Programme outcomes:

The college has clearly stated following learning outcomes stated in vision and mission statement and objectives of the college.

Vision: Reaching to the Unreached

Mission: To offer opportunities of the empowerment to the rural learners by imparting quality higher education within the capacities.

Objectives:

- To strive for imparting higher education to rural masses in general and girls in particular.
- To seek socio-cultural transformation of rural youths.
- To inculcate the values like national integration, patriotism, liberty, equality, fraternity, humanity and tolerance among youths.
- To nurture the quality of social and civil responsibilities among the students.
- To create youths capable to be employed.

The students and staff are made aware of these through the prospectus and meetings. Various curricular, co-curricular, cultural and extension activities are organized to these effects. Fresher's are aware about these objectives in the induction programme. The discipline wise programme outcomes are as following:

Programme outcomes: B A. (Bachelor of Arts)

Our college is affiliated to Swami Ramanand Teerth Marathwada University, Nanded. This college offers B A in English, Marathi, Hindi, History, Political Science, Public Administration and Economics. The university has not designed the programme outcomes in its curriculum. However the college has designed, based on the subjects offered, the following programme outcomes of the B A programme.

1. The study of language, literature and social sciences will develop liberal approach among the students.
2. The students will be able to know the history of mankind, its evolution, progress and making of our nation.

3. Students will get aware of the functioning of the society in its various forms through social institutions like religion, politics, bureaucracy, family, marriage and caste.
4. Students will be able to understand the principals and approaches to the study of arts and literature.
5. The students will be sensitive to the socio-political, economical issues around them.
6. The students will get sensitized to the social, political, economical and gender issues.
7. New socio-political leadership will be developed.
8. The B.A. graduate students can pursue B.Ed. course and opt teaching career in the schools.
9. Students can do Post Graduate Studies in their respective subjects studied in 'Under Graduate' level.
10. They are eligible to appear for any competitive exams conducted by Union Public Service Commission (UPSC), Maharashtra Public Service Commission (MPSC), Indian Railway Board, etc for entering into the government services.

Programme Specific Outcomes: B A (English)

1. English language is considered as the window of Knowledge.
2. Most useful for competitive exams at various levels.
3. Useful for electronic and social media
4. Students will get job opportunities in various fields.
5. Student will enable to communicate in English Language in domestic as well as at international platforms.
6. Students will attempt creative writing in different forms.
7. Students will be able to write book review.
8. Students will be able to frame messages, notices, formal letters, personal diary and reports.
9. Students will be able to express their feelings and emotions with correct grammatical structure.
10. Important Function of English literature is to teach a way of living, order of living and pattern of living.

Students will get accustomed with the following forms of literary genre:

A. **Poetry/Epic/ Songs**

Students will be able to study the very old form of literature i.e. Poetry. They will able to understand and to express feelings and emotions in lyrical form. They will get acquainted

with rhymes and lyrics. There is opportunity for students to try their hands at creative writings.

B. Drama:

Since drama is to be enacted on stage, students will get opportunities to perform it on the various occasions and improve their quality of expression. Students will be able to study the drama through the history and will get opportunity to read great dramatists and their popular works.

C. Fiction:

Students will get acquainted with the short and long narratives**.** Fiction has been the most popular form of literature that enhances the taste o reading. It helps students in widening the sensibilities of the students.

D. Literary Criticism:

Students will be able to develop critical approach to the various literary forms and understand its characters. They will be able to say that how a particular work of art is to be enjoyed. Students will be able to write and analyze literature. Students will understand how practical criticism is performed at various levels.

Course outcomes: Semester I & II

1. **Compulsory English: Paper I**

Name of the course: (Ability Enhancement Compulsory Course)**:**

English Communication B.A./B.Sc./B.Com./B.S.W. First Year (Semesters I and II)

Course Outcomes:

1) Through responding to and composing a wide range of texts, the learners will begin to use the English language in the best possible manner.
2) Through the close study of texts, students will develop knowledge, understanding and skills in order to communicate effectively in English.
3) Learners will value and appreciate the importance of the English language as a key to

learning.

4) Learners will gain the personal enrichment from study of literary pieces in English.

5) Learners will acquire ability to communicate through oral and written texts.

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2. B. A. First Year Optional English Syllabus w.e.f. 2019-20

Name of the course: Sem. I

Paper I : **Understanding Prose Fiction**

Intended Outcome

1) Learners will be able to appreciate the texts in English Prose Fiction genre.

2) Through responding to different texts of Prose Fiction, the learners will acquaint themselves with the wide range of expressions in the English language.

3) Learners will carry out the tasks of interpretation of novels and short stories by studying the critical analyses of the prescribed texts.

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3. Paper II- : Understanding Poetry in English

Intended Outcome:

1) Learners will be able to appreciate English Poetry with an understanding of diverse poetic forms and themes.

2) Through responding to different Poetic texts the learners will acquaint themselves with the various nuances of poetic expressions in the English language.

3) Learners will carry out the tasks of interpretation of poems by studying the critical analyses of the prescribed texts.

Sem. II

4. Paper III- : **Understanding Non-Fictional Prose in English**

Intended Outcome:

1) Learners will be able to appreciate English Non-fictional prose with an understanding of various prose writings as developed through ages.

2) Through responding to different Prose writings learners will be enriched in the use of Prose for diverse thematic expressions.

3) Learners will attain a certain degree of proficiency in the interpretation of English prose.

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5. **Paper IV- : Understanding Drama in English**

Intended Outcome:

1) Learners will be able to appreciate English Drama with an understanding of various dramatic texts.

2) Through responding to different plays, learners will be introduced to various types of dramatic experiences.

3) Learners will be able to critically analyze texts from different dramatic genres.

Course Outcomes:

6. **Compulsory English - Second Year**

(Ability Enhancement Compulsory Course)(AEC)(4)

Semester III

Course Outcomes:

1. Students will get acquainted with short stories, essays on a variety of important topics,
2. Students will understand and appreciate prose writings of well-known writers,
3. To acquaint them with ‘ prose’, its meaning and importance,
4. Students will be able to explain grammar items such as, Idioms, Phrases, and reported speech etc.
5. Students will be able to write grammatically accurate sentences, by identifying correct reported
   speech in writing English.

Semester IV

7. **Compulsory English - Second Year**

(Ability Enhancement Compulsory Course)(AEC)(4)

Course Outcomes:

1. Students will be able to understand and appreciate short lyrical poems.
2. Student will be able to comprehend the inherent rhythmic beauty of lyrical poetry,
3. They will get opportunity to read and understand famous world poets such as Wordsworth, Blake, Keats, Byran, Browning, Lanston Hughes, Tagore etc,
4. Students will comprehend the language skills of listening, speaking, reading and writing.

5. Students will get acquainted with the importance of non-verbal communication, i.e. body

language so as to make communicative situations more meaningful, positive and effective.

