them with mathematical modeling abilities, problem solving skills , creative talent and power of communication necessary for various kinds of employment .
(iv) Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

Objectives:

(i) A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology and recognize basic geometrical figures and graphical displays , state important facts resulting from their studies.
(ii) A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.
(iii) A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences.
(iv) A student be able to apply their skills and knowledge ,that is, translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion.
(v) A student should be made aware of history of mathematics and hence of its past, present and future role as part of our culture.

Course Outcome:

Upon successful completion of this course, the student will be able to:
i) The mathematical maturity of students in their current and future courses shall develop.
ii) The student develops theoretical, applied and computational skills.
iii) The student gains confidence in proving theorems and solving problems.

Head
Department of Mathematics
S.V.K.T. College Deolali Camp.
Tal..Dist. Nashik (168)

Principal
Smt. Vimlaben Khimji Tejookaya
Arts, Science and Commerce College,
Deolali Camp, Dist.Nashik

Paper I:Algebra and Analytical Geometry

Expected Outcomes:

1. Students will be understand the basic but important concepts of mathematics namely set, realtions, functions, gcd,lcm etc.
2.Prove mathematical statements using mathematical Induction.
3. Solve various problems on properties of integers and use the basic concepts of divisibility, congruence and their applications in basic algebra.
4. Students will be understand the concept of complex number and related theory geometrically.Do the comparison between complex number and real number.
5.Solve the problems of lines in three dimension.planes, spheres and how geometry is related to algebra by using their algebraic equations.

Paper II:Calculus

Expected Outcomes:

After completing the course, students will able to-
1. Identify algebraic and order properties of real numbers.
2. Identify and apply the function properties of real number system such as the completeness property
3. Verify the values of limit of a function at a point using the definition of a limit. Students develop knowledge in the limit, continuity and Students will be familiar with the techniques of differentiation of function with real variables.
5. Identify and apply the intermediate value thm, Mean value thm and L"Hospital"s rule
6. Identify types of differential equations and solve differential equations such as Exact, homogeneous,non-homogeneous, and linear and Bernoulli differential equations etc.

Paper III: Practical

Expected Outcomes:

After completing the course, students will able to-
1.get the information about mathematical software's free as well as paid.
2.learn how to handle maxima software and other mathematical software's.
3.learn how to use mathematical software's in learning process.
4.learn the mathematical concepts geometrically using maxima software.
5.use of Mathematical Software Maxima for better understanding of all mathematical concept.
6.verify the statement of theorems, lemmas and result using counter examples.

Name of Course: BCOM
Class : FYBCOM

Semester: I
Business Mathematics & Statistics- I
Course Code – 114 (A) (No. of Credits :- 03)

Objective of the Program:

1. To introduce the basic concepts in Finance and Business Mathematics and Statistics
2. To familiar the students with applications of Statistics and Mathematics in Business
3. To acquaint students with some basic concepts in Statistics.
4. To learn some elementary statistical methods for analysis of data.
5. The main outcome of this course is that the students are able to analyze the data by using some elementary statistical methods

Expected Outcomes:

After completing the course, students will able ...
1. To understand the concept of Simple interest, compound interest, effect of compounding.
2. To understand the concept of Annuity and its applications for EMIs and Amortization Schedule.
3. To understand the concept of shares and mutual funds.
4. To understand contribution of shares and mutual funds in systematic investment plans
5. To solve problems related to shares and mutual funds.
6. To understand collection of data , analyzing and interpreting data.
7. To Know different method of sampling
8. To classify and represent data in tabular and graphical form.
9. To compute various measures of central tendency and measures of dispersion.

Class : FYBCOM

Semester: II
Business Mathematics & Statistics- II
Course Code – 124 (B) (No. of Credits :- 03)

Depth of the program – Basic Knowledge of Mathematics and Statistics

Objective :

1. To introduce the basic concepts in Finance and Business Mathematics and Statistics
2. To familiar the students with applications of Statistics and Mathematics in Business
3. To acquaint students with some basic concepts in Statistics.
4. To learn some elementary statistical methods for analysis of data.
5. The main outcome of this course is that the students are able to analyze the data by using some elementary statistical methods .

Expected Outcomes:

After completing the course, students will able …

1.To understand the concept of matrices and determinants.
2.To understand the application of determinant in solving linear equations
3.To understand applications of matrices and determinants in business and economics.
4.To understand the concept of LPP and its application in business and decision making.
5.To understand graphical method to solve business optimization problems with two variables.
6.To use correlation for knowing the relationship between two variables.
7.To use regression for prediction.
8.To know different types index numbers and problems in their construction.
9.To know the applications of various index numbers.

Name of Course: B. Sc (Mathematics)
Class : SYBSc

Aims:

• Give the students a sufficient knowledge of fundamental principles, methods and a clear perception of innumerous power of mathematical ideas and tools and know how to use them by modeling ,solving and interpreting.

• Reflecting the broad nature of the subject and developing mathematical tools for continuing further study in various fields of science.

• Enhancing students overall development and to equip them with mathematical modeling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment .

• Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

Objectives:

• A student should be able to recall basic facts about mathematics and should be able to display knowledge of conventions such as notations, terminology and recognize basic geometrical figures and graphical displays ,state important facts resulting from their studies.

• A student should get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.

• A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences.

• A student be able to apply their skills and knowledge, that is, translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion.

• A student should be made aware of history of mathematics and hence of its past, present and future role as part of our culture.

Outcomes of Course:

Upon completion of the course, the students will achive the following.
(i) The mathematical maturity of students in their current and future courses shall develop.
(ii) The student develops theoretical, applied and computational skills.
(iii) The student gains confidence in proving theorems and solving problems.

Paper I :MT-231: Calculus of Several Variables(Sem. I)

Expected Outcomes :

1.Students will be understand the function of several variables (at least 2 or 3 variables)and basic notions related to it like graphs, level curve/surface, limit and continuity of functions geometrically.
2.Studentds will able to find higher order partial derivatives and apply chain rule.
3.Studends will be able to solve extreme values problems and apply to real life situations.
4.Students will be able to solve the examples of the double and triple integrals.
5.Students will able to apply the concepts of mathematics in real life situations.

Paper II(A): Numerical Methods and it's Applications (Sem. I)

Expected Outcomes:

After completing the course, students will able to-
1. Identify algebraic , exponential and logarithmic Functions.
2. Identify Absolute ,relative and Percentage errorsand general error formula.
3. To find the root of equations by various metods like Bisection method, False Position and Newton methods.
4. Develop knowledge in the interpolation by using forward, backward and Lagrange's formula
5.To find first and second differentiation and integration by using Trapezoidal, Simpson's Rules from given data and
6. To develops the techniques to find more correct approximations by Euler's and Euler's modified method of first order differential equations. Also by using Runge –Kutta Second and Forth order formula.

Paper I : MT-241: Linear Algebra (Sem. II)

Expected Outcomes :

After completing the course, students will able to-
1.solve system of linear equation using row echelon and reduced row echelon form.
2.identify whether the given set is vector space or not.
3.check linear dependence and independence of the given set.
4.write basis and dimension of standard vector spaces.
5.find Row, Column and Null Space of a matrix.
6.identify whether given function is a linear Transformation or not
7.solve problems related Kernel and range of a linear Transformation , Rank-Nullity theorem Composite and Inverse Transformation.
8.find matrix of a Linear Transformation.
9. solve the examples of the Linear Isomorphism.

Paper III: Practical

Expected Outcomes:

After completing the course, students will able to-

1.get the information about mathematical software's free as well as paid.
2.learn how to handle maxima software and other mathematical software's.
3.learn how to use mathematical software's in learning process.
4.learn the mathematical concepts geometrically using maxima software.
5.use of Mathematical Software Maxima for better understanding of all mathematical concept.
6.verify the statement of theorems, lemmas and result using counter examples.

T.Y.B.Sc. (Mathematics) - CBCS: 2020-2021

PO, PSO, CO

Programme Specific Outcome (PSO)

i) Give the students a sufficient knowledge of fundamental principles, methods and a clear perception of innumerous power of mathematical ideas and tools and know how to use them by modeling,solving and interpreting.

ii) To equip the students sufficiently in both analytical and computational skills in Mathematical Sciences.

iii) To develop a competitive attitude for building a strong academic - industrial collaboration, with focus on continuous learning skills.

iv) Enhancing students overall development and to equip them with mathematical modeling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment.

v) Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.

vi) Enabling students to Gauge the hypothesis, theories, techniques and proofs provisionally.

Programme Outcome:(PO)

A graduate of this program are expected to:

i) Gain sound knowledge on fundamental principles and concepts of Mathematics and computing with their applications related to Industrial, Engineering, Biological and Ecological problems.

ii) Exhibit in depth the analytical and critical thinking to identify, formulate and solve real world problems of science and engineering.

iii) Get a relational understanding of mathematical concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning.

iv) A student should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences.

v) Apply their skills and knowledge,that is, translate information presented verbally into mathematical form, select and use appropriate mathematical formulae or techniques in order to process the information and draw the relevant conclusion.

vi) Be capable of undertaking suitable experiments/research methods while solving the real-life problem and would arrive at valid conclusions based on appropriate interpretations of data and experimental results.

vii) Develop written and oral communications skills in order to effectively communicate design, analysis and research results.

viii) Demonstrate appropriate inter-personal skills to function effectively as an individual, as a member or as a leader of a team and in a multi-disciplinary setting.

ix) Acquire competent positions in industry and academia as well.

