Mula Education Society

Shri Dnyaneshwar Mahavidyalaya, Newasa
Program Specific Outcomes (PSO) and Course Outcomes (CO)
Faculty-Arts
AY-2019-20
(UG Departments)

Name of Faculty	**Faculty of Humanities**
Name of Department	**Marathi**
UG Programme	**B.A. Marathi**

Programme Specific Outcomes (PSO)

1. मराठी भाषा , मराठी सा ित्य आ ि मराठी सं कती या घटकाबदल अभ्यास व सशोधन करणयाची वती ि वदा या मधय ि नमा ि ो त.
2. सा ित्य ि वषयक आकलन, आ वाद आ ि मलयमापन ±मता ि वदा या मधय ि वक सत ि ो त जात.
3. सा ित्याभ्यासातन जीवन ि वषयक समज ि वक सत ि ो त.
4. मराठी भाषच उपयोजनतमक कौशलय ि वक सत ि ो णयास मदत ि ो त.

Course Outcomes(CO): F.Y.B.A.

(CC-1 A) मराठी सा ह ि तय: कथा आ ण भा ष क कौशलय ष कास

१. या अभ्यासकमातन ि वदा या ची भाष ि वषयीची जा ि समधद ि ो णयास मदत ि ो त.

२. ि वदा या मधय सभा ष,वाचन,लखन,सर ग ि,साराशलखन आदी कौशलय ि वक सत ि ो णयास मदत ि ो त.

३. अवातर वाचनाकड ि वदा या चा कल वाढलला ि दसतो.

४. कथ ि वषयीची आ भरची ि वक सत ि ो णयास मदत ि ो त.

Name of Faculty	Faculty of Humanities
Name of Department	**Hindi**
UG Programme	**B.A. Hindi**

Programme Specific Outcomes (PSO)

१..अनवाद क±त म अनवादक क रप म अवसर
२ सा ितय क±त म लखन क अवसर .
३ सरकारी कायालय म राजभाषा आधकारी , राब ीयकत बक .

Course Outcomes(CO): F.Y.B.A.

Hin-01:सामानय ŏद४ पæनपत **A** 1

1. ŏद४कावय साŏतय का परिचय दन
2. ŏद४भाषा दवा ा सवाद कौश ववकससत कना .
3. मौस क खन की ओर रझान बढाना .
4. ववजापन खन कौश ववकससत कना .
5. अनवाद समबनधी जानका ४दना .
6. ŏद४कमŬयŏग का परिचय दना.

Name of Faculty	**Humanities: Arts, Fine Arts and Performing Arts.**
Name of Department	**English**
UG Programme	**B.A. English**

Programme Specific Outcomes (PSO)

1. Develop communications skills in English and analyze the basic problems of students in communications skills.
2. Understand the importance literature in creating aesthetic, mental, moral, intellectual development of an individual and increasing a healthy society.
3. Understand the importance of English as international language.
4. Develop the literary test of students and encourage them for creative writing.
5. Enrich the critical analysis and linguistic sensibility of the students

Course Outcomes(CO): F.Y.B.A.

ENG C1- Compulsory English

1. Development of literary and linguistic test of the newly admitted students.
2. Improvement of communication skills in English
3. Enrichment of Grammatical sense and writing skills.
4. Developing ability for dialogue and group discussion.

ENG G1- Optional English

1. Development of interest for English Literature.
2. Knowledge of the basic function of Literary Language.

FE 1- Functional English Paper I

(An Introduction to English Language and Writing Skills in English)

1. Create awareness about use language in the context.
2. Development of linguistic competence within students.
3. Development of basic effective writing skills of students.

FE 2- Functional English Paper II (Oral Communication in English)

1. To develop students oral communication skills in English.
2. To develop students to basics of computer.
3. To develop students to various conversational situations.

Name of Faculty	**Arts**
Name of Department	**History**
UG Programme	**B.A. (History)**

Programme Specific Outcomes (PSO)

5. He / She Will find the factors and forces behind the rise growth and spread of Civilizations and Cultures.
6. Inculcate Values of National Integration among the Students.

Course Outcomes(CO): F.Y.B.A.