Optional English - Second Year

Semester III

Paper No. V

Title: Study of Poetry- Sonnets & Elegy

Course Outcomes:

1. Students will get acquainted with the literary genre of 'poetry,' particularly sonnet & Elegy,
2. Students will be able to know the meaning, types, features and functions of "sonnet Elegy."
3. Students will be able to read, understand, and appreciate sonnet, elegy.

Optional English - Second Year

Semester III

8. Paper No. VI

Title: Study of Prose- Essays

Course Outcomes:

1. Students will get acquainted with the literary genre of 'prose,' particularly Essays.

2. They will understand the meaning, types, features and functions of "Prose -Essays".

3. Students will get encouraged to read, understand, and appreciate Essays.

Optional English - Second Year

Semester IV

9. Paper No. VII

Title: Study of Poetry- Odes and Ballads

Course Outcomes:

1. Students will get acquainted with the literary genre of 'poetry,' particularly Odes and Ballads.
2. They will understand the meaning, types, features and functions of "Odes and Ballads"
3. Students will get encouraged to read, understand, and appreciate Odes and Ballads.

Optional English - Second Year

Semester IV

10. Paper No. VIII

Title: Study of Prose- Autobiography

Course Outcomes:

1 Students will get acquainted with the literary genre of 'prose,' particularly Autobiography.

2 They will understand the meaning, types, features and functions of "Autobiography."

3. Students will get encouraged to read, understand, and appreciate Autobiography.

Skill Enhancement Course (SEC) - Second Year

11. Skills for Employability-I

Semester III

Course Outcomes:

1. Students will get the enough confidence to meet the requirements of the 21st century learners.

2. Students will be equipped with rich Vocabulary comprising Spelling and Pronunciation in English.

3. Students will develop dialogues for Conversation Skills.

4. Students will develop for written communication.

5. Students will develop strategies for professional skills and Soft Skills.

Syllabus for Third Year – (Semester + CBCS Pattern Structure)

Optional English

12. DSE I - Semester V

Course Outcomes:

Title of the course: Literary Theory and Criticism (A) Introduction to Literary Criticism

Course/Paper code: DSE-ENG- I

Course Outcomes:

1) The learners would develop a critical ability to judge literary texts

2) Critical insight into the past theorists would be developed

GE I –Semester V

Title of the course: Modern English Structure (A) Introduction to English Speech Sounds

13. Course/Paper code: GE-ENG- I

Course Outcomes:

1) The learners would be able to understand the system of speech with English sounds

2) The ability to understand and reproduce standard patterns of speech is facilitated

DSE II Semester VI

14. DSE-ENG- II-Title of the course: Literary Theory and Criticism (B) Introduction to Literary Theory

Course/Paper code: DSE-ENG- II

Course Outcomes:

1) Students will get the knowledge about contemporary theories of criticism.

2) Critical ability to carry out practical criticism will get enhanced.

3) The learners would develop ability to analyze literary texts according to the rules of prosody.

4) Critical insight into the contemporary theories would be developed.

6 Student will get acquainted with the global critical schools

Semester VI

GE II –Title of the course: Modern English Structure (A) Introduction to English Grammar

15. Course/Paper code: GE-ENG- II

Course Outcomes:

1) Learners are enabled to understand the logics and practices in the field of English grammar

2) The foundational structure of English grammar is explained

3) Learners would be able to use the language with grammatical correctness

4) Student will get acquainted with the English Word Classes.

5) Student will get acquainted with the word structures and affixes.

6 Student will get acquainted with the basic clauses and phrases in English

7) They will understand the sentence structure and forms and meaning

8) Students will identify the common errors and ambiguities in English sentences.

B A. T. Y. Skill Enhancement Course

16. Title of the Course: Life Skills-I Sem V &

17. Title of the Course: Life Skills-II Sem VI

Paper Code: SEC-ENG III

Course Outcomes:

1. Learners will get developed with the personal and social skills.
2. Gender awareness will be created among students.
3. Skills for individual and group activities will be developed among students.

Programme outcomes: B Com (Bachelor of Commerce)

Our college is affiliated to Swami Ramanand Teerth marathwada University, Nanded. This college offers B Com under graduate level. The university has not designed the programme outcomes in its curriculum. However the college has designed, based on the subjects offered, the following programme outcomes of the B Com programme.

1. B.Com. graduates can pursue Post Graduate Studies like M.Com., MBA, MCA, ICWA, ISCI, etc.
2. B. Com students can choose Career Options like , Chartered Accountancy, Banking Services, Insurance Sectors, Marketing, Company Secretaryship, Stock Exchange Services, Tax Consultancy, Management & Planning, Entrepreneurship, Law etc.
3. They are eligible to appear for any competitive exams conducted by Union Public Service Commission (UPSC), Maharashtra Public Service Commission (MPSC), Indian Railway Board, etc for entering into the government services.
4. The B.Com. graduate students can pursue B.Ed. course and opt teaching career in the schools.
5. After completing three years for Bachelors in Commerce (B.Com) program, students would gain a thorough grounding in the fundamentals of Commerce and Finance.
6. The commerce and finance focused curriculum offers a number of specializations and practical exposures which would equip the student to face the modern-day challenges in commerce and business.

7. The all-inclusive outlook of the course offer a number of value based and job oriented courses ensures that students are trained into up-to-date.

B.Com I Year (Ist Semester)

Fundamental of Financial Accounting

Paper No. BC 1.1

Learning Objective:

Objective of this course is to provide the skill of

i) Recording

ii) Maintaining

iii) And presenting the accounting and financial fact

Course Outcome :

Student Can Understand the :

i) Accounting Knowledge

ii) Application of Accounting in Business

B.Com. I Year (Ist Semester)

Paper No. BC 1.2

Business Statistics

Course Objective:

The objective of this course is to provide fundamental knowledge of statistical techniques useful for business analysis.

Course Outcome:

Student can understand the basic concept of statistics and its application in business and data analysis.

B.Com. First Year Revised Syllabus

Semester Ist (CBCS Pattern)

Paper No. BC 1.3

Business Economics-I

Course Objective: The objective of this course is to acquaint the students with the business economic principles and theories as are applicable in business.

Course Outcome: Students will be acquainted with the business economic principles and theories as are applicable in business.

B.Com. I Year (I Semester)

Paper No. : BC 1.4

Fundamentals of Business Communication

Course Objectives

i) To Develop Communication Skills of Students

ii) To help in personality development

iii) To improve speaking, writing, and interview skills of students.