Semester-V

DSE-1A: MT 351: Metric Spaces (2 credits)

Course Objectives: The course aims at providing the basic knowledge pertaining to metric spaces such as neighborhood, interior, closure, open and closed balls, continuity, completeness, compactness and connectedness etc.

Course Learning Outcomes: The course will enable the students to:

i) understand the introductory concepts of metric spaces;
ii) correlate these concepts to their counter parts in modern analysis by studying examples;
iii) learn to analyze mappings between spaces.
iv) attain background for advanced courses in real analysis, functional analysis, and topology.
v) appreciate the abstractness of the concepts such as open balls, closed balls, compactness, connectedness etc. beyond their geometrical imaginations.

DSE-1B: MT: 352 Real Analysis-I (2 credits)

Course Objectives: The course will provide students with a thorough understanding of real lines and distinguishing concepts in order to prove convergence and divergence of real number sequences and series. These principles have a wide variety of real-world applications.

Course Learning Outcomes: This course will enable the students to:

i) learn the basic facts in logic and set theory
ii) learn to define sequence in terms of functions from N to a subset of R and to understand several properties of the real line.
iii) recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence.
iv) use the ratio, root, alternating series and limit comparison tests for convergence and absolute convergence of an infinite series of real numbers.

DSE-2A: MT-353: Group Theory(2 credits)

Course Objectives: The course objective is to introduce students to the fundamental theory of groups and their homomorphisms. Symmetric groups and symmetries in groups, Lagrange's theorem are also studied in depth.

Course Learning Outcomes: The course will enable the students to:

i) recognize the mathematical objects that are groups, and classify them as abelian, cyclic and permutation groups, etc;
ii) analyze consequences of Lagrange's theorem
iii) learn about structure preserving maps between groups and their consequences.
iv) explain the significance of the notion of cosets, normal subgroups, and factor groups.

DSE-2B: MT-354- Ordinary Differential Equations (2 credits)

Course Objectives: The main objectives of this course are to introduce the students to the exciting world of differential equations, system of differential equationsand their applications.

Course Learning Outcomes: The course will enable the students to:

i) understand the genesis of ordinary differential equations.
ii) learn various techniques of getting exact solutions of solvable first order differential equations and linear differential equations of higher order.
iii) grasp the concept of a general solution of a linear differential equation of an arbitrary order and also learn a few methods to obtain the general solution of such equations.

DSE-3A: MT 355(A): Operations Research (2 credits)

Course Objectives: This course develops the ideas underlying the Simplex method for Linear programming problem, as an important branch of operations research. The course covers Linear programming with applications to Transportation and Assignment problem. Such problems arise in manufacturing resource planning and financial sectors.

Course Learning Outcomes: This course will enable the students to learn:

i) Analyze and solve linear programming models of real-life situations.
ii) The graphical solution of LPP with only two variables, and illustrate the concept of convex set and extreme points. The theory of the simplex method is developed.
iii) The relationships between the primal and dual problems and their solutions with applications to transportation, assignment and two-person zero-sum game problem.

DSE-3B: MT-356 (C): Laplace Transform and Fourier Series (2 credits)

Course Objectives: The main objective of this course is to determine properties of Laplace Transform and Fourier series which may be solved by application of special functions.

Course Learning Outcomes: This course will enable the students to learn:

i) Students will be able to know the use of Laplace transform in system modeling, digital signal processing, process control.
ii) Solve an initial value problem for an nth order ordinary differential equation using the Laplace transform.
iii) Find the Fourier series representation of a function of one variable

SEC-I: MT -3510: Programming in Python–I (2 credits)

Course Objectives:

1. To understand why **Python** is a useful scripting language for developers.
2. To learn how to use lists, tuples, and dictionaries in **Python** programs.
3. To learn and understand python looping, control statements and string manipulations.
4. To acquire programming skills in core Python.

Course Learning Outcomes: At the end of the course:

1. The student will be able to explain basic principles of Python programming language.
2. The student will implement object oriented concepts.

Course Objectives: The objective of this course is to introduce the fundamental theory of rings and their corresponding homomorphisms. The basic concepts of ring of polynomials and irreducibility tests for polynomials over ring of integers.

Course Learning Outcomes: The course will enable the students to learn about:

i) The fundamental concept of Rings, Fields, subrings, integral domains and the corresponding morphisms.
ii) Learn in detail about polynomial rings, fundamental properties of finite field extensions, and classification of finite fields.
iii) Appreciate the significance of unique factorization in rings and integral domains.

DSE-5B: MT 364: Partial Differential Equations (2 credits)

Course Objectives: The main goals of this course are to teach students how to form, solve, and apply partial differential equations to solve physical problems. Also, to introduce first and second order partial differential equations and their classifications and methods of finding solutions of these partial differential equations.

Course Learning Outcomes: The course will enable the students to:

i) formulate, classify and transform partial differential equations into canonical form.
ii) solve linear partial differential equations using various methodsand apply these methods in solving some physical problems.
iii) solve Laplace equations using various analytical methods demonstrate uniqueness of solutions of certain kinds of these equations.

DSE-6A: MT365 (A): Optimization Techniques(2 Credits)

Course Objectives: This course enables the students to get an idea about the

i) Network and basic components, Determination of critical path: Critical Path Method (CPM),Project Evaluation and Review Techniques(PERT).Time-cost optimization Algorithm.
ii) Problem of Sequencing, Processing n Jobs through Two Machines, Processing n Jobs through 3 Machines and Processing n Jobs through k Machines.

Course Learning Outcomes: The course will enable the students to:

i) understand fundamentals of Network Analysis using CPM and PERT.
ii) solve a sequencing Problem for various jobs and machines.

DSE-6B: MT- 366(B): Computational Geometry(2 credits)

Course Objectives: This course enables the students to gain detailed knowledge of the fundamental problems within computation geometry and general techniques for solving problems within computational geometry and practical experience with implementation issues involved in converting computation geometry algorithms into running programs.

Course Learning Outcomes: The course will enable the students to:

i) construct algorithms for simple geometrical problems.
ii) characterize invariance properties of Euclidean geometry by groups of transformations.
iii) describe and construct basic geometric shapes and concepts by computational means.

SEC-II: MT-3511: LaTeX for Scientific Writing (2 credits)

Course Objectives: The purpose of this course is

i) To provide an understanding of the basicmechanisms of LaTeX, using plain text as a vehicle

ii) To acquaint students with the latest typesetting skills, which shall enable them to prepare high quality typesetting.

iii)

Course Learning Outcomes: After studying this course the student will be able to:

i) Write a simple LaTeX input document based on the article class.

ii) Turn the input document into pdf with the pdflatex program.

iii) Format Words, Lines, and Paragraphs.

iv) Understand how to present data using tables.

Semester-VI

DSE-4A: MT - 361: Complex Analysis (2 Credits)

Course Objectives: This course aims to introduce the basic ideas of analysis for complex functions in complex variables with visualization through relevant Practicals. Particular emphasis has been laid on Cauchy's theorems, series expansions and calculation of residues.

Course Learning Outcomes: The completion of the course will enable the students to:

i) Understand the significance of differentiability of complex functions leading to the understanding of Cauchy-Riemann equations.

ii) Evaluate the contour integrals and understand the role of Cauchy-Goursat theorem and the Cauchy integral formula.

iii) Expand some simple functions as their Taylor and Laurent series, classify the nature of singularities, find residues and apply Cauchy Residue theorem to evaluate integrals.

iv) Represent functions as Taylor, power and Laurent series, classify singularities and poles, find residues and evaluate complex integrals using the residue theorem.

DSE-4B: MT: 362 Real Analysis-II(2 Credits)

Course Objectives: To comprehend bounded function integration on a closed and bounded interval, as well as its extension to situations where either the integration interval is infinite or the integrand has infinite limits at a finite number of points on the integration interval. The sequence and series of real-valued functions.

Course Learning Outcomes: The course will enable the students to learn about:

i) some of the families and properties of Riemann integrable functions, and the applications of the fundamental theorems of integration.

ii) beta and gamma functions and their properties.

iii) recognize the difference between pointwise and uniform convergence of a sequence of functions.

iv) illustrate the effect of uniform convergence on the limit function with respect to continuity, differentiability, and integrability.

DSE-5A: MT: 363 Ring Theory (2 Credits)

SEC-III: MT-3610: Programming in Python –II(2 Credits)

Course Objectives:

1. To acquire Object Oriented Skills in Python.
2. To develop the skill of designing Graphical user Interfaces in Python.
3. To learn and understand Python programming basics and paradigm.
4. To learn the concepts of visualization of data and database connectivity.
5. To develop the ability to write database applications in Python.