History-11171: Early India : From Prehistory to the Age of the Mauryas

1. It Attempts to Highlight The Factors and Forces Behind The Rise, Growth and Spread of Civilization and Culture of India along with the Dynastic History.
2. It also attempts to help the students to Understand the Contribution of Early Indians to Polity, art,literature, Philosophy, religion and Science and Technology .
3. It also aims to foster the spirit of enquiry among the students by studying the major developments in Early Indian History.

Name of Faculty	**Humanities (Mental, Moral & Social Sciences)**
Name of Department	**Political Science**
UG Programme	**B.A. Political Science**

Programme Specific Outcomes (PSO)

PSO1-Political Science and Society: understanding the inter relationship between policy decisions and its effects on society.

PSO2-Critical thinking: the ability to analyse and predict socio political phenomena based on the study of existing socio economic determinants and past experiences.

PSO3 - Effective citizenship: the course curriculum inculcates among students a basic understanding of the rights and duties of citizenship.

PSO4 - Communication: Establishment of linkages between academics and civil society

PSO5- Individual and team work: Function effectively as an individual and as a member/leader in different social settings.

Course Outcomes(CO): F.Y.B.A.

11161: Introduction to Indian Constitution. (G1) Semester I & II.

CO 1- Introducing the Indian Constitution with a focus on the role of the Constituent Assembly and examining the essence of the Preamble.

CO 2- Examining the Fundamental Rights and Duties of Indian citizens with a study of the significance and status of Directive Principles.

CO 3- Assessing the nature of Indian Federalism with focus on Union-State Relations.

CO 4- Critically analyzing the important institutions of the Indian Union: the Executive: President; Prime Minister, Council of Ministers; Governor, Chief Minister and Council of Ministers; The legislature: Rajya Sabha, Lok Sabha, Speaker, Committee System, State Legislature, The Judiciary: Supreme Court and the High Courts: composition and functions- Judicial Activism

CO 5-Looking at the Constitutional Amendment Procedure with focus on the main recommendations of the Constitutional Review Commission

(Venkatachalliah Commission)

CO 6- Critically evaluating the Indian Party system - its development and looking at the ideology of dominant national parties

CO 7- Evaluating the role of various forces on Indian politics: religion; language; caste; tribe; regionalism; business; working class and peasants

CO 8- Evaluating the Electoral Process in India with focus on the Election Commission: Composition, Functions and Role

Contact Hours: 5.25 hrs a week Tutorial: 9 hrs annually

Name of Faculty	**Humanities (Mental, Moral & Social Sciences)**
Name of Department	**Economics**
UG Programme	**B.A. Economics**

Programme Specific Outcomes (PSO)

1. Ability to develop and understanding of the knowledge with facts figures concerned with subjects like History, Political Science, Geography, Economics and Languages.
2. Ability to develop awareness in various aspects of human life & culture.
3. Ability to compare and contrast in social life and linguistic behavior
4. Students will a multifaceted personality who is self-dependent; earning his own bread and butter and also creating opportunities to do so.
5. Develop various communication skills such as reading, listing, speaking, etc., which will help in expressing ideas and views clearly and effectively

Course Outcomes(CO): F.Y.B.A.

11151: Indian Economic Environment

1. At the end of the course, the student should be able discuss and debate on the various issues and challenges facing the Indian Economic Environment.
2. Ability to develop an understanding of the economic environment and the factor affecting economic environment
3. Ability to develop awareness on the various new developments in the different sectors of an economic- agriculture, industry, services and banking etc.
4. Ability to compare and contrast Indian Economy with other world economics.

Name of the Faculty	**Arts/Science and Technology**
Name of the Department	**Geography**
UG Programme	**B.A. Geography**

Programme Specific Outcomes

1. Demonstrate and understanding of the fundamental principles, theories, recent technics of geography and related branches of the subject i.e. Geomorphology Economic Geography, Human Geography, Agriculture Geography etc.
2. Apply Statistical Techniques of Spatial Analysis.
3. Determine ability to apply knowledge learned in classroom to set and perform simple laboratory experiments in geography.

Course Outcomes: (F.Y. B.A.)