Course Outcome: - Adequate Knowledge about good communication in business

B.Com. I Year (I st Semester)

Paper No. : BC 1.5.1

Computer for Business

Course Objectives

i) To develop awareness about computer

ii) To know the recent advances in the Information technology field

iii) To develop knowledge about internet, email and social networking

Course Outcome: - Adequate Knowledge about Information technology

B.Com. I Year (I Semester)

Paper No. B.C. 1.5.2

Office Management

Objectives:

1) To familiarize students about concept and Importance of office management, Office accommodation and layout

2) To make student aware about office environment and record administration

3) To provide Information about office communication, office supervision and Personal management

4) To give students Idea about office report and law to minimize cost in office Management

Learning outcomes: -

1 Students can understand the practices of office administration

2 The students can learn to maintaining the official files and documentation.

B.Com. Second Year Syllabus

Semester III (CBCS Patterns)

Paper No. BC.3.1

Corporate Accounting

Objectives:

1. To make students capable of understanding the features and debentures.

2. To grow the understanding about Redemption of shares and debentures and its types.

3. To set an idea about how to publish the company's final accounts.

4. To impart the students in expertise in the preparation of corporate accounts.

5. To help students to gain the conceptual knowledge of the corporate accounting.

6. To learn the techniques of preparing the financial statements.

Course Outcomes:

1. The course is beneficial to understand the provision of company act 1956 regarding the preparation of accounts.

2. It is beneficial for students to move in to advance areas i.e. C.A, I.C.W.A, CS etc

3. It could help graduates to work as financial analyst, HRM officers.

4. It provides the knowledge of differentiating the profit Prior and post Incoorporation.

5. It provides the basic concept of knowledge of buyback, forfeatures of shares.

B.Com. Second Year Syllabus

Semester III (CBCS Patterns)

Paper No. BC.3.2

Cost Accounting

Objectives:

1. To learn how the cost accounting is different from financial accounting.

2. To understand how to use accounting methods and cost calculations.

3. To define the cost and their impact on value creation in the company.

4. To understand how to make differentiate Cost Management systems.

Course Outcomes:

On completion of this course students will be capable for

1. The selection of the appropriate cost accounting and their impact on the business policy.

2. The determination of cost as per element per unit of production.

3. The Identification and control of cost of production.

4. Becoming a superior Cost accountant and cost analyst.

B.Com. Second Year Syllabus

Semester III (CBCS Patterns)

Paper No. BC.3.3

Principles of Business Management

Objectives:

1. To make students capable of understanding the evolution of management.

2. To help the students to gain the knowledge of the functions and uses of management principles in organizations.

3. To study the systems and processes of effective Controlling in organization.

4. To understand the concept and relation of manager to manage the business organization in the dynamic and global environment.

5. It helps to learn the effective and barriers of communication in the organization.

Course Outcomes:

1. Successfully completion of this course, students will be able to understand the Managerial functions.

2. To understand the way of implementation of the planning process within the organization.

3. It would help the students to clarify the basic and fundamental concepts of the management systems.

4. To illustrate the ability to directly leading and communicating effectively.

5. It would be useful for analysing, evaluating and synthesizing the information of management.

B.Com. Second Year Syllabus

Semester III (CBCS Patterns)

Paper No. BC.3.4

Mercantile Law

Learning Objective:

1. To acquire knowledge and develop understanding of the necessary framework of mercantile law with reference to various provisions and acts.

2. To make acquainted to the students regarding the provisions of Indian contract act.

3. To make acquainted to the students regarding the provisions of various mercantile and business laws.

Course outcomes:

Students will be able to apply and follow the rules and regulations as per the various business and mercantile laws.

B.Com. Second Year Syllabus

Semester III (CBCS Patterns)

Paper No. BC.3.5

Fundamentals of Income Tax

Objectives:

1. To make students to become familiar with basic principles and fundamental provision of direct and indirect tax law.

2. To help to develop a board understanding of the tax law and accepted tax practice.

3. To give an understanding of the relevant provisions of direct tax code.

4. TO introduce practical aspect of tax planning as an important managerial decision-making process.

5. To explore the participants to real life situations involving taxation.

Course Outcomes:

1. After Completion of course students will be capable to describe the provisions in the corporate tax law which can be used for tax planning.

2. Students can well define the residential status of the assets.

3. Student of the course will be able to explain different type of income of their tax liabilities, expenses and their deduction ability.

4. Students who complete their course will be able to learn various direct and indirectr taxes and their implications

5. Students of the course will be able to state the use of various deduction to reduce the taxable income.

6. Student will be capable of choosing a career to become a Tax consultant.

B.Com. Second Year Syllabus

Skill Enhancement Course -I

Semester III (CBCS Patterns)

Paper No. SEC.1.1

Management Skills

Course Objectives:

1 Students develop and understanding of important concept of management skills

2 To Know law the skills apply into working effectively within organisation

3 To help students develop skills necessary to performance

4 To provide Opportunities to practice important management skills

Outcomes : After acquired the skills of management students be capable

1 Improve the technical skill and ability

2 students can develop his analytical ability & competent use of tool, work resolved the solve the problems

3 It help to coordinate and resolved the conflict within organisations

4 It can develop the team work

5 It help to develop integrity, self-awareness dedication, external conduct amongst the people

B.Com. Second Year Syllabus

Skill Enhancement Course -I

Semester III (CBCS Patterns)

Paper No. SEC.1.2

Banking Service Skills

Course Objectives:

1 To enlighten the students with Introduction of banking concept and dynamic services

2 To expose the student to Banking operations and management

3 To enable the students familising with banking law and practice

4 To assist to students in understanding corporate law affecting the operations of banks

5 To enable the students awaring with credit aspects CASA banking products

Course Outcomes

1 It is helpful to acquaint the knowledge of banking procedure

2 It is helpful to understand the detail knowledge of banking and financial situations

3 It is helpful to enable Banking, Economics, and management experience

B.Com. Second Year Syllabus

Skill Enhancement Course -I

Semester III (CBCS Pattern)

Paper No. SEC.1.3

Basic Accounting skills

Learning Objective:

1. To provide the candidates with sound Knowledge of the basic accounting their applications in practices.

2. To develop the candidates with skills of the basic accounting their applications in practices.

Course Outcomes:

The students will be able to handle basic accounting practices skillfully.

B. Com. Third Year

Semester Vth (CBCS Pattern)

BC.5.1 Advanced Accounting – I

Learning Objectives: -The objective of the course is to equip the students with the ability to analysis interpret and use accounting information in managerial decision making and auditing.

Utility: Student can acquire knowledge of advance level of accounting for professional

B. Com. Semester Vth (CBCS Pattern)

BC.5.2 Management Accounting – I

Learning Objectives: - The Objectives of this paper is to equip the students with the ability to analysis, interpret and use accounting information in Management accounting information in managerial decision making. The student is expected to have a good working knowledge

of the subject. This paper provides the students an understanding of the application of accounting techniques for management.

Utility: Students can take managerial decisions regarding finance of the business.

B. Com. Semester Vth (CBCS Pattern)

BC.5.3Auditing-I

Learning Objective:

The Objective of the course is to provide the candidates with sound Knowledge of the important provisions of the Audit and company law and their Applications in practices.

Utility: Regarding minute study to find out the fraud and errors in accounting

B. Com. Semester Vth (CBCS Pattern)

BC.5.4A- Income Tax Law & Practices

Learning Objective: The Objective of the course is to provide the candidates with sound knowledge of the important provisions of the Income Tax law and their applications in solving problems on computation of Total Income and Tax Liability.