Course Learning Outcomes:

Upon successful completion of this course the student will be able to:

1. Demonstrate the use of Python in Mathematics such as operations research and computational Geometry etc.
2. Study graphics and design and implement a program to solve a real world problem.
3. The students will implement the concepts of data with python and database connectivity.

SEC-IV: MT-3611: Mathematics into LaTeX(2 Credits)

Course Objectives: The purpose of this course is to acquaint students with typesetting basic Mathematics in LaTeX.

Course Learning Outcomes: After studying this course the student will be able to:

i) typeset mathematical formulas, use nested list, tabular and array environments.

ii) import figures and pictures that are stored in external files.

----------***----------

Head
Department of Mathematics
S.V.K.T. College Deolali Camp,
Tal .Dist. Nashik (168)

Principal
Smt. Vimlaben Khimji Tejookaya
Arts, Science and Commerce College,
Deolali Camp, Dist.Nashik

M.V.P. Samaj's

S.V.K.T. Arts, Science & Commerce College Deolali Camp, Nashik
Department of Microbiology
2023-24

rogramme and course outcomes of the Programmes offered by the institution.

Programme	Programme outcome
BSc Microbiology	PO-1: Illustrate the basic concepts in biological sciences and their applications in various scientific fields. PO-2: Attribute the role of microbes in food and dairy manufacturing, ecology, agriculture, drug designing and other human welfare products. PO-3: Imbibe skills in handling scientific instruments, planning and performing laboratory experiments to find solutions for regional and national health threats like emerging microbial diseases. PO-4: Articulate good laboratory practices, which provide great carrier opportunities globally. PO-5: Imbibe ethical, moral and social values in personal and social life leading to highly cultured and civilized personality. PO-6: Explain microbiology discipline though involvement in experiment

Programme	Subject/Course	Course code	Course outcome
BSc Microbiology (F.Y.BSc)	Introduction to Microbial World	MB 111	1. Describe Frontiers of Microbiology 2. Summarise contribution of different scientist in Microbiology. 3. Write developments in 20th and 21st century. 4. Differentiate between different types of organisms. 5. Explain significance of normal flora. **6.** Describe bio fertilizer and bio control agents.
	Basic Techniques in Microbiology	MB 112	1. Describe different types of microscopy. 2. Sketch ray diagram of microscopes. 3. Illustrate principles and methods of different staining techniques. 4. Differentiate between sterilization and disinfection. 5. Compare effect of moist and dry heat on microorganisms. 6. State mode of action of different disinfectants.
	Bacterial Cell and Biochemistry	MB121	1. Explain bacterial cell cytology. 2. Describe ultra-structure of different parts of Bacterial cell. 3. illustrate functions of different parts of Bacterial cell. 4. Classify different biomolecules present in

			cell. 5. Sketch chemical structures of biomolecules 6. Describe functions of different biomolecules
	Microbial cultivation and growth	MB122	1. Classify bacteria based on nutritional requirement. 2. Explain design and preparation of media. 3. Write cultivation of extremophiles 4. Draw bacterial growth curve. 5. Compute number of microorganisms. 6. Illustrate factors affecting bacterial growth.
	Practical Course based on theory paper I and II	MB 113 &MB123	1. Apply safety measures and good laboratory practices and handle different instruments and glassware. 2. Prepare laboratory media and check sterilization efficiency of autoclave. 3. Demonstrate different parts of microorganism by staining. 4. Identify different microorganisms on the basis of morphology 5. Isolate bacteria and enumerate bacteria. 6. Analyse effect of different environmental factor on bacteria.
S.Y.BSc	Medical Microbiology and Immunology	MB 211	1. Introduction to common terminologies in medical microbiology. 2. Study of clinical pathogens 3. Introduction to chemotherapy and understanding the concepts of MIC and MBC 4. Understanding human immune system 5. Introduction to immunohematology and blood grouping. 6. Importance of vaccination and its types.
	Bacterial Physiology and Fermentation Technology	MB212	1. Introduction to enzymes and its structure. 2. Understanding the factors affecting the activity of enzymes 3. Study of different models of enzyme catalysis. 4. Understanding various pathways that contributes to cell metabolism. 5. Concept of fermentation technology. 6. Industrially important microorganisms. 7. Understanding the design of typical fermenter and parameters that monitors fermentation process. 8. Media for industrial fermentations and Contamination: Sources, precautions, and consequences
	Practical based on MB211 & MB 212	MB 213	1. Determination of blood grouping. 2. Study of various biochemical test for identification of pathogens. 3. Screening of industrially important microorganism.
	Bacterial Genetics	MB 221	1. Study of evidences for nucleic acid as genetic material. 2. Understanding structure of nucleic acids. 3. DNA replication and gene expression. 4. Introduction to various types of mutations. 5. Study of plasmid and its characters.
	Air, Water and Soil Microbiology	MB 222	1. Acquire knowledge about air flora and methods of air sampling. 2. Understanding methods of air sanitation and air borne infections.

			3. Study of Recommended Bacteriological standards of Water Quality. 4. Gain knowledge regarding water borne infections and fecal indicators. 5. Bacteriological analysis of water for potability. 6. Study of concepts of soil microbiology, biocontrol agent, biofertilisers and microbial interactions.
	Practical based on MB221 & MB 222	MB 223	1. Study of air sampling and study of its flora. 2. Bacteriological tests for potability of water. 3. Understanding the method for Enrichment, Isolation, Preparation and Application of Bioinoculant. 4. Study of mutagenic agent and method of isolation of mutant.
BSc Microbiology (T.Y.BSc)	Medical Microbiology- I Medical Microbiology II	DSEC-MB 351 DSEC-MB 361	1. Understand the human anatomy, pathogens associated with diseases. 2. Acquire knowledge of principles underlying establishment of pathogens in human body. 3. Comprehend of pathogenesis of specific pathogens causing microbial diseases. 4. Assess epidemiological patterns of microbial disease transmission as various modes, intensity at local and global level. 5. Gain Knowledge principles of chemotherapy of microbial diseases and development of drug resistance among pathogens and strategies to mitigate. 6. Develop identification systems for microbial disease diagnosis, disease treatment and prevention measures.
	Immunology- I Immunology– II	DSEC-MB-352 DSEC-MB 362	1. Understand immune system structure, composition, function and comparison of different types of immunity. 2. Acquire knowledge about antigens, Recognition of pathogens; antigen processing and presentation; Immunity to infection and pathological consequences of immunodeficiencies. 3. To learn the applications of Immunology in monoclonal antibodies, vaccines production and Immunotherapy. 4. Understand abnormal working of Immune system in hypersensitivity, auto immune diseases, immune tolerance and transplantation immunology. 5. To develop strategies for Diagnosis of diseases based on antigen and antibody reactions with emphasis on prevailing communicable diseases.
	Enzymology Metabolism	DSEC-MB 353 DSEC-MB 363	1. To understand methods of active site determination, role of enzymes and its cofactors in microbial physiology. 2. To learn to perform enzyme assay, purification and quantification of enzymes activity, enzyme kinetics in terms of initial, final velocity, mathematical expression of enzyme kinetic parameters. 3. To correlate regulation of metabolism at enzymatic levels and apply, methodology for commercial applications of enzymes. 4. To learn mechanisms of transport of solutes across the membrane.

			5. To get acquainted with mechanism of biosynthesis and degradation of bio molecules. 6. 6. To comprehend basic concept of autotrophic mode of metabolism of prokaryotes
	Genetics Molecular Biology	DSEC -MB 354 DSEC -MB-364	1. To exhibit a knowledge base in Genetics and Molecular Biology 2. To understand the central dogma of Molecular Biology 3. To construct genetic map of bacteria and fungi 4. To get introduced to concept of recombination and bacteriophage Genetics 5. To understand the concept cloning in bacteria 6. To demonstrate the knowledge of common and advanced laboratory practices in Molecular Biology
	Fermentation Technology– I Fermentation Technology – II	DSEC -MB 355 DSEC - MB 365	1. To impart technical understanding of commercial fermentations. 2. To apply classical, advanced strain improvement and isolation techniques for fermentation processes. 3. To optimize and sterilize media used in fermentation industry for commercially economical and efficient fermentations. 4. To recover the product using suitable methods and ensuring quality of the finished product by quality assurance tests. 5. To acquaint fermentation economics, process patentability, process validation. 6. To comprehend the large-scale productions of commercially significant fermentation products of classical and recent significance.
	Agricultural Microbiology	DSEC - MB 356	1. To understand plant growth improvement with respect to disease resistance, environment tolerance. 2. To correlate stages of plant disease development, epidemiology, symptom based classification, control methods. 3. To understand the importance of microorganisms in sustainable agriculture, biotechnological application of bio films, edible vaccines. 4. To correlate Soil Micro biome and Role of microorganisms in soil health 5. To determine the use of Microorganisms as tools in plant genetic engineering.
	(Skilled Base Elective) Marine Microbiology	MB 3510	1. To impart the awareness of unseen and unexplored niche of marine ecosystem of microbes. 2. To acquire advances in the knowledge of marine microbes and marine ecology. 3. To learn the field research on marine processes and laboratory research on microorganisms. 4. To comprehend the role of marine microbes in bioremediation and bioprospecting. 5. To avail career opportunities in marine education, industry and research.
	(Skilled Base Elective) Dairy Microbiology	MB 3511	1. To understand prospects of dairying at commercial marketing. 2. To acquire skills of processing of milk and dairy products. 3. To assess quality control in dairy industry. 4. To comprehend production of dairy products of commercial significance with emphasis to local and global market demand.