Gg.110: Physical and Human Geography

1. Explain principal terms, definitions, Concept and component of physical and human geography.
2. Discuss development of interior of the earth and theories
3. Identify the structure and composition of atmosphere, pressure belt and climatic condition, types of rainfall, heat budget.
4. Describe importance of hydrosphere, landforms regarding seafloor spreading, and sea waves
5. Explain the factors influencing for distribution of population, apply the concept of theories of Population
6. Describe the pattern and types of rural settlement Identify various patterns of settlement
7. Analyse the trends of urbanization in India and Maharashtra
8. Explain the types of agriculture ,Factors influencing on agriculture and problems in Indian agriculture

Program Specific Outcomes (PSO) and Course Outcomes (CO)

Faculty - Commerce

AY-2019-20

Name of the Faculty	**Commerce and Management**
Name of Department	**BBA-CA**
UG Programme	**BBACA**

Programme Specific Outcomes (PSO)

1. To produce skill oriented human resource.
2. To import practical skills among students.
3. To make industry ready resource.
4. To bring the spirit of entrepreneurship.

Course Outcomes(CO): F.Y.B.B.A.(CA)

1. **101 Business Communication Skills -**
   - To understand what is the role of communication in personal and business world
   - To understand system and communication and their utility
   - To develop proficiency in how to write business letters and other communications in required

2. 102 Principles of Management
   - To understand basic concept regarding org. Business Administration
   - To examining how various management principles
   - To develop managerial skills among the students

3. 103 C Programming
   - To understand the concept of Procedural Programming
   - To understand the concepts of c language
   - To develop technical skills

4. 104 Database Management Systems
   - To understand the data management skills
   - To learn to operate DBMS
   - To understand the importance of DBMS

5. 105 Business Statistic
   - To understand role and importance of statistics in various business situations
   - To develop skills related with basic statistical technique
   - Develop right understanding regarding regression, correlation and data interpretation

6. 106 Laboratory Course I
   - To assess the knowledge of student in C and DBMS

7. 1 ADD-ON PPA
   - To impart the knowledge of Programming Concepts

Faculty - Commerce (UG)
AY-2019-20

Name of Faculty	**Commerce**
Name of Department	**Commerce**
UG Programme	**B.Com**

Sr. No.	Name of Degree	Outcomes
1	**Bachelor of Commerce B.Com**	•**Programme Outcomes:** After successfully Completing B.Com programme, students will able to PO1: In depth knowledge, understanding and skills in commerce. PO2: Build a strong foundation of knowledge in different areas of Commerce. PO3: Develop the skill of applying concepts and techniques used in Commerce for real life problems. PO4: Inculcate reading, writing, speaking skills and Business correspondence. PO5: Creates awareness among society about Law and Legislations related to commerce and business. PO6: Use effectively recent Trends in Business, Organizations and Industries. PO7: Communicate effectively about Economic Environment of Country as well as World. PO8: Use effectively practical skills in real life related to banking and corporate world. PO9: Provides a platform for overall development and develop knowledge level and awareness about Recent Trends of World PO10: Use new technologies effectively to communicate ideas in the area of commerce. PO11: Critically evaluate new research findings, ideas, methodologies and theoretical frame work in specialized study. PO12: Work collaboratively and productively in groups.

	Bachelor of Commerce B.Com	•**Programme Specific Outcomes:** PSO1: Students will be able to apply basic skills learnt in commerce necessary for analysis of various problems in accounting, marketing, business economics, management and finance. PSO2: Students will demonstrate progressive affective domain development of values, the role of accounting in society and business. PSO3: Students will able to demonstrate quantitative and qualitative knowledge in key areas of organization behaviour. PSO4: Students will able to evaluate national and international issue and discussion on economic, commercial and business related topics.	
1	F.Y.B.COM	Course 1123: Financial Accounting	After successfully completing this course, student will be able to - 1. Classify liabilities under piecemeal distribution of cash and student also able to practically solve problems. 2. Discuss disposal of assets and liabilities not taken over by new firm in amalgamation process with example. 3. Explain Accounting Procedure in the books of the firm under Conversion of Partnership Firm into Ltd. Co. and solve the problems. 4. Demonstrate how to create a company, grouping, generation, Accounting Report with the help of Accounting Software Package. 5. Explain the Accounting Standard applicable in India 6. Explain suffered recoupment and lapse of short-working with examples. 7. Distinguish between Hire Purchase System and Installment System and solve problems thereon. 8. Demonstrate allocation of expenses on basis of Apportionment in Departmental Accounts.
	F.Y.B.COM	Banking and Finance [Fundamentals of Banking]	1. To acquaint the students with the fundamentals of banking. 2. To develop the capability of students for knowing banking concepts and operations. 3. To make the students aware of banking business and practices. 4. To give thorough knowledge of banking operations. 5. To enlighten the students regarding the new concepts introduced in the banking system