Utility: To get oneself acquaint with the direct taxes and individual income.

Prerequisite: one should possess the knowledge of basic terminologies in respect of Income Tax act and Computer ideologies.

B.Com. Semester Vth (CBCS Pattern)

BC.5.4B- Human Resource Management

Programme outcomes: B.Sc (Bachelor of Science)

Course Objectives: -

Learning Objectives of the course is to gain the holistic knowledge of human resource engaged in the business world. To understand the nature and applicability of the major HR Practice

Utility: Regarding the major living aspect of business i.e. human resources, helps to know the recruitment and other basic needs.

Prerequisite: basic management terminologies and non-financial business activities.

B .Sc. (Bachelor of Science)

Our college is affiliated to Swami Ramanand Teerth marathwada University, Nanded. We offer Chemistry, Botany and Zoology under this discipline. The college has applied to state government to rejuvenate the subjects like physics, mathematics and microbiology. The university has not designed the programme outcomes in its curriculum. However the college

has designed, based on the subjects offered, the following programme outcomes of the B SC programme.

1. The programme will develop the scientific temperate among the students.
2. It will develop interest for science among the students.
3. The students will be able to understand the basic concepts of the subject offered.
4. The students will be sensitive to the environmental issues.
5. New avenues of research and employment will be open to the students.
6. Students can do Post Graduate Studies in their respective subjects studied in 'Under Graduate' level.
7. The B.Sc. graduate students can pursue B.Ed. course and opt teaching career in the schools.

Programme Specific Outcomes

1. **Chemistry:-**

Aims and Objectives.

1 B.Sc. First year, Chemistry syllabus has been framed as per UGC-CBCS pattern.

2 The students are expected to understand the fundamentals, principles, Mathematical concepts and recent developments in the subject area.

3 To enable the students to understand basic concepts, nomenclature, functional groups, hydrocarbons, aromaticity, and fundamental term in organic chemistry.

4 The students are able to know the elements present in nature & its properties.

5 The practical course is in relevance to the theory courses to improve the Understanding of concepts in chemistry.

6 It would help in development of practical skills of the students.

7 It is expected to inspire the students towards competitive exams in chemistry

Course Outcomes

B. Sc. First Year (Semester-I)

Course No. :- CCC I (Section A)

Name of the

Course :- Theory Paper-I Organic + Inorganic Chemistry (P-I)

Course Outcomes:

After completion of syllabus students will be able to understand following outcomes.

1. Student should learn basic concept of organic chemistry, Nomenclature.
2. Student get well acquainted with functional group in organic chemistry.
3. To understand the basic concepts and differences aliphatic hydrocarbons.
4. To know about term cycloalkane, cycloalkene and diene.
5. Learn and practice about organic compounds with their names.
6. Students learn some exceptional electronic configuration, trends and Periodicity in the following properties like atomic size, ionization energy, electron affinity & electronegativity.
7. To understand the inert gases forms compounds, different fluoride compounds of Xenon

B. Sc. First Year (Semester-I)

Course No. :- CCC I (Section A)
Name of the
Course :- Theory Paper-II Physical + Inorganic Chemistry (P-II)

Course Outcomes: After completion of syllabus students will be able to understand following outcomes.

1. Learning and understanding rules of logarithm, Rules of drawing graph, Derivatives, Integration, different mathematical concept and SI units, and their use in solving numerical.
2. Learning surface phenomena at heterogeneous surfaces.
3. Student will learn the basic knowledge of gas phase, Kinetic molecular theory, critical phenomenon , liquefaction and molecular velocities.
4. To impart knowledge about solid phase, crystallography and some crystal structure.

5. General characteristics of s-block elements, oxides, hydroxide, carbonate & its complexes
6. Study the oxidation and reduction by different methods

B.Sc. Chemistry First Year (Semester-II)

Course No. :- CCC II (Section A)

Name of the

Course :- Theory Paper-III Organic + Inorganic Chemistry (P-III)

Outcomes: After completion of syllabus students will be able to understand following outcomes.

1. Student should learn the concept of aromatic hydrocarbons, Aromaticity and Anti aromaticity.

2. Student should understand the phenols and synthesis of phenols
3. Student knows about the haloalkene and haloarenes compounds.
4. To know the concepts of carboxylic acids and their derivatives.
5. To know about the types of alcohols and reaction of epoxide.
6. To study the different properties of P- block elements.
7. To know the acids & Bases by different concepts

B. Sc. First Year (Semester-II)

Course No. :- CCC III (Section A)

Name of the

Course :- Theory Paper-IV Physical + Inorganic Chemistry (P-IV)

Outcomes: After completion of syllabus students will be able to understand following outcomes.

1. To impart knowledge of atomic structure, different theories of atomic structure, rules of electronic configuration and quantum numbers.
2. Learning of properties of liquid phase as surface tension, Viscosity and parachor.
3. Student will learn the basic knowledge of colloidal state, types, preparation, properties and applications of colloidal state.
4. Learning and understanding of catalysis, types of catalysis and characteristics of catalyzed

reactions.

5. To understanding the chemical bond and its different types of bonds.
6. Learning the Concept of hybridization and study of VSEPR & Molecular Orbital theory

B. Sc. Second Year:

Course No. :- CCC III (Section A)

Name of the

Course :- Theory Paper-VI Organic + Inorganic Chemistry (P-VI)

Objectives:

- Students are acquainted with various name reactions and their mechanism on aldehydes and ketones.
- Students are familiar with the synthesis and chemical transformations of aromatic carboxylic and sulphonic acids.
- Student develops the primary knowledge about organometallic compounds and their applications.
- Students understand the importance of ethyl acetoacetate an active methylene compound, its synthesis and applications.
- Students are recognizable with oils, fats, soaps and detergents used in day today life.
- Students known about the qualitative analysis of metals and their related salts.
- Students recognized the importance of solvents in chemical reactions.

Outcomes:

- Learn the mechanism of name reactions.
- Know the Synthesis, and Reactions of Aromatic Carboxylic and Sulphonic acids.
- Know the Synthesis, and Reactions of Organometallic compounds.
- Learn the synthesis, mechanism, applications of active methylene compounds.
- Gathering basic knowledge of Oils, Fats, Soaps and Detergents.
- Understand the basic principle and application of Qualitative Analysis.
- Know the Classification, Properties of Non- aqueous solvents.

Course No. :- CCC III (Section A)

Name of the

Course :- Theory Paper-VII Physical + Inorganic Chemistry (P-VII)

Objectives:

 Aim of this course to offer a broad view on the fundamental Atomic structure and wave.

Mechanics to understand the principles, hypothesis, derivations, expressions and laws.

 The course introduces the students to the concept of entropy and laws of thermodynamics.

 This course gives the knowledge about atomic nuclear structure & its energy.

 The course introduced the separation method of gravimetric analysis.

Outcomes:

After completion of these courses students should be able to,

 Write an expression of Davisson-Germer experiment.