	Food Microbiology	DSEC - MB 366	1. To describe food safety problems and solutions in India and global scale. 2. Identify and classify types of microorganisms in food processing and compare their Characteristics and behaviour 3. To learn food classification based on their perishability, intrinsic and extrinsic factors affecting the growth of microbes in foods, role of microorganisms in food fermentation. 4. To acquire knowledge about food spoilage, food borne diseases, predisposition and preventive and control measures. 5. To apply principles of sanitation, heat treatment, irradiation, modified atmosphere, antimicrobial preservatives and combination of method (hurdle concept) to control microbial growth with emphasis on HACCP guidelines.
	(Skilled Base Elective) Waste Management	MB 3610	1. To understand waste management and it practicable applicability. 2. To assess the magnitude and influence of hazardous content of waste, pollution of waters and waste water treatment technologies. 3. To learn the design and working of treatment plants and methods used for liquid and solid waste treatment. 4. To impart the understanding of kinetics of biological systems used in waste treatment. 5. To learn the standards of waste management and competent authorities involved at National and international level.
	(Skilled Base Elective) Nano-biotechnology	MB 3611	1. To understand design, development and application of Nanomaterials and their application in Nanodevices. 2. To learn fundamentals of nanotechnology as to Synthesis and characterization techniques of nanoparticles. 3. To acquire knowledge of applications of nanomaterials in different disciplines of human life. To compare the merits of using nanotechnology with existing technologies.
	Diagnostic Microbiology and Immunology	MB – 357	1. Calculate blood cells and haematological indices estimate haemoglobin concentration. 2. Prepare epidemiological survey 3. Isolate pathogen from clinical samples. 4. Diagnose disease by agglutination test 5. Perform immuno precipitation.
	Enzymology and Genetics	MB 358	1. Estimate blood sugar, urea, cholesterol and protein. 2. Produce and purify enzyme. 3. Prepare buffer and quantitate proteins and carbohydrate. 4. Calculate phage titer. 5. Isolate genomic DNA. 6. Separate compounds by paper chromatography.
	Fermentation Technology- I and Agricultural Microbiology	MB 359	1. Isolate pesticide degrading and lactic acid producing bacteria. 2. carry out large scale production of ethanol. 3. Find out antibiotic and vitamin concentration by assay. 4. Assure quality of fermentation product. 5. Prepare bioinoculant and identify plant pathogen

2.6.1 Teachers and students are aware of the stated Programme and course outcomes of the Programmes offered by the institution.

Programme	**Programme outcome**		
MSc-I Microbiology	1. To enrich students' knowledge and train them in the pure microbial sciences 2. To introduce the concepts of mathematics in biology 3. To inculcate research aptitude 4. To inculcate sense of scientific responsibilities and social and environment awareness 5. To help student's build-up a progressive and successful career in Microbiology		
Programme	**Subject/Course**	**Course code**	**Course outcome**
MSc Microbiology(I)	Microbial Systematics	MB 511 MJ	CO1 • define species concept in prokaryotes and eukaryotes • list measures and indices of diversity • define –unculturable' bacteria and list culture independent molecular methods for identifying unculturable bacteria • list different molecular methods used in microbial taxonomy • know difference between 6 Classes of Fungi CO2 • explain 5-Kingdom and 3 domain classification system and facets of microbial diversity • understand molecular evolution • explain Socio-biology and Lamarckism, Darwinism, Neo Darwinism and understand Game theory, r and k selection CO3 • apply the use molecular clocks in taxonomy • summarize various theories of evolution 1.
	Biochemistry, Cell and Developmental Biology.	MB 512 MJ	CO1 Students learn about structural features of amino acids and proteins and their functions. CO2 Students get introduced with biochemistry and molecular biology technique. CO3 Students get introduced to developmental biology in that hox code, mechanism of gastrulation, pattern formation in body axis CO4 Students get introduced with ultrastructure and organization of eukaryotic cell, n transport and cell cycle.
	Basic Quantitative Biology	MB 513 MJ	CO 1 Understand importance of statistics in biology CO 2 Understand basic terms used in statistics Formulate a hypothesis for the experiment as well as test it using appropriate methods. CO 3 Methods for Systematically collection and arranging different type of data CO 4 Calculate basic statistical parameters, plot graphs by using data

			CO 5 Calculate and interpret the observations by using tests used inferential statistics CO 6 Describe the method to collect samples in the most appropriate way to carry out desired experiments. Record the data obtained in the experiment in a suitable way. CO 7 Design the experiments based on the different principles. CO 8 Apply the measures of central tendency, dispersion to the data and calculate the probability of obtaining the expected results in the experiments. CO 9 Analyze large data to get a meaningful inference from it. CO10 Compare the different methods of measuring central tendency and evaluate the best suitable one for a particular data CO11 Formulate a hypothesis for the experiment as well as test it using appropriate methods.
	Biochemical Techniques Compulsory Practical Paper	**MB 514 MJP**	CO1 To follow and appreciate protocols and practices in the laboratory as per the standards for successful practical completion CO2 Methods to prepare biological buffers CO3 Effective ways of presentation of biological data and its statistical using software CO4 Microbiological procedures required for isolation, characterization and identification of microbes. CO5 Methods for visualization of cell division CO6 Basic aspects of developmental biology CO7 Methods for extraction of microbial biomolecules and their estimation Computational aspect of protein structures
	Research Methodology	**MB 510 RM**	CO1 Understand research terminology CO2 Describe quantitative, qualitative and mixed methods approaches to research CO3 Identify the components of a literature review process CO4 Analyze and interpret the research CO5 Apply ethical principles of research in preparation of scientific documents
	Research Methodology	MB 510 RMP	CO1 Understand research terminology CO2 Describe quantitative, qualitative and mixed methods approaches to research CO3 Identify the components of a literature review process CO4 Analyze and interpret the research CO5 Apply ethical principles of research in preparation of scientific documents
	Microbial Extremophiles	**MB 515 MJ**	CO1 study of extremophiles - microorganisms surviving under harsh conditions CO2 applications at industrial level of extremophiles CO3 mechanisms of surviving of extremophiles under harsh conditions CO4 classes of extremophiles

	Practicals based on Microbial Extremophiles	**MB 515 MJP**	To build identification key for extremophilic microbes CO5 Identify extremophilic microbes using such keys Technical details pertaining to samples required for isolation of extremophilic Microbes.
	Molecular Biology I	**MB 521 MJ**	CO1 To remember the basic differences between the Eukaryotic and the Prokaryotic Genome organization-working CO2 To understand the regulation of Eukaryotic and Prokaryotic Gene expression with examples CO3 To apply recombinant DNA technology and genetic engineering in the field of molecular Biology CO4 To analyze and evaluate the molecular diagnostic techniques and its applications
	Enzymology	MB 522 MJ	CO1 understand about enzyme kinetics, the mechanisms of enzyme catalysis, and the mechanisms of enzyme regulation in the cell. CO2 gain knowledge of purification methods of enzymes. They will define terms related to thermodynamics. They will draw structure of hormones. CO3 conceive the concept of energy, cite examples and assess its importance to living organisms. CO4 understand the Kinetics of enzyme reactions and gain knowledge of role of enzyme inhibitors CO5 write metabolic pathways with respect to carbohydrate and lipid metabolism. They will solve problems based on enzyme kinetics, purification and thermodynamics
	Laboratory Techniques and Instrumentation	**MB 523 MJ**	CO1 Study of techniques will help in understanding basics CO2 Study of techniques will help in application of electromagnetic spectrum. CO3 Studies of structure will lead to in depth knowledge of Biomolecules CO4 Techniques of Spectroscopy will improve technical knowledge which will help in Skill development.
	Practicals based on MB 521 MJ Molecular Biology I, MB 522 MJ Enzymology, Bioenergetics and Metabolism, and MB 523 MJ Laboratory Techniques and Instrumentation	**MB 524 MJP**	CO1 To familiarize students with the molecular Biology techniques which includes study of DNA, RNA, proteins etc CO2 To gain an understanding of the solution, the calculations and preparation for cellular extraction of biomolecules and Purification. CO3 To experience a hands-on approach and the troubleshooting during processing of the biomolecules CO4 To have an insight in the usage of bioinformatics and data bases in gene annotation procedure