Program Specific Outcomes (PSO) and Course Outcomes (CO)
Faculty - Commerce (PG)
AY-2019-20

Name of Faculty	**Commerce**
Name of Department	**Commerce**
PG Programme	**M.Com (Banking and Finance)**

Programme Specific Outcomes (PSO)

1. The fundamentals, principles, practical skills and recent developments in the subject area.
2. Inspire and boost interest of the students towards Commerce as the main subject and understand global issues.
3. To create foundation for advanced studies, research and development in Commerce.

Course Outcomes: M.Com. Part I

Com-101: Management Accounting

1. The learner will be acquired with sound knowledge of different tools and techniques of Management Accounting used in decision making.
2. The learner is acquainted with basic tools and techniques like marginal costing, budgetary controls and working Capital Management.

Com-102: Strategic Management

1. Fundamentals of strategy and its implementation.
2. The concepts like Vision and Mission and Environmental analysis.

Com-103: Legal Framework of Banking

1. The student will be aware about the concept of legal provisions for Banking Companies.
2. Student Knowing the actual Role of RBI in India.
3. Student will be aware about Negotiable Instruments.

Com-104: Central Banking

After completing the course work the students will learn and master

1. Functional approach of the Central Bank of the country (RBI)
2. Promotional Role of RBI in agricultural and Industrial Finance

AY-2019-20

Name of Faculty	Science and Technology
Name of Department	Chemistry
PG Programme	M.Sc. (Organic Chemistry)

Programme Specific Outcomes (PSO)

1. Energetics and feasibility of the chemical reactions in designing the pilot projects.
2. The paths and intermediates and their nature during the chemical reactions.
3. Various methodologies for the determination of properties of newly obtained chemical compounds.
4. Which chemical compounds are to be synthesized and which innovative methods are to be employed for their synthesis?
5. Training regarding practical skills to synthesize and characterize the chemical compounds using simple laboratory techniques as well as sophisticated instruments.

Course Outcomes: M.Sc. Part I

Semester-I

Theory Courses:

CCTP-1: CHP-110, Physical Chemistry-I, (4 Credits)
Thermodynamics and Chemical Kinetics and Reaction Dynamics

1. The learner will be acquired with sound knowledge of energetics of chemical reactions, electron densities and orbitals involved in bonding.
2. The learner will be able to predict rate laws and reaction kinetics of simple and catalysed reactions.
3. The learner will be acquired with sound knowledge of molecular reaction dynamics

CCTP-2: CHI-130, Inorganic Chemistry-I, (4 credits)
Molecular Symmetry and Chemistry of Main Group Elements

The learner will be acquired with sound knowledge of:

1. Concept of symmetry, point group for determining stereochemistry and understanding spectroscopy.
2. Importance of Orthogonality Theorem to obtain the character table.
3. Concept of linear combinations of atomic orbitals and applications of symmetry in spectroscopy.
4. Chemistry of S and P block elements, their compounds, reactions and applications.
5. Advance chemistry of Boranes, fullerene, zeolites, polymers etc.
6. Organometallic chemistry of important elements from the main groups and their applications

CCTP-3: CHO-150, Organic Chemistry-I, Semester - I (4 Credits)
Basic Organic Chemistry

The learner will be acquired with:

1. Fundamental aspects of organic chemistry and heterocyclic compounds
2. Stereochemistry of organic compounds
3. Reactive intermediates; neighbouring group participation, rearrangement reactions
4. Oxidising and reducing agents and their applications.

CBOP-1: CHG - 190, General Chemistry-I, Semester-I (4 Credits)

SECTION-I: Theory Course (2 Credits)

Option-A: Introduction to Solid State of Matter

After completing the course work the students will learn and master

1. Bonding in solids - band theory,
2. Electronic conductivity, semiconductors, photoconductivity, non-stoichiometry, ionic conductivity and their applications, superconductivity
3. Method of synthesis of solids

Option-B: Chemical Mathematics

The learner is acquainted with and master basic ideas about mathematics and their applications in chemistry regarding-

1. Functions
2. Differential Equations
3. Vectors Matrices and Determinants
4. Mathematics of changing properties during chemical reactions

Option-C: Introduction to Chemical Biology

After completing the course work the students will learn and master

1. Concepts in Chemical Biology and chemistry in molecular and cell biology.
2. Chemistry of carbohydrates, amino acids, proteins and nucleic acids etc.
3. Chemical basis for replication, transcription, translation

Practical Courses

CHG-190, SECTION-II: (2 Credits)

Option-A: Inorganic Material Synthesis and Analysis

The students will learn the theoretical basis as well as master practical skills regarding
Analysis of materials like ores and alloys.
Synthesis of nano-materials and their characterizations using laboratory and instrumental techniques.