 Derive Schrondinger wave equation.

 Understand De-Broglie's hypothesis and uncertainty principle.

 Solve the numerical problems based on De-Broglie.

 Understand concept of entropy.

 Understand statements of first, second and third law of thermodynamics.

 Know the meaning of phase, component and degree of freedom.

 Know the nuclear structure & different energy of nuclear.

 Understand the different steps & procedure in the gravimetric separation method.

Course No. :- CCC III (Section A)

Name of the

Course :- Theory Paper-VIII Organic + Inorganic Chemistry (P-VIII)

Objectives:

 To gain knowledge of the stereochemistry with different aspects like Structural, Conformational, Optical and Geometrical Isomerism.

 To study the basic concepts about the carbohydrates especially with glucose.

 To known the importance of Nitrogen Containing Organic Compounds.

 To understand the synthesis and application of Reagents in Organic Synthesis.

 To study the Chemistry of d-Block Elements.

 To study the Chemistry of f-Block Elements.

Outcomes:

 Learn the stereoisomerism of Chiral compounds.

 Know the Classification, and Reactions of carbohydrates.

 Know the Synthesis, and Reactions of Nitrogen Compounds.

 Gathering **a**pplications of Reagents in Organic Synthesis.
 Understand the Characteristics of d-Block Elements.
 Know the Characteristics of d-Block Elements.

Course No. :- CCC III (Section A)
Name of the
Course :- Theory Paper-IX Physical + Inorganic Chemistry (P-IX)

OBJECTIVES:
 The course also provides adequate knowledge on the basis of concept of photochemistry.
 The course also creates awareness among the students about rate of reactions and what factors affect the rate of chemical reaction.
 The courses provide adequate knowledge about electrolytes, conductance, statements, laws,
conductometric titrations and its advantages.
 The course also creates awareness among the students about compounds of Non Transition elements.
 The course also creates awareness among the students about the compounds of inter halogen.

Outcomes:
After completion of these courses students should be able to,
 Know the rate constant and factors affecting rate of reactions.
 Write an expression for rate constant (K) for first order, second order reaction.
 Know the terms cell constant, specific conductivity, equivalent conductivity and molar conductivity.
 Know the applications of Kohlrausch's law.
 Compare between thermal and photochemical reactions.
 Discuss different types of photochemical process.
 Know the preparation, properties, structure & application of different compounds.
 Discuss different inter halogen compounds by preparation, properties, structure and uses.

B. Sc. Third Year: Semester-V

Course No. :- (DSEC-V, Section A)
Name of the

Course :- Theory Paper-XII Organic + Inorganic Chemistry (P-XII)

Objective(s)

To acquire basic knowledge about Heterocyclic Compounds, Synthetic Drugs and Dyes, Alkaloids, Vitamins, Pesticides, Co-ordination Chemistry and the chemistry of elements in Medicine.

Course Outcome(s)

1. Learn the mechanism of electrophilic Substitution reaction of Heterocyclic Compounds.
2. Know the characteristics, Classification and synthesis of Drugs and Dyes.
3. Explaining theories of Colour and chemical constitution of Dyes.
4. Gathering basic knowledge of Alkaloids, Vitamins and Pesticides
5. Understand the basic principle and application of coordination complexes
6. Know the application of elements in Medicine

B. Sc. Third Year: Semester-V

Course No. :- (DSEC-V, Section B)

Name of the

Course :- Theory Paper-XIII Physical + Inorganic Chemistry (P-XIII)

Objective(s)

To enable the students to acquire basic knowledge, in Spectroscopy, Chemical Kinetics, Distribution law, Organometallic Compunds and Metal Carbonyls.

Course Outcome(s)

1. Understand the concepts of molecular Spectroscopy and its applications
2. Analyze Rotational, Vibrational and Raman, Spectra
3. Interpret the theoretical and experimental methods of chemical kinetics
4. Know the theory and application of Distribution law
5. Explain the Nomenclature, classification and application of Organometallic Compounds

6. Illustrate the classification and application of Metal Carbonyls

Course No. :- (SEC III, DSECP-III) DSEC Vth & VIth (Section-A)

Name of the

Course :- Skill Enhancement Course- Computer Application in Chemistry

or

Applied analytical chemistry

Semester-VI

B. Sc. Third Year:

Course No. :- (DSEC-VI, Section A) (A1)

Name of the

Course :- Theory Paper-XIV Organic + Inorganic Chemistry (P-XIV)

Objective(s)

To familiarize the students with the concept and principle of Spectroscopy, Amino

Acids, Peptides, Molecular Rearrangements, Co-ordination theory and Electronic

Spectra of transition Metal Complexes

Course Outcome(s)

1. To learn the basic principle and terms used in UV, IR & NMR Spectroscopy
2. Acquire the fundamental knowledge of classification and Synthesis of Amino Acid and Peptides
3. Describe the types of Rearrangement
4. Postulates and limitations of VBT and CFT
5. Calculation of CFSE for Tetrahedral and Octahedral Complexes
6. Explain the types of electronic transition and selection rule

7. Apply spectroscopic techniques in analyzing the structure of simple organic Molecules

B. Sc. Third Year: Semester-VI

Course No. :- (DSEC-VI, Section B)

Name of the

Course :- Theory Paper-XV Physical + Inorganic Chemistry (P-XV)

Objective(s)

To familiarize the students with the concept and principle Electrochemistry, Thermodynamics, Magnetochemistry, Bioinorganic Chemistry and Metal Clusters

Course Outcome(s)

1. Basic concepts of electrochemistry and its applications
2. Understanding the Nernst heat theorem and the Thermodynamics open system
3. Know the Vant-Hoff's Reaction Osochore and numerical on it
4. Explain the types of magnetic substances and effect of temperature on it
5. Biological role of alkali and alkaline earth metal ions
6. Describe the structures and functions of Metal Cluster

Course No. :- (SEC IV, DSECP-IV) DSEC Vth & VIth (Section-B)

Name of the

Course :- Skill Enhancement Course- Spectroscopic Techniques and Cosmetic Preparation

or

Basic analytical chemistry

1. Be able to determine the structure by using Spectra

2. To train the students for the preparation of various cosmetics

B. Sc. Botany

Introduction:

The University Grants Commission (UGC) has initiated several measures to bring equity, efficiency and excellence in the Higher Education System of country. The important measures taken to enhance academic standards and quality in higher education include innovation and improvements in the curriculum, teaching-learning process, examination and evaluation systems, besides governance and other matters.

Swami Ramanand Teerth Marathwada University has several initiatives towards academic excellence, quality improvement and administrative reforms. In view of this priority and in keeping with Vision and Mission, process was already initiated towards introduction of semester system, grading system and credit system. University had implemented Choice Based Credit System (**CBCS**) pattern at UG level from the academic year 2016-2017 progressively.