	Nitrogen Metabolism, Respiration and Photosynthesis	MB 526 MJ	CO1 Understand of biological nitrogen fixation and its regulation. CO2 Gain knowledge of enzymes involved in nitrogen metabolism. CO3 Knowledge of anaerobic respiration with respect to chemolithotrophs CO4 Differentiate between oxygenic and anoxygenic photosynthesis mechanism
	Practical based on Nitrogen Metabolism, Respiration and Photosynthesis	MB 526 MJP	CO1 Methods used for isolation of microbes able to produce the metabolites such as indole acetic acid, siderophores and techniques for their detection. CO2 Techniques used for isolation of microbial system that are able to fix the atmospheric nitrogen. CO3 Characterization technique for polyphenols and tannins CO4 Microbial methods for isolation and characterization of microbes able to degrade biomolecules such as xylan/lignin CO5 Microbial methods required for isolation of sulfur reducing microbes / methanogens CO6 Microbial methods for photosynthetic microbes such as cyanobacteria and biochemical method to determine its chlorophyll content
Programme	**Programme outcome**		
MSc-II Microbiology	**1.** To enrich students' knowledge related to basic concepts of Immunology **2.** To aware students' about host immune response **3.** To acquaint students with the cell surface receptors present on various cells for signal transduction pathways.		
Programme	**Subject/Course**	**Course code**	**Course outcome**
MSc Microbiology (II)	Immunology	MBCT 231	1. Students will understand the concepts of Immunology 2. They will be able to understand the different effector mechanisms of host immune response 3. This course will elucidate the concepts of signal transduction pathways to students
	Molecular Biology	MBCT - 232	1. The concepts of Molecular Biology will be familiar to students 2. Students will be able to understand the concept of Metabolomics. 3. Detail knowledge about the concept and applications of transgenic plants and transgenic animals will be gained.
	Clinical Microbiology	MBCT - 233	1. The concepts of medical microbiology and medically important micro-organisms will add on to students knowledge. 2. Pupil will get to know about knowledge of morphology, cultural characteristics, biochemical tests, epidemiology, laboratory diagnosis etc of bacterial pathogens 3. They will also understand the basics and applications of various chemotherapeutic agents and their mode of action

	Practicals based on Immunology, Molecular Biology and Clinical Microbiology	MBCP - 234	1. Familiarity about techniques Immunology will be increased among students 2. They will learn about Molecular Biology techniques 3. Students will be acquainted with techniques in Clinical Microbiology
	Bioremediation and Biomass Utilization	MBET: 236	1. Students will develop an interest in the field of bioremediation 2. They understand the concepts of biomass utilization 3. The ideology behind concepts and use of microbial degradation will be clear to them
	Practicals based on Bioremediation and Biomass Utilization	MBEP: 236	1. An interest will be developed in the field of bioremediation 2. They will understand the concepts of biomass utilization 3. Students will understand the concepts and use of microbial degradation
	Pharmaceutical Microbiology	MBCT 241	1.To enrich students' knowledge related to basic concepts in drug discovery and drug development. 2.To inculcate the knowledge regarding the drug designing , pharmacokinetics and pharmacodynamics 3.To aware students with the concepts of pharmaceuticals.
	Microbial Technology	MBCT 242	1. To aware students about of microbial technology. 2. To make them familiar with various techniques in fermentation. 3. To teach them applications of microorganisms in various industries.
	Dissertation	MBCP: 243	1. To enable students to choose a dissertation topic of research or application orientation 2. To apply the theoretical knowledge into practical dissertation work. 3. To inculcate the knowledge of Research designs, tools and techniques of gathering data. 4. To make students acquainted to analyze qualitative and quantitative data with explanation of how evidence gathered supports an initial hypothesis. 5. To help out students to write an extensive and comprehensive piece of written work so as to convey dissertation in the most proficient and effective way
	Quality Assurance and Validation in Pharmaceutical Industry and Development of Anti Infectives from plants	MBET 244	1. To aware students on Quality Assurance in Pharmaceutical Industry and the concepts of validation in Pharmaceutical Industry 2. To inculcate the insight of quality assurance and quality management in pharmaceuticals 3. To give them the knowledge of Therapeutic ratio, MIC and MBC Susceptibility Testing
	Practicals based on Quality Assurance and Validation in Pharmaceutical Industry and Development of Anti Infectives from plants	MBEP 244	1. To make students aware of Quality Assurance in Pharmaceutical Industry. 2. To inculcate the concepts of validation in Pharmaceutical Industry. 3. To give acquaintance about development of anti- infectives from plants

	Industrial waste water treatment and Industrial production of vaccines	MBET 246	1.To aware students about the concepts of Industrial Waste Water Treatment 2.To make them understand about sludge treatment 3.To teach pupil about the Industrial Production of Vaccines
	Practicals based on Industrial Waste Water Treatment and Industrial Production of Vaccines	MBEP 246	1.To introduce students with concepts of Industrial Waste Water Treatment 2.To make them understand about sludge treatment 3.To teach them about the Industrial Production of Vaccines

Maratha Vidya prasarak Samaj's

S.V.K.T. Arts, Science & Commerce College, Deolali Camp, Nashik

Departmnet of Physics

Programme Outcome - 2022-23

Programme Outcome of Physics deals with a wide variety of systems, certain theories are used by all physicists. Each of these theories were experimentally tested numerous times and found to be an adequate approximation of nature. Physics uses mathematics to organize and formulate experimental results. From those results, precise or estimated solutions, quantitative results from which new predictions can be made and experimentally confirmed or negated. The results from physics experiments are numerical measurements. Technologies based on mathematics like computation have made computational physics an active area of research.

Programme Specific Outcome

Undergraduates learning outcomes in science students will be able to……..

- Explain evaluate and effectively interpret factual clarions theories and assumptions for students' discipline (Physics).
- Find access critically evaluate and ethically use of information.
- Integrate quantitative and qualitative information to reach creative conclusions.
- Apply concepts of sustainability to analyse challenges facing humans and earth's resources.
- Familiarize with recent scientific and technological developments.
- Help students to learn various experimental and computational tools thereby developing analytical abilities to address real world problems.
- Train students in skills related to research, education, industry and market.
- Help student to build-up a progressive and successful career in physics.

S.V.K.T. COLLEGE DEOLALI CAMP IQAC INTERNAL QUALITY ASSURANCE CELL

Course Outcomes F.Y.B.Sc

Credit Pattern: **CBCS: 2019-20**

Sr.No.	Syllabus	Outcome
1.	Mechanics	CO 1.:- The first two chapters of the course will help students to understand detail basic laws used in mechanics with their applications. CO 2.:- Third and Fourth chapterswill help the students to understand properties such assurface tension, Elasticity & viscosity with their applications in our daily life.
2.	Physics Principles & Applications	CO 1.:- This course is introduced the basic principles used in atoms & molecules. CO 2.:- An important device laser is also introduces to give the depth Understanding of its mechanism & applications. CO 3.:- Students will get the knowledge of Electromagnetic radiations. CO 4.:- Such as radio waves, X-rays, visible light, infrared light, ultraviolet light etc. CO 5.:- The student will learn principle of Pyrometer, solar cell, microwave Oven, RADAR, C-T Scan etc.
3.	Heat & Thermodynamics	CO 1.:- Experiments of thermodynamics are developing the knowledge of students about history & origin of concepts. CO 2.:- This course will help the students to study & understand laws of thermodynamics different process. CO 3.:- Applications of heat engines, refrigerators air conditioning etc. CO 4.:- Student will get information of different principles, types & information of different principles types & applications of thermometry.
4.	Electromagnetism	CO 1.:- This course is important which is useful to understand the origin of electric & magnetic field & determine their intensities. CO 2.:- Student will learn electric intensity, electric potential in different materials. CO 3.:- Study of dielectric materials will be useful for different applications.

		CO 4.:- Physical significance of dielectric parameter magnetic properties will be helpful while applying these fields in different regions of application. CO 5.:- Study of current loops helps the student to study attractive or repulsive nature.
5.	Practical	CO 1.:- Use various instruments and equipment. CO 2.:- Investigate the theoretical background of an experiment. CO 3.:- Setup experimental equipment to implement an experimental approach. CO 4.:- Work in a group to plan, implement and report of experiment. CO5. - Keep a well-maintained and instructive laboratory logbook.

S.Y.B.Sc

Credit Pattern: CBCS**: 2019-20**

Sr.No.	Syllabus	Outcome
1.	Mathematical method in physics-I	CO 1.:- Student will understand the algebra of complex numbers useful in physics courses. CO 2.:- Student will understand concept of Partial differentiation. CO 3.:- Student will understand the role of partial differential equations in physics. CO 4.:- Student will understand vector Algebra useful in mathematics and Physics. CO 5.:- Student will understand the Concept of singular points of Differential equations.
2.	Electrocnics-I	CO 1.:- Student can apply different Theorems and laws to electrical Circuits. CO 2.:- Student will understand the Relations in electricity

		CO 3.:- Student will understand the Parameters, characteristics and Working of transistors. CO 4.:- Student will understand the Functions of operational Amplifiers. CO 5.:- Student can design circuits using Transistors and applications of Operational amplifiers. CO 6.:- Student will understand the Boolean Algebra & logic circuits.
3.	Waves, Oscillations & Sound	CO 1.:- Student will study underlying principles of oscillations and its scope in development. CO 2.:- Student can understand and solve the equations/graphical representations of motion for of motion for simple harmonic, damped, forced oscillators and Waves. CO 3.:- Student can explain oscillations in terms of energy exchange with various practical application. CO 4.:- Student can solve numerical Problem related to undamped, Damped, forced oscillation and Superposition of oscillations. CO 5.:- Student will study characteristics of sound, decibel scales and Applications.
4.	Optics	CO 1.:- Student will be able to acquire the basic concept of wave optics. CO 2.:- Student can describe hoe light Constructively and destructively Interfere. CO 3.:- Student can explain why a light Beam spread out after passing through an aperture. CO 4.:- Students will be able to summarize is the polarisation characterises of electrodynamics waves.