Option - B: Chemical Biology-I Practical

The students will learn the theoretical basis as well as master practical skills regarding
Qualitative analysis of carbohydrates, lipids and amino acids
Chromatographic Techniques for identification and separation of mixture of amino acids and sugars.
Estimation of glucose and proteins, saponification and iodine value of fats.
Quantitative estimation of DNA, Determination of Inorganic Phosphate in Biological Samples

CCPP-1: CHP-107: Practical Course - I (4 Credits)

Basic Practical Chemistry

The students will learn the theoretical basis as well as master practical skills regarding

1. Statistical treatment of experimental data.
2. Understanding of reaction kinetics and dynamics.

3. Understanding of physical properties in finding their applications.
4. Use of spectral methods for characterization and measurement of reaction dynamics using labelling.
5. Simple methods of characterization of organic compounds useful for monitoring chemical reactions.
6. Green chemistry and role of green chemistry in pollution reduction.
7. Safety techniques for handling of chemicals.

Semester-II

Theory Courses

CCTP-4: CHP-210, Physical Chemistry-II (4 Credits)

Molecular Spectroscopy and Nuclear and Radiation Chemistry

After completing the course work the students will learn and master

1. Principle, instrumentation and Applications of various spectral methods in determining the properties of the compounds.
2. Reactions dynamics using spectral and radio methods.

CCTP-5: CHI-230, Inorganic Chemistry-II (4 Credits)

Coordination and Bioinorganic Chemistry

The learner will be acquired with sound knowledge of:

1. Term symbols, construction of microstate table for various configuration
2. Splitting of the free ion terms in weak and strong ligand field.
3. Correlations diagram, Orgel diagram and Magneto chemistry
4. Important metals in biology and physiology.
5. Metalloproteins and metalloenzymes and their role in biology.

CCTP-6: CHO - 250, Organic Chemistry-II, Semester-II (4 Credits)

Photochemistry and Spectroscopy

After completing the course work the students will learn and master

1. Reaction mechanism and stereochemistry of electro cyclic reactions.
2. Free radical reactions, mechanism and the stereo chemical outcomes.
3. Principles, applications of spectroscopy in structure elucidation of organic compounds

CBOP-2: CHG - 290, General Chemistry -II, (4 Credits)

SECTION-I: Theory Courses (2 Credits)

Option-A: Material Characterization Technique

The students will learn the theoretical basis as well as master practical skills regarding Characterization techniques of solids.

1. Principle and instrumentation of powder XRD, applications of XRD for crystal structure determination
2. SEM, surface morphology of solid. And TEM, interpretation of TEM images.
3. XRF, types of XRF, instrumentation, analysis

Option - B: Organometallic and Inorganic Reaction Mechanism

The students will learn the theoretical basis as well as master practical skills regarding Organometallic Compounds with special reference to-

1. Spectral characterization
2. Catalytic reactions and their mechanisms
3. Types of reactions

Option- C: Introduction to Chemical Biology-II

After completing the course work the students will learn and master

1. Fundamental concepts in Chemical Biology
2. Methods of Chemistry used to solve problems in molecular and cell biology.
3. Importance of chemical biology research and interdisciplinary work.

Practical Courses

CHG-290, SECTION-II: (2 Credits)

Electrochemical Methods of Analysis

After completing the course work the students will learn and master

1. Experiments involving use of conductometry, polarography, Potentiometry, pH metry,
2. Interpretation of spectral data and important conclusions.