Revision and updating of the curriculum is the continuous process to provide an updated education to the students at large. In view of this priority and in-keeping with Vision and Mission, process of revision and updating the curriculum is initiated and implemented at UG level from the academic year 2019-2020 progressively. Presently there is wide diversity in the curriculum of different Indian Universities which inhibited mobility of students in other universities or states. To ensure uniform curriculum at UG level , curriculum of different Indian Universities, syllabus of NET, SET, MPSC, UPSC, Forest Services and the UGC model curriculum are referred to serve as a base in updating the same.

The CBCS provides choice for students to select from the prescribed courses .The choice based credit system provides a 'cafeteria' type approach in which the students can take courses of their choice, learn at their own pace, undergo additional courses and acquire more than the required credits, and adopt an interdisciplinary approach to learning. Our university has already introduced the choice based credit system. The semester system accelerates the teaching-learning process and enables vertical and horizontal mobility in learning. Keeping in mind BoS in Botany prepared the curriculum to ensure up-to-date level of understanding of plant sciences. Studying plant sciences prepares the students for a career working either in an educational institution or an industry in which they can be directly involved in the research and development and Knowledge of modern and applied plant science and excellent career prospects.

The study of Botany aims to expand and increase current knowledge about plants in order to solve problems in many fields including agriculture, ecology, medicine, biotechnology and horticulture are some of the objectives kept in mind during executing the syllabus. How plants function at the cellular, tissue, organ, and organismal levels? How evolution of plants and how they contribute to biodiversity. How interactions with each other impacts their physical environment are the core objectives. The addition of Skill enhancement courses aims to develop skills in plant sciences and practical experience in the students.

At the end of the curriculum, the student should have increased: an aptitude towards science and nature and also undertakes the fundamental and applied research in plant science in the benefit of the human and nature.

At last comments, suggestions are welcome from all the teachers, stakeholders and students for the upbringing the curriculum.

Salient Features :

The syllabus of B Sc Botany has been framed to meet the requirement of Choice Based Credit System. The courses offered here in will train and orient the students in the specific fields of Botany.

The Section A of DSEB deals with Cell Biology, Genetics & Molecular Biology, Plant Breeding & Biotechnology. The Section B of DSEB with choice provides an option to learn courses like Plant Pathology, Analytical Techniques in Plant Sciences, Herbal Drug Technology, ,Plant Systematics, Research Methodology and Bioinformatics . This would help students to lay a strong foundation in the field of Botany.

Overall after completion of this course, students will also acquire fundamental knowledge in Plant Science and also understand that Botany is an integral part of the human life and developments.

Skill Enhancement Courses offered during third year of this program are being designed with the aim of imparting specific skills to the students which will lead to the self employability through development of their own enterprises.

Utility of Program

This program will train and orient the students in the field of diversity of different life forms of plants and microbes, Plant Ecology, Taxonomy of Angiosperms, Plant Anatomy, Plant

Embryology , Plant Physiology, Plant Metabolism and Biochemistry, Cell Biology, Genetics & Molecular Biology, Plant Pathology, Analytical Techniques in Plant Sciences, Herbal Drug Technology, Plant Breeding & Biotechnology ,Plant Systematics, Research Methodology and Bioinformatics in relation to Environment and Agriculture as well as Biotechnological, Pharmaceutical and Herbal Industries. This will help the students for their career development.

Skill Enhancement Courses being offered during this program will provide job opportunities and additional specific skills to the students for self employability through the development of their own enterprises.

Learning Objectives :

The Objective of this program are :

1. To provide an updated education to the students at large in order to know the importance and scope of the discipline and to provide mobility to students from one university or state to other.
2. To update curriculum by introducing recent advances in the subject and enable the students to face NET, SET, UPSC and other competitive examinations successfully.
3. To impart knowledge of plant science as the basic objective of Education.
4. To develop a scientific attitude to make students open minded, critical and curious.
5. To develop an ability to work on their own and to make them fit for the society.
6. To expose themselves to the diversity amongst life forms.
7. To develop skill in practical work, experiments, equipments and laboratory use along with collection and interpretation of plant materials and data.
8. To make aware of natural resources and environment and the importance of conserving the same.
9. To develop ability for the application of the acquired knowledge in the fields of life so as to make our country self reliant and self sufficient.

B.Sc. F.Y.

Semester – I

CCB-I (A)

Theory Paper –I

Viruses ,Bacteria, Algae, Fungi, Lichens and Mycorrhiza

Learning Objectives

1. To study and impart knowledge about the occurrence, distribution, structure and life history of lower plants such as algae, fungi, lichens
2. To instill in students an appreciation for the diversity of plant forms and structural organization that exists within plant bodies that allow plants to develop and live as integrated organisms in diverse environments

Course outcomes:

1. Understand the morphology, structure and importance of the various organisms
2. Differentiate between various groups of Algae, Fungi, Bacteria, Viruses, and Lichens & Mycorrhiza
3. Learn the life cycles of individuals belonging to Algae, Fungi, Bacteria, Viruses, Lichens & Mycorrhiza

B.Sc. F.Y.

Semester – I

CCB-I (B)

Theory Paper –II

Plant Ecology ,Phytogeography and Environmental Biology

Learning Objectives:

1. Acquainted with basic concepts of Ecology , Ecosystem Ecological factors, community ecology and phytogeography
2. To provide students with skills necessary for Ecological studies

Course outcomes:

1. Able to understand the ecological principles , interactions taking place in the Ecosystems and the flow of energy
2. Learn about the concept of phytogeography and its relations with other disciplines

Semester – II

CCB-II (A)

Theory Paper –III

Bryophytes, Pteridophytes ,Gymnosperms & Paleobotany

Learning Objectives:

1. To study the occurrence, distribution, structure and life history of bryophytes, pteridophytes and gymnosperms
2. To provide students with skills in paleobotany studies

Course outcomes:

1. Learn the life cycles of individuals belonging to Bryophytes, Pteridophytes and Gymnosperms
2. Learn about process of fossil formation and fossils plants

B.Sc. F.Y.

Semester – II

CCB-II (B)

Theory Paper –IV

Taxonomy of Angiosperms

Learning Objectives:

1. To study the types of classifications- artificial, Natural and phylogenetic
2. To study the principles and rules of ICN and taxonomical terminology
3. To study the various plant families and their economic importance

Course Outcomes:

1. Proficiency with the basic terminology of plant morphology
2. Able to identify the major families of plants and their economic importance
3. Understand the methods of collecting and preserving plants

B.Sc. S.Y. Botany

Salient Features:

The syllabus of B.Sc. S.Y. Botany has been framed to meet the requirement of Choice Based Credit System. The courses offered here Plant anatomy, Embryology, Plant physiology and Plant metabolism and Biochemistry will train and orient the students in the specific fields of Botany. This would help students to lay a strong foundation in the field of Botany.