		CO 5.:-They can understand the operation of many modern optical devices that utilizes wave optics. CO 6.:-Student will be able to understand optical phenomenon such as polarization, diffraction and interference items of wave model. CO 7.:- Student can analyse simple example of interference and diffraction.
5.	Practical	CO 1.:- Use various instruments and equipment. CO 2.:- Design experiment to test a hypothesis and/or determine the value of an unknown quantity. CO 3.:- Investigate the theoretical background of an experiment. CO 4.:- Setup experimental equipment to implement an experimental approach. CO 5.:- Analyze the data, plot appropriate graphs and reach conclusion from data analysis. CO 6.:- Work in a group to plan, implement and report on a project/experiment. CO 7.:- Keep a well-maintained and instructive laboratory logbook.

T.Y.B.Sc. Physics (CBCS) 2019 Pattern

Sr.No.	Syllabus	Outcome
1.	Mathematical Method in Physics-II	CO 1.:- Student will get information about various co-ordinate systems for solving physics CO.2:- Student will able to explain different problems between Newtonian & Einstein relativity. CO 3.:- He can solve physics problems using differential equations. CO 4.:- He will know the important of Special function in physics & their solutions.
2.	Electrodynamics	CO 1.:- Student will be able to solve problems on electric intensity & potentials using law of electrostatics.

		CO 2.:- Student will explain generation of magnetic field by electric currents. CO 3.:- He will interpret the meaning of the Maxwell's equations in magnetic & dielectric media.
3.	Classical Mechanics	CO 1.:- Student will use conservation of energy & linear as well as angular momentum to solve dynamic problems. CO 2.:- Student will able to solve problems related to Newton's laws, Kepler's laws & their applications in planetary motion. CO 3.:- He can explain types of scattering & get idea of canonical Transformation for solving problems in mechanics. CO 4.:- He may apply Lagrangian & Hamiltonian equations to solve these problems.
4.	Atomic and Molecular Physics	CO 1.:- Student will explain various atomic models & their assumption as well as applications. CO 2.:- He can get idea of different types of coupling. CO 3.:- He will able to develop Zeeman effect set up. CO 4.:- He will know idea of rotational & vibrational spectra. CO 5.:- He can explain Raman spectroscopy & their applications.
5.	C-Programming & Computational Physics	CO 1:- Student will know the basic idea of algorithm, flowchart, syntax of C-programming language reserve words constant, variables, operators, arrays, pointers, functions etc. CO 2.:- Student will solve problems in Physics using different omputation methods such as Newton Rhason method, Bisection method, Trapezoidal rule, Simpson's rule etc. CO 3.:- He will know the basic graphic commands to draw different figures. CO 4.:- He can write C-program for any problem in physics.
6.	Elements of Material Science	CO 1.:- The student will explain electric, mechanical & thermal properties of materials.

		CO 2.:- Student will study defect in solid like line, surface & volume defects. CO 3.:- Student will know diffusion mechanism according to Fick's law. CO 4.:- Student studies phases of metals & explain CRSS (Critical Resolved Shear stress), Plastic deformation. CO 5.:- Student will know polymerisation process. CO 6.:- Student will know about ceramic materials by addition & condensation methods. CO 7.:- For phase diagram student will know lever rule & Gibb's phase rule & phases of substance. CO 8.:- Student will know about smart materials along with their properties & applications.
7	Energy studies	CO.1:-Students become capable of conduction energy audits and give consultancy in that field. CO2:-Students can design different types of solar heaters for small domestic as well as large scale community level applications. CO3:-Students acquire skills to implement solar P-V systems at domestic levels as well as for office premises and educational institutions. Students become able to start their own enterprise in net metering. CO.4:- Students get ideas and hence become self-employed in the field of design, production, commissioning and implementation of bio-mass energy sources, bio-gas plants, gasifiers, wind mills, hybrid systems etc. CO 5.:-Students can go for research in the fields of super-capacitors, battery technologies, fuel cells and material synthesis for implementation of these technologies. CO6:-Students become successful entrepreneurs in the energy field. Students strive to make the regions where they live and work self-sufficient in generating and fulfilling their own energy needs using different energy solutions.

8	**Physics Work shop Skill**	**Objectives:** This course is to get exposure with various aspects of instruments and their usage through hands-on mode. **Course outcomes:-** Aftercompletionofthiscoursestudentswillabletohandleandtestvariousinstruments.
9.	Solid State Physics	CO 1.:- Student will know various types of crystal structures & the properties. CO 2.:- X-ray diffractions techniques for analysis of materials. CO 3.:- Theoretical knowledge about band of metals, insulator & semiconductors. CO 4.:- Student will know different magnetic materials, their characteristics& uses.
10.	Quantum Mechanics	CO 1.:- Student will get basic knowledge of classical & quantum mechanics & comparison of two. CO 2.:- Get idea of wave function & its normalisation. CO 3.:- Student can derive Schrodinger's time dependent & time-independent equations & can apply them to solve problems in physics & get appropriatesolutions. CO 4.:- Student will get the idea of uncertainty principle &application of it. CO 5.:- Student will know operators in quantum mechanics & their properties to find expectation values. CO 6.:- Student can solve different properties of commutator operators. CO 7.:- He will get idea of parity of functions. CO 8.:- Student can obtain eigen vale & eigen functions.
11.	Thermodynamics & Statistical Physics	CO 1.:-Student will explain assumptions of Kinetic theory of gases. CO 2.:-He will explain the physical significance of Maxwell's equations and get idea of statistical concepts for solving physics problems.

		CO 3.:- He can calculate density states, probability using statistical laws. CO 4.:- Student will know different types of ensembles used in statistics. CO 5.:- Student will get idea of classical and quantum statics. CO 6.:- Student will get knowledge of skill to use statistical physics method, such as Boltzmann distribution, Gibb's distribution, Fermi Dirac and Bose Einstein distribution to solve Physics problem.
12.	Nuclear Physics	CO 1.:-Student will get idea of nuclear and their properties. CO 2.:- Student will explain radioactivity & its applications. CO 3.:- Students will know the fundamental properties of nuclear forces, particle accelerators and detectors. CO 4.:- Student will get information about energy generation using Nuclear reactions and can calculate the parameters of nuclear reaction such as packing fraction. CO 5.:- Student will able to demonstrate A knowledge and broad understanding of nuclear physics.
13.	Electronics-II	CO 1.:- Student will explain different types of diode and their applications. CO 2.:- Student will classify amplifiers and able to design different types of amplifiers. CO 3.:- Student will know applications of Op-Amp. Such as integrator, differentiator, adder, subtractions. CO 4 .:- Student will explain block diagram and applications of time 555. CO 5.:- Student can explain different types of power supply (723, 78XX, 79XX etc). CO 6.:- Design of law higher voltage power supplies. CO 7.:- Student can explain adder, subtractor, multiplexer, demultiplexer using logic gates,

		CO 8.:- Use of Flip-flops, counters and registers. CO 9.:- In all at the end student can design and analyse the electronic circuit and can understand current voltage characteristics of voltage characteristics of semiconductor devices
14.	 LASER	CO 1.:-Student will get basic ideas of laser, action and properties. CO 2.:- Student can explain pumping schemes of laser oscillators. CO 3.:- Student will get idea about different types of broadening. CO 4.:- Student will know all characteristics of lasers. CO 5.:- Student will know types of lasers & their uses in different fields. CO 6.:-Student will know applications of lasers in different fields. CO 7.:- Student can plan some project using laser and can apply their knowledge for technological purpose. CO 8.:- Different experiment can be set up to study characteristic of laser.
15.	Practical Courses	CO.:- Student will get knowledge by verifying law's of physics after performing experiment in the laboratory.
16.	Project Course	CO.:- Student will get idea of research work by completing project in the laboratory and can draw the conclusion. conclusion of the project.
17	**Solar PV System: Installation, Repairing and Maintenance**	**Objectives:** 1. In this skill oriented course, student will study basics of solar photovoltaic (PV) cells, modules, and system components. 2. Design and sizing of off-grid PV system for homes, apartments as well as commercial offices. 3. Understanding energy conversion from sunlight to electricity, and working with solar conversion equipment. 4. This Course will hands on experience needed to become self-employed.