CCPP-2: CHP-227: Practical Course-II (4 Credits)

Basic Practical Chemistry (Compulsory)

The students will learn the theoretical basis as well as master practical skills regarding

1. Synthesis of important inorganic materials and their characterizations.
2. Understanding of reaction kinetics in terms of rate as well as energetics.
3. Use of Purification techniques: recrystallization, distillation, steam distillation and extraction during synthesis
4. Synthesis of important organic compounds using Green Chemistry Technology.
5. Use of spectral methods for their characterizations.

Mula Education Society

Shri Dnyaneshwar Mahavidyalaya, Newasa
Program Specific Outcomes (PSO) and Course Outcomes (CO)
Faculty - Science and Technology (UG)
AY-2019-20

Name of Faculty	**Science and Technology**
Name of Department	**Chemistry**
UG Programme	**B.Sc. Chemistry**

Programme Specific Outcomes (PSO)

1. The fundamentals, principles, practical skills and recent developments in the subject area.
2. Inspire and boost interest of the students towards chemistry as the main subject and understand global issues.
3. To create foundation for advanced studies, research and development in Chemistry.

Course Outcomes (CO): F.Y.B.Sc.

CH-101: Physical Chemistry

- The learner will be acquired with sound knowledge of chemical energetics, Chemical equilibrium and ionic equilibrium.
- The learner is acquainted with simple mathematical formulae, their derivations and numerical problems based on the theories.

CH-102: Organic Chemistry

- Fundamentals of Organic chemistry and Stereochemistry (Conformations, configurations and nomenclatures).
- Functional group approach for aliphatic hydrocarbons

CH-201: Inorganic Chemistry

- Developments in Atomic structure and Periodicity of Elements
- Theories for chemical bonding
- Foundations (Early preparations) used in chemistry laboratory

CH-202: Organic Chemistry

After completing the course work the students will learn and master

- Functional group approach for the various reactions in context to their structure

CH-103 and CH-203: Laboratory Courses

- Correlation between practical experiments with theory to improve the understanding.
- Development of practical skills and innovative in experimentation (Microscale techniques) and Laboratory safety.
- Imbibition of basic principles of research like synthesis, purification and characterizations.

Name of Faculty	**Science and Technology**
Name of Department	**Physics**
UG Programme	**B.Sc. Physics**

Programme Specific Outcomes (PSO)

- To foster scientific attitude, provide in-depth knowledge of scientific and technological
- concepts of Physics.
- To enrich knowledge through problem solving, minor/major projects, seminars, tutorials, review of research articles/papers, participation in scientific events, study visits, etc.
- To create foundation for research and development in Physics.
- To help students to learn various experimental and computational tools thereby developing
- analytical abilities to address real world problems.
- To train students in skills related to research, education, industry, and market.

Course Outcomes (CO): F.Y.B.Sc.

PHY-111: Mechanics and Properties of Matter

- To understand the basic concepts of physics in the era of mechanics like force, momentum, energy and laws of mechanics, like Newton's laws, kinematical equations and mechanics related problems.
- Students are able to understand the properties of solid like stress and strain.

PHY-112: Physics Principles and Applications

- To understand the general structure of atom, spectrum of hydrogen atom.
- To demonstrate an understanding of electromagnetic waves and its spectrum.
- Understand the types and sources of electromagnetic waves and applications.

PHY-121: Heat and Thermodynamics:

- To understand the concepts of work, power, and heat in thermodynamics; determine work and heat sign conventions; determine work involved with moving boundary systems (graphical and analytical methods).
- To understand the second law of thermodynamics, including why it is necessary, how it is defined (Kelvin-Planck and Clausius), the nature of irreversibility, and the Carnot cycle.
- To understand the concept of entropy, including the Clausius Inequality, using thermodynamic tables, setting up entropy balances, and calculating isentropic efficiency of pumps, compressors, turbines, and heat exchangers.

PHY-122: Electricity and Magnetism

- To understand the concept of the electric force, electric field and electric potential for stationary charges.
- Able to calculate electrostatic field and potential of charge distributions using Coulomb's law and Gauss's law.
- To understand the dielectric phenomenon and effect of electric field on dielectric.

PHY-113 and PHY-123: Physics Laboratory:

- Correlation between practical experiments with theory to improve the understanding.
- Development of practical skills and innovative in experimentation.
- To study and handle the fundamental instruments

Name of Faculty	**Science and Technology**
Name of Department	**Botany**
UG Programme	**B.Sc. Botany**

Programme Specific Outcomes (PSO)

4. The fundamentals, principles, practical skills and recent developments in the subject area.
5. Inspire and boost interest of the students towards Botany as the main subject and understand global issues.
6. To create foundation for advanced studies, research and development in Botany.