The courses which deal with the environment, sustainability and ethics are Viruses, Bacteria Algae , Fungi , Lichens and Mycorrhiza, Plant Ecology , Phytogeography and Environmental Biology, Bryophytes, Pteridophytes Gymnosperms and Palaeobotany and Taxonomy of Angiosperms. These courses create awareness about conservation of biodiversity and its relevance with the socio-economical and environmental aspects. It also aims to make the students aware of bioethics, legislations and acts prevalent to control the degradation of our environment.

Overall after completion of this course, students will also acquire fundamental knowledge in Plant Science and also understand that Botany is an integral part of the human life and developments.

Skill Enhancement Courses offered during third year of this program are being designed with the aim of imparting specific skills to the students which will lead to the self-employability through development of their own enterprises.

Program Educational Objectives:

The Objectives of this program are:

PEO1: To provide an updated education to the students at large in order to know the importance and scope of the discipline and to provide mobility to students from one university or state to other.

PEO2: To update curriculum by introducing recent advances in the subject and enable the students to face NET, SET, UPSC and other competitive examinations successfully.

PEO3: To impart knowledge of plant science as the basic objective of Education.

PEO4: To develop a scientific attitude to make students open minded, critical and curious.

PEO5: To develop an ability to work on their own and to make them fit for the society.

PEO6: To expose themselves to the diversity amongst life forms.

PEO7: To develop skill in practical work, experiments, equipments and laboratory use along with collection and interpretation of plant materials and data.

PEO8: To make aware of natural resources and environment and the importance of conserving the same.

PEO9: To develop ability for the application of the acquired knowledge in the fields of life so as to make our country self-reliant and self-sufficient.

PEO10: To appreciate and apply ethical principles to plant science research and studies.

Program Outcomes:

The Outcomes of this program are:

PO1: This program will train and orient the students in the field of diversity of different life forms, Plant Anatomy, Plant Embryology, Plant Physiology, Plant Metabolism and Biochemistry.

PO2: This program will help the students for their career development.

PO3: This program will provide updated curriculum with recent advances in the subject and enable the students to face NET, SET, UPSC and other competitive examinations successfully.

PO4: This program shall train and orient the students for laboratory skills and serve as human resource for the educational institutes, industries and other organizations.

PO5: The programme also has a strong interdisciplinary component. Emphasis is given on the experimental learning through hands-on laboratory exercises, field trips and assignments.

PO6: Students will be able to understand and explain different specializations of Botany such as anatomy, Embryology, developmental biology, physiology, biochemistry etc. Students will be able to demonstrate the experimental techniques and methods in plant sciences and have innovative research ideas.

PO7: The programme will enlighten the current thrust areas of the subject and provide substantial exposure and skills in plant biology.

PO8: Skill Enhancement Courses being offered during this program will provide job opportunities and additional specific skills to the students for self-employability through the development of their own enterprises.

B.Sc. S.Y.

Semester –III

CCB-III (A)
Theory Paper –VI : Plant Anatomy

(Compulsory)

Learning Objectives:

1. To know about the internal structure of the most evolved group of plants, the Angiosperm.
2. To study cells, tissues, meristem, epidermal and vascular tissue system in plants.
3. To acquire knowledge of tissue systems, histology and growth pattern in plants.

Course Outcomes:

1. The students will be able to understand the meristem (RAM & SAM) different simple and complex tissues
and secondary growth in root and stem.
2. Students will acquire knowledge of anatomy of root, stem and leaf in dicot and monocot plants.

B.Sc. S.Y.

Semester –III

CCB-III (B)
Theory Paper –VII : Plant Physiology & Biochemistry

(Compulsory)

Learning Objectives:

1. To make students realize how plants function, namely the importance of water, minerals, hormones, and light in plant growth and development; understand transport mechanisms and translocation in the phloem, applications of plant physiology.
2. To acquaint the students with the types and their functions of different biomolecules and secondary metabolites
3. To know the role of different plant growth regulators in plant physiology.

Course Outcomes:

1. Students will gain the knowledge of water and nutrient uptake, movement in plants, role of mineral elements, translocation of sugars, Role of various plant growth regulators, phytochrome in plants.

2. Students shall learn different types of biomolecules and secondary metabolites

3. Students will learn the flowering physiology, vernalization and seed dormancy in plants.

B.Sc. S.Y.

Semester –IV

CCB-IV (A)

Theory Paper –VIII : Plant Embryology

(Compulsory)

Learning Objective:

1.To study the flowering and fruiting, reproduction process, role of pollinators, ovule fertilization, Endosperm and seed development in angiosperms.

Learning Outcomes:

1. This course will be able to demonstrate foundational knowledge in embryology of plants.
2. Students will be able to understand the development of pollen, Ovule, and fertilization and palynological information.

B.Sc. S.Y.

Semester –IV

CCB-IV (B)

Theory Paper –VIII : Plant Metabolism & Biotechnology

(Compulsory)

Learning Objectives:

1. To study of different pathways in Photosynthesis , respiration , nitrogen metabolism
2. To gain the knowledge of basic aspects and applications of plant tissue culture
3. To study the different aspects of genetic engineering and bioinformatics

Learning Outcomes:

1. Students will be able to understand the various metabolic processes such as photosynthesis, respiration, Nitrogen metabolism etc. which are important for life.
2. Students shall be become familiar with the gene cloning and its transfer in plants

3. Students shall learn different databases and their applications

B.Sc. T.Y. Botany

SALIENT FEATURES:

The syllabus of B.Sc. Third year Botany has been framed to meet the requirement of Choice based Credit System. The courses offered herein will train and orient the students in the field of Botany.

The DSCB-I deals with cell and molecular biology and DSCB-II deals with the genetics and plant breeding. The DSCBP-I deals with practicals on cell biology, molecular biology, genetics and plant breeding. This would help students to lay a strong foundation in the field of cell biology, molecular biology, genetics and plant breeding. The DECB-I&II deals with the study of different fields such as plant pathology, systematic botany and herbal technology. The DECBP-I deals with practicals based on plant pathology, systematic botany and herbal technology. This would help students to lay a strong foundation in the field of plant pathology, systematic botany and herbal technology. Overall after completion of this course, students will acquire detail fundamental knowledge in plant pathology, systematic botany and herbal technology. Discipline Specific Courses and Discipline Specific Elective Courses offered during this program are designed with the aim of imparting specific practical knowledge to the students which will lead to self employability through development of their own enterprises.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

PEO1: To impart the knowledge to the students in the field of Cell Biology, Molecular Biology, Plant Breeding, Plant Pathology, Systematic Botany, Herbal Technology and Other fields of Botany.

PEO2: To update curriculum by introducing recent advances in the subject and enable the students to face NET, SET, UPSC and other competitive examinations successfully.

PEO3: To develop laboratory skills in the students that will be helpful for identification of species, diseases and their management.

PEO4: To train and orient the students so as to develop human resource for the educational institutes, industries and other organizations.

PEO5: To develop specific skills amongst students for self-employability through the development of their own enterprises.

PEO6: To develop ability for the application of the acquired knowledge in the fields of life so as to make our country self-reliant and self-sufficient.