		Outcomes: CO 1:-Learn basics of light conversion in electricity. CO2:- Hands on training will motivate to use Solar PV system. CO 3:-Become entrepreneur/self- employed. CO 4:-Analyzed of MSEB electricity bill and design and sizing of off-grid PV system CO 4:-Participants will learn about solar PV module and batteries used in solar PV plant.
18	**Instrumentation for Agriculture**	**Objectives:** After completion of this course students can 1. Get knowledge of sensors used in agriculture field 2. Learn continuous and batch process 3. Learn green house automation schemes 4. Learn Instrumentation in Irrigation **Course Outcomes:** After completion of this course student will CO 1:-Able to test soil and water parameters. CO 2:-Able to develop their own juice extract plant. CO 3:-Able to developed their own green house

S.V.K.T. COLLEGE DEOLALI CAMP IQAC QUALITY ASSURANCE CELL

Head,
Department Of Physics
S.V.K.T. College Deolali Camp,
Nashik - 422101

Course Outcomes (F.Y.BCA SEM I & II)

Sr. No.	SUBJECT NAME	COURCE OUTCOME
1	Fundamentals of Computer	At the end of the course, students will be able to • Define working of computers and peripherals, types of software and languages • Troubleshoot the computer systems and use utility software • Choose commands and features of operating systems and application software • Use open source software
2	Problem Solving and C Programming	At the end of the course, students will be able to • Define algorithms and explain their characteristics • Formulate algorithm and draw flow chart to solve a given problem • Explain use of appropriate data types, control statements • Demonstrate ability to use top-down program design
3	Applied Mathematics	On completion of the course, students will be able to • Relate and apply techniques for constructing mathematical proofs and make use of appropriate set operations, propositional logic to solve problems • Use function or relation models to interpret associated relationships • Apply basic counting techniques and use principles of probability • Given a data, compute various statistical measures of central tendency • Use appropriate Sampling techniques
4	Business Communication	On completion of the course, students will be able to • Apply business communication strategies and principles to prepare effective communication for domestic and international business situations • Identify ethical, legal, cultural, and global issues affecting business communication. • Participate in team activities using collaborative work skills. • Communicate via electronic mail, Internet, and other technologies. • Deliver an effective oral business presentation
5	Computer Organization	On completion of the course, student will be able to • Design of combinational circuits • Design of sequential circuits • Explain block diagram of CPU, Memory and types of I/O transfers
6	Advanced C Programming	On completion of the course, student will be able to • Write programs using pointers, structures and unions • Use Pre-processor directives • Manipulate strings using library functions

		• Write programs to perform operations on Files
7	Operating Systems Concepts	On completion of the course, student will be able to • explain basic concepts of operating system • use basic Linux commands and Linux documentation • write shell scripts
8	Database Management Systems – I	On completion of the course, student will be able to • Design E-R Model for given requirements and convert the same into database tables. • Formulate database queries using SQL • Design a database in appropriate normal form
9	BCA115: Fundamentals of Computers Laboratory	□ Install operating system and execute various commands □ Effectively use various features of application software □ Create and use spreadsheets effectively □ Prepare effective Presentation
10	BCA116: C Programming Laboratory	□ Formulate an algorithm and draw flowchart for the given problem □ Implement the given algorithm in C □ Write programs using appropriate data types and control structures in C
11	BCA117: Applied Mathematics Laboratory	• Apply mathematical and statistical concepts to solve problems • Use R to perform statistical operations and data visualization
12	BCA118: Business Communication Laboratory	□ Effectively listen to lectures, public announcements and news on TV and radio. □ Engage in telephonic conversation. □ Communicate effectively and accurately in English □ Use spoken language for various purposes □ Demonstrate ability to prepare documents used in business correspondence
13	BCA125: Computer Organization Laboratory	□ Design and implement combinational circuits □ Design and implement sequential circuits □ Translate real world problems into digital logic formulations
14	BCA126: Advanced C Programming Laboratory	□ Write programs using pointers, structures and unions □ Use Pre-processor directives □ Manipulate strings using library functions □ Write programs to perform operations on Files
15	BCA127: Operating Systems Laboratory	

		□ Install Linux and packages, configure environment □ Use commands and editors and use documentation □ Configure Security and network environment
16	BCA128: Database Management Systems – I Laboratory	□ Prepare E-R Diagram for the given problem statement □ Formulate appropriate SQL DDL Queries □ Formulate appropriate SQL DML Queries

Course Outcomes (S.Y.BCA SEM III & IV)

Sr. No.	SUBJECT NAME	COURCE OUTCOME
1	BCA231 :Data Structures	After successful completion of this course, learner will be able to □ Apply appropriate data structures for the given problem. □ Design an efficient algorithm for the given problem. □ Determine the time and space complexity of a given algorithm
2	BCA232 : Database Management Systems – II	After successful completion of this course, learner will be able to □ Formulate SQL queries using advanced SQL features. □ Perform Database operations using PL/PostgreSQL. □ Compare and contrast different concurrency control and recovery techniques. □ Apply mechanisms for database security. □ Analyze various database system architectures.

3	BCA233: Computer Networks	After successful completion of this course, learner will be able to- Analyze the requirements for a given organization and select appropriate network architecture, topologies, transmission mediums and technologies. Analyze data flow between TCP/IP model using Application, Transport and Network Layer Protocols. Illustrate applications of Computer Network. Compare and contrast different routing and switching algorithms
4	BCA241:Object Oriented Programming and C++	After successful completion of this course, learner will be able to– Compare and contrast procedural and object oriented programming Apply principles of OOP Design and develop applications using object oriented programming language C++
5	BCA242: Web Technology	Develop web based application using suitable client side and server side web technologies. Build Dynamic web site using server side PHP Programming and Database connectivity. Build applications using AJAX and XML
6	BCA-233: Software Engineering	Compare and contrast various Software Engineering models Decide on appropriate process model for a developing a software project Classify software applications and Identify unique features of various domains Prepare System Requirement Specification (SRS) for the given problem Design and analyze Data Flow diagrams
7	BCA234: Data Structures Laboratory	Apply appropriate data structures for the given problem. Design an efficient algorithm for the given problem and implement it using C Programming. Determine the time and space complexity of a given algorithm

8	BCA235:Database Management Systems-II Laboratory	□□Formulate SQL queries using advanced features □□Write stored procedures, cursors and triggers using PL/Postgre SQL. □□Design a database using database normalization technique
9	BCA 236: Computer Networks and Web Programming Laboratory	□□Use Networking commands, identify network devices and topology □□Design a website using HTML and CSS. □□Write java scripts □□Interpret and formulate XML queries
10	BCA244 : C++ Programming Laboratory	□ Compare and contrast procedural and object oriented programming □ Apply principles of OOP □ Design and develop applications using object oriented programming language C++
11	BCA245 : Web Technology Laboratory	□ Design and implement static and dynamic websites using appropriate client side and server side technologies. □ Build Dynamic web site using PHP Programming and Database connectivity. □ Build applications using AJAX and XML and web services
12	BCA246: Python Programming Laboratory	□ Write programs using Python programming constructs. □ Develop applications using Python programming

म.वि.प्र.समाजाचे

मराठा विद्या प्रसारक समाजाचे एस्.व्ही.के.टी. महाविद्यालय, देवळाली कॅम्प,नाशिक.

--- हिंदी विभाग ---

Course Outcomes

प्रथम वर्ष कला (FYBA)

प्रथम अयन

- छात्र हिंदी कहानी एवं काव्य से परिचित हुए |
- मौलिक लेखन की ओर रुझान बढ़ा |
- विज्ञापन लेखन कौशल विकसित हुआ|

द्वितीय अयन

- छात्र हिंदी कहानी एवं काव्य साहित्य से परिचित हुए |
- निबंध लेखन कौशल को विकसित हुआ |
- छात्र विज्ञापन लेखन कौशल में निपुण हुए |

प्रथम वर्ष वाणिज्य (FYBCOM)

प्रथम अयन

- छात्र हिंदी कहानी एवं काव्य साहित्य से परिचित हुए |
- हिंदी भाषा द्वारा संवाद कौशल विकसित हुआ |
- मौलिक लेखन की ओर रुझान बढा |
- विज्ञापन लेखन कौशल विकसित हुआ|

द्वितीय अयन

- छात्र हिंदी कहानी एवं काव्य साहित्य से परिचित हुए
- विज्ञापन लेखन के प्रकारों से परिचित हुए |
- अनुवाद का स्वरुप पता चला |
- पारिभाषिक शब्दावली से अवगत हुए |

द्वितीय वर्ष कला (SYBA)

तृतीय अयन

- छात्र हिंदी कहानी एवं काव्य साहित्य से परिचित हुए |
- हिंदी कारक-व्यवस्था से परिचित हुए |
- संक्षेपण लेखन का प्रत्यक्ष बोध हुआ|

चतुर्थ अयन

- व्यंग विधा साहित्य से अवगत हुए |
- साक्षात्कार कला में निपुण हुए|
- भाषा का मोबाइल तंत्र समझा |
- पल्लवन कला से परिचित हुए |

द्वितीय वर्ष विज्ञान (SYBSC)
तृतीय अयन

- छात्र हिंदी कहानी एवं काव्य से परिचित हुए |
- काव्य लेखन एवं कहानी लेखन कला का परिचय हुआ |
- छात्रों में साहित्यालोचन दृष्टि विकसित हुई|

द्वितीय वर्ष विज्ञान (SYBSC)
चतुर्थ अयन

- छात्र हिंदी कहानी एवं काव्य से परिचित हुए |
- काव्य लेखन एवं कहानी लेखन कला का परिचय हुआ |
- छात्रों में साहित्यालोचन दृष्टि विकसित हुई |