Course Outcomes(CO): F.Y.B.Sc.

BO-111: PLANT LIFE AND UTILIZATION I

1. The learner will be acquired with sound knowledge of Lower Cryptogams (Thallophytes and Bryophytes).
2. The learner will be acquainted with knowledge of life cycle pattern in **Algae** (*Spirogyra*), **Fungi** (Mushroom- *Agaricus bisporus*) & **Bryophytes** (*Riccia*).
3. The learner will be acquired with sound knowledge with utilization of Algae, Fungi, Lichens and Bryophytes in Food and Fodder, agriculture, fuel, ecological indicators and pharmaceutics.

BO-112: PLANT MORPHOLOGY AND ANATOMY

1. The learner will be acquired with sound knowledge of importance of plant morphology in identification, nomenclature, classification, phylogeny and Plant breeding.
2. The students will be making familiar with morphology of reproductive parts of plants.
3. The learner will be gain with sound knowledge of various tissues and internal organization of plant body.

BO-121: PLANT LIFE AND UTILIZATION-II

4. The learner will be acquired the information of plant diversity with reference to vascular plants like Pteridophytes, Gymnosperms and Angiosperms.
5. The learner will be acquired with sound knowledge of general characters, Outline classification, Life cycle, Habit, habitat, distribution, morphology, anatomy, reproduction and utilization of Pteridophytes, Gymnosperms and Angiosperms.

BO-122: PRINCIPLES OF PLANT SCIENCE

1. The students will be making familiar with fundamental concepts of plant physiology.
2. The learner will be acquired with sound knowledge of cell, cell organelles and cell cycle.
3. The students will be making familiar with nature of genetic material, DNA replication, DNA organization in chromosome, structure and type of RNA and application of molecular biology.

BO 113 and BO 123: PRACTICAL COURSE

1. Correlation between practical's with theory to improve the understanding.
2. To organize educational tour for study of flora.
3. To develop plant related practical skills in students.
4. To imbibe research related methodology in students.

Name of Faculty	**Science and Technology**
Name of Department	**Zoology**
UG Programme	**B.Sc. Zoology**
Programme Specific Outcomes (PSO)	
7. The basic understanding about the Life sciences. 8. Fostering the curiosity and awareness among the students about the animal diversity and conservation. 9. Insights about the classical and applied areas of Zoology 10. To inspire the student to pursue for post-graduation and further academic studies in Zoology.	
Course Outcomes (CO): F. Y. B. Sc.	

ZO-111 Animal Diversity I

3. Understand and Identify the animal diversity
4. Principles of classification of animal and terminologies
5. Binomial Nomenclature and Five kingdom Classification
6. Classification of invertebrates (Phylum Protozoa, Porifera, Cnidaria and Platyhelminthes)

ZO-112 Animal Ecology

3. Understand the concept of Ecology and Ecology: Structure and composition,
4. Characteristic of Population, Population regulation and interaction
5. Community characteristics and Ecological Succession
6. Animal interaction, Competition, Beneficial and antagonistic association

ZO-121 Animal Diversity II

1. Understand and Identify the animal diversity
2. Classification of invertebrates (Phylum Aschelminthes, Annelida, Arthropoda, Mollusca and Echinodermata)
3. Animal type study*: Asterias rubens* (Sea Star)

ZO-122 Cell Biology

1. Importance of Cell Biology and its application
2. Structural and functional difference between Prokaryotic and Eukaryotic cell.
3. Acquaint with microscopic and micrometry techniques.
4. Understand the structure and function of various cell organelles.

ZO-113 and ZO- 123 Zoology Practical Courses

4. Understanding of biological phenomenon learnt in the theory by performing experiments.
5. Development of practical and experimental skill to underlying the systematic classification of various invertebrates with help of museum specimens.
6. Practical thinking of local ecological problems for betterment of environment through sustainable development like vermicomposting and field visits and identification of pests

Name of Faculty	**Science and Technology**
Name of Department	**Mathematics**
UG Programme	**B.Sc. Mathematics (F.Y.B.Sc.)**

Programme Specific Outcomes (PSO)

1. Enhancing students' overall development and to equip them with mathematical modelling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment.
2. Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study
3. A student should get adequate exposure to global and local concerns that explore them many Aspects of Mathematical Sciences
4. 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
5. 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 Outcomes (CO): F.Y.B.Sc. Mathematics

MT-111 : Algebra

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

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

MT-112 Calculus-I

i) Give the students a sufficient knowledge of fundamental principles, methods and a clear perception of in numerous power of mathematical ideas and tools for solving Calculus Problems and know how to use them by Modelling, solving and interpreting.