PROGRAM OUTCOMES (POs):

PO1: This program will train and orient the students in the field of Cell Biology, Molecular Biology, Plant Breeding, Plant Pathology, Systematic Botany, Herbal Technology and Other fields of Botany.

PO2: This will provide updated curriculum with recent advances in the subject and enable the students to face NET, SET, UPSC and other competitive examinations successfully.

PO3: Students shall be able to identify different plant species, plant diseases and shall be able to do their management.

PO4: This program shall train and orient the students so as to develop human resource for the educational institutes, industries and other organizations.

PO5: This will also develop specific skills amongst students for self employability through the development of their own enterprises.

PO6: This shall develop ability in the students for the application of the acquired knowledge in the fields of life so as to make our country self-reliant and self-sufficient.

B.Sc. T.Y. Botany

Semester – V

DSEB-I

Theory Paper –XII : Cell & Molecular Biology

(Compulsory)

Learning Objectives:

1. To know about the ultra structure of a cell, cell wall, cell membrane, cell organelles and chromosomes, cell cycle and cell division.
2. To study in detail the structure of DNA and RNA, protein synthesis, gene structure, gene mutation and related diseases.
3. To acquire knowledge of cell and molecular biology

Learning Outcomes:

1. The students will be able to understand ultra structure of a cell, cell wall, cell membrane, cell organelles and chromosomes, cell cycle and cell division.

2. The students will be able to understand in detail the structure of DNA and RNA, protein synthesis, gene structure, gene mutation and related diseases.

3. Students will acquire knowledge of cell and molecular biology

B.Sc. T.Y. Botany

Semester – V

DSEB-I

Theory Paper –XIII : Plant Pathology

(Compulsory)

Learning Objectives:

1. To know about the fundamentals of plant pathology.
2. To study in detail the process of plant disease development.
3. To acquire knowledge of different plant diseases in different plants.

Learning Outcomes:

1. The students will be able to understand fundamentals of plant pathology.
2. The students will be able to understand in detail the process of plant disease development.
3. Students will acquire knowledge of different plant diseases in different plants.

B.Sc. T.Y. Botany

Semester – VI

DSEB-I

Theory Paper –XIII : Genetics & Plant Breeding

(Compulsory)

Learning Objectives:

1. To study Mendelian genetics, gene interaction.
2. To study sex determination, linkage, sex linked inheritance and genetic variations.
3. To study various crop improvement methods in plant breeding.

Learning Outcomes: Students shall

1. Understand Mendelian genetics, gene interaction.
2. Learn the sex determination, linkage, sex linked inheritance and genetic variations.
3. Understand various crop improvement methods in plant breeding.

B.Sc. T.Y. Botany

Semester – VI

DSEB-I

Theory Paper –XV : Plant Pathology-II

(Compulsory)

Learning Objectives:

1. To know about the fundamentals of aerobiology and seed pathology.
2. To study in detail the process of plant Defense mechanism and management.
3. To acquire knowledge of different plant diseases in different plants.

Learning Outcomes:

1. The students will be able to understand fundamentals of aerobiology and seed pathology.
2. The students will be able to understand in detail the process of plant Defense mechanism and management.
3. Students will acquire knowledge of different plant diseases in different plants.

B.Sc. Zoology

B.Sc.F.Y.

Paper: CCZ-I: Biodiversity of Invertebrates and Chordates

Section –A

Title of Paper: Paper-I : Biodiversity of Invertebrates

Course Outcome:

1. The student will be able to identify a given invertebrate upto class level.
2. Ability to understand the contribution of Invertebrates in the biodiversity index of any given habitat.
3. Ability to understand and appreciate the ecological and economic importance of invertebrates and vertebrates.

4. Ability to identify and describe external morphology and internal anatomical features of representative invertebrate species.

Paper: CCZ-I: Biodiversity of Invertebrates and Chordates

Section –B Title of Paper: Paper-II : Biodiversity of Chordates

Course Outcome:

1. The student will be able to identify and understand the Biodiversity of Chordates.
2. Ability to understand anatomical relation between different vertebrate classes.
3. The learner will be able to understand the economic importance of Chordates.

Paper: CCZ-II: Comparative Anatomy and Developmental Biology of Vertebrates

Section –A Title of Paper: Paper-III: Comparative Anatomy of Vertebrates

Course Outcome:

1. The student will be able to identify and understand comparative anatomical structure of vertebrate organ systems.
2. The learner will be able to understand the evolution of various organs and systems in the vertebrate body according to its environment.
3. Understand the plasticity of organ systems to adapt to the environment and acquire different novel forms

Paper: CCZ-II: Comparative Anatomy and Developmental Biology of Vertebrates

Section –B Title of Paper: Paper-IV : Developmental Biology of Vertebrates

Course Outcome :

1. The student will be able to explain the basics processes of vertebrate embryonic development.
2. Ability to describe the various steps in vertebrate development.
3. Identify and explain about the different embryonic structures.

4. Describe the functions of different extra-embryonic structures.

5. Understanding of the Assisted Reproductive Technologies.

DSEZ-I; Section-A:

PAPER-XII- ECOLOGY AND ZOOGEOGRAPHY:

_ To understand and appreciate the interactions of organisms with their environments and the consequences of these interactions for population, community, and ecosystem dynamics.

_ To be aware of the current environmental issues with an understanding of the basic ecological concepts involved.

_ To study the local and geographical distribution and abundance of organisms (habitat niche, community, bio-geography).

_ To understand the inter-relationship between individuals in population and communities (population ecology).

_ To study the structural adaptations and functional adjustment of organisms to their physical environment.

_ To study the conservation and management of natural resources and pollution (applied ecology).

DSEZ-I;

Section-B: PAPER-XIII (C)- ENTOMOLOGY- I

_ To define general entomology and classifying insects according to their economic importance.

_ To acquaint students with the morphology and anatomy of selected insect species.

_ To introduce students to insect biology.

_ To impart knowledge of insect ecology covering factors like effect of light, temperature, humidity.

DSEZ-II; Section-A:

PAPER-XIV- ETHOLOGY, BIOMETRY AND BIOINFORMATICS:

_ To study the behaviour of organism under natural conditions (Ethology).

_ To understand the concepts of Biometry.

_ To get acquainted with and apply the fundamentals of applied statistical methodology.

_ To give students an introduction to the basic practical techniques of bioinformatics.

_ To emphasize the application of bioinformatics and biological databases for problem solving in real-life & research.

_ To familiarize student with the use of a wide variety of internet applications, biological database

and to enable them to apply these methods under various situations.

DSEZ-II; Section-B:

PAPER-XV(C)- ENTOMOLOGY- II:

_ To introduce students to the ecology and biology of insects of medical and agricultural importance.

_ To provide students with opportunities to understand insect pest management techniques such as

cultural, physical, Biological, chemical, IPM etc.

_ To provide students an adequate knowledge of various types of insecticides and problems associated with their use.

_ To equip students knowledge of practical applications of insecticides and maintenance of pesticide

equipment.