तृतीय वर्ष कला TYBA
(कथेत्तर विधाएँ) पंचम अयन

- छात्रों को संस्मरण साहित्य से अवगत किया|
- छात्रों को रेखा चित्र साहित्य से अवगत किया|
- छात्रों में मूल्यांकन दृष्टि का विकास हुआ|
- सभा इतिवृत्त लेखन कौशल वृद्धि का विकास हुआ
- वार्ता लेखन कौशल दृष्टि निर्माण हुई|

षष्टम अयन

- छात्रों को गजल साहित्य से अवगत किया|
- छात्रों को गजल साहित्यकार के व्यक्तित्व से परिचित किया|
- छात्रों में मूल्यांकन दृष्टि विकसित हुई|
- छात्रों को सरकारी पत्र लेखन से परिचित किया |

PRINCIPAL
Smt.Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College
Deolali-Camp, (Nasik)

MARATHA VIDYA PRASARAK SAMAJ'S
SHRIMATI VIMLABEN KHIMJI TEJOOKAYA
ARTS, SCIENCE AND COMMERCE COLLEGE (S.V.K.T. COLLEGE)
LAM ROAD, DEOLALI CAMP, NAKA NO. 6, NASHIK- 422 401. (M.S.) INDIA
NAAC Re-Accredited "A" Grade with CGPA-3.11

Department of Geography

Programme Outcome

Geography: Graduates of the program should be able to:

- Make aware about Planet Earth and thereby to enrich Knowledge.
- Provide an understanding of spatial and structural dimensions of Geography.
- Understand the recent trends in regional studies.
- Explain and introduce the latest concepts in Geography.
- To introduce the students to the fundamental's concepts of Environmental Geography.
- Acquaint the nature of man-environment relationship and human capability to adopt and modify the environment under its varied conditions from primitive lifestyle to modern living.
- The utility and application of Geography in different regions and Environment.
- Sensitize with the development issues, policies and programmes designed for regional development.
- To acquaint the students with environmental protection laws, acts, planning and management.
- To appraise the students with salient features of the Maharashtra State.
- Acquire the knowledge of Geographical Instruments.
- Train in elementary statistics as an essential part of Geography.
- Comprehend the Contemporary issues facing the global community.
- Acquaint the utility & application, management, Protection of hazards in different areas.
- Understand the interrelationship between Geography & Tourism.
- To acquaint the students with the principles of surveying, its importance, and its utility in the Geographical study.

Course Outcome

BA Geography: Students Will

Gg- 110 (A) Physical Geography (G-1) Geography DSE – 1 (Sem-1)

Gg- 110 (B) Human Geography (G-1) Geography DSE – 2 (Sem-2)

i) The geographical maturity of students in their current and future courses shall develop.

ii) The student develops theoretical, applied and computational skills.

I. Students get knowledge the basic concepts in Physical geography.

II. The students understands latest concept in Physical geography

III. The students acquaints with the utility and application of Physical geography in different regions and environment.

IV. The students aware about Earth system (Lithosphere, Atmosphere, Biosphere and Hydrosphere)

Gg-201 A Economic Geography -I G-2 (Sem-3)

Gg-201 B Economic Geography -I G-2 (Sem-4)

- The students get the the basic principles and concepts of economic geography.
- The students acquaint the applications to economic geography for development in different areas.
- The students able to integrate various factors of economic development and dynamic aspect of economic geography

Gg-310 (A) Geography of Tourism- I (Sem-5)

Gg: 310 (B) Geography of Tourism- II (Sem-6)

1) Students Understand The History Of Tourism

2) The Students Introduce With The Basic Concepts In Tourism Geography.

3) The Students Understand The Types Of Tourism

4) The Students Gain Knowledge Different Aspects Of Tourism Geography.

B. Sc. Geography

Programme Outcomes

1. To understand the scope and evolution of the diverse discipline of Geography.
2. Recognize, synthesize and evaluate diverse sources of knowledge, arguments and approaches pertinent to exploring human-environment problems. Explain societal relevance of geographical knowledge and apply it to real world human- environment issues.
3. Appreciate and reflect critically on the importance of holistic and interpretative human-environment perspectives.
4. An understanding and acknowledgment of the threats that endanger the earth's natural systems. This helps in further realization of the significance of anthropogenic causes of many of the disasters and threats that puts life on this planet on the edge.
5. Development of knowledge, skills and holistic understanding of the discipline among students. Encouragement of scientific mode of thinking and scientific method of enquiry in students. This goal is achieved through the regular field excursions conducted by the Department to various parts of India extensively and the writing of a report/thesis on it.

Course Outcome (BSc Geography)

Gg-111 Introduction to Physical Geography-I (Geomorphology)

Students will

- Know the basic & latest concepts in Geomorphology.
- Understand utility & application of Geomorphology in different regions and environment.
- Aware of the need of protection and conservation of different types of landforms.
- able to know earth size, shape, radius, parallels of latitudes & meridians of longitudes.
- Acquaint the knowledge about origin of continents & ocean basins.
- know origin and types of rocks.
- Understand crustal movements- slow and rapid.
- Introduce weathering and its types.
- know erosional and depositional work of rivers, sea waves, wind and glaciers.
- Understand soil creep, debris flow, Avalanches.

Gg- 112 Introduction to Physical Geography -II (Geography of Atmosphere and Hydrosphere)

- Know the basic principals in Climatology & Geomorphology
- Understand the composition and structure of atmosphere
- Aware about heat budget of the earth
- Acquaint with atmospheric pressure and wind system
- Know importance of oceanography in modern times
- Introduce different types of coast
- Understand properties of ocean water
- Know characteristics of sea waves
- Know ocean currents of Atlantic, Pacific and Indian ocean

Gg-113 Practicals in Physical Geography

- Introduce about maps, elements of maps and types of maps.
- Gain knowledge of map scales, conversion of map scales.
- Study of map projection, classification of map projection, choice of map projection.
- Get the knowledge of various methods of data representation.
- Study field excursion for orientation of Toposheet, observation & identification of geographical features
- Get experience of field excursion, village/ urban survey

Gg-121 Introduction to Human Geography

- Know the about human geography contemporary relevance of human geography.
- Gain knowledge of human evolution and races.
- Acquaint the knowledge about tribes in India and Maharashtra.
- To know about human life in Cold and Hot regions
- Understand human culture.
- Gain knowledge about economic activities of man.

Gg- 122 Population and Settlement Geography

- Introduce about population geography and sources of population data
- Understand the determinants and distribution of population.
- Aware about trend about population growth.
- Acquaint with demographic transition and demographic composition.

- Know settlement types and patterns.
- Understand the concept, trend and pattern of urbanization.

Gg-123 Practicals in Human Geography

- Introduce about population indices, Data analysis and presentation using computer.
- Understand the methods for calculation urban data.
- Study of crop combination and agricultural efficiency methods.
- Get the knowledge of various methods of data representation.
- Get experience of field excursion, village/ urban survey and report writing.

Gg-231 Environment Geography-I (Paper-I)

- To create environmental awareness amongst the students.
- To familiarize the students with fundamentals concepts of Environmental Geography.
- To acquaint the students to past, present, and future utility and potentials of resources at regional, national and global levels.
- To enable the students to understand dynamics of man–environment relationship in various region of the world.

Gg- 232 Geography of Maharashtra (Physical-I) (Paper-II)

- To appraise the students with salient features of the Maharashtra State.
- To familiarize the students with the climatic characteristics of the State.
- To familiarize the Soils and Natural Vegetation in Maharashtra
- To make the students aware of the geographic problems of Maharashtra in the view of sustainable development.

Gg-233 Surveying –I (Paper III)

- To acquaint the students with the principles of surveying, its importance, and its utility in the Geographical study.
- To familiarize the students with the basic aspects of linear, vertical and angular measurements of surveying.
- To understand the importance, basic principles and uses of GPS in surveying.
- To identify sources and types of errors occurs during surveys.

Gg-241 Environmental Geography- II (Paper-I)

- To introduce the methods and assessments of the impact on the environment amongst the students.
- To acquaint the students with environmental protection laws, acts, planning, and management.
- To appraise the students with various indigenous environmental conservation measures.
- To make aware the students about various programs and policies carried out in the regional and global scale.

Gg- 242 Geography of Maharashtra (Human)-II (Paper-II)

- To acquaint the students with the relationship between man and environment in Maharashtra State.
- To familiarize the students with the agricultural pattern, problems and prospects in the state.
- To study and understand the industrial sector, spatial distribution, development and problems faced within the state.
- To know the status of transport and communication in Maharashtra state.

Gg-243 Surveying – II (Paper-III)

- To acquaint the students with the principles of surveying, its importance and utility in the Geographical study.
- To familiarize the students with the basic aspects of linear, vertical, and angular measurements of surveying.
- To introduce the importance, basic principles, and uses of GPS in surveying.
- To identify sources and types of errors occurs during surveys.

Dr. P. C. Gangurde
H.O.D.
Department of Geography
Smt. Vimlaben Khimji Tejookaya,
Arts, Science & Commerce College,
Deolali-Camp, (Nasik)