MT-113 : Mathematical Practical Course:

i) The student get knowledge of Maxima Software, using this software they can solve mathematics problems.

ii)The students get knowledge and Skill of command of Mathematics language.

MT-121 : Analytical Geometry

i) A student should be able to recall basic facts about Analytical Geometry 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 Analytical Geometry concepts and concerned structures, and should be able to follow the patterns involved, mathematical reasoning

MT-122 : Calculus-II

i) Reflecting the broad nature of the Calculus and developing mathematical tools for continuing further study in various fields of science and technology.

ii) The student gains confidence in proving theorems and solving problems in Calculus.

MT-123: Mathematical Practical Course:

i) Maxima software is employed in education and research by mathematicians, physicists, engineers, and economists, coping with the major commercial CAS systems of today. Therefore students will get updated.

Mula Education Society

Shri Dnyaneshwar Mahavidyalaya, Newasa
Program Specific Outcomes (PSO) and Course Outcomes (CO)
Faculty - Science and Technology (UG)
AY-2019-20

Name of Faculty	**Science and Technology**
Name of Department	**Chemistry**
UG Programme	**B.Sc. Chemistry**

Programme Specific Outcomes (PSO)

1. The fundamentals, principles, practical skills and recent developments in the subject area.
2. Inspire and boost interest of the students towards chemistry as the main subject and understand global issues.
3. To create foundation for advanced studies, research and development in Chemistry.

Course Outcomes (CO): F.Y.B.Sc.

CH-101: Physical Chemistry

- The learner will be acquired with sound knowledge of chemical energetics, Chemical equilibrium and ionic equilibrium.
- The learner is acquainted with simple mathematical formulae, their derivations and numerical problems based on the theories.

CH-102: Organic Chemistry

- Fundamentals of Organic chemistry and Stereochemistry (Conformations, configurations and nomenclatures).
- Functional group approach for aliphatic hydrocarbons

CH-201: Inorganic Chemistry

- Developments in Atomic structure and Periodicity of Elements
- Theories for chemical bonding
- Foundations (Early preparations) used in chemistry laboratory

CH-202: Organic Chemistry

After completing the course work the students will learn and master

- Functional group approach for the various reactions in context to their structure

CH-103 and CH-203: Laboratory Courses

- Correlation between practical experiments with theory to improve the understanding.
- Development of practical skills and innovative in experimentation (Microscale techniques) and Laboratory safety.
- Imbibition of basic principles of research like synthesis, purification and characterizations.

Name of Faculty	**Science and Technology**
Name of Department	**Physics**
UG Programme	**B.Sc. Physics**

Programme Specific Outcomes (PSO)

- To foster scientific attitude, provide in-depth knowledge of scientific and technological
- concepts of Physics.
- To enrich knowledge through problem solving, minor/major projects, seminars, tutorials, review of research articles/papers, participation in scientific events, study visits, etc.
- To create foundation for research and development in Physics.
- To help students to learn various experimental and computational tools thereby developing
- analytical abilities to address real world problems.
- To train students in skills related to research, education, industry, and market.

Course Outcomes (CO): F.Y.B.Sc.

PHY-111: Mechanics and Properties of Matter

- To understand the basic concepts of physics in the era of mechanics like force, momentum, energy and laws of mechanics, like Newton's laws, kinematical equations and mechanics related problems.
- Students are able to understand the properties of solid like stress and strain.

PHY-112: Physics Principles and Applications

- To understand the general structure of atom, spectrum of hydrogen atom.
- To demonstrate an understanding of electromagnetic waves and its spectrum.
- Understand the types and sources of electromagnetic waves and applications.

PHY-121: Heat and Thermodynamics:

- To understand the concepts of work, power, and heat in thermodynamics; determine work and heat sign conventions; determine work involved with moving boundary systems (graphical and analytical methods).
- To understand the second law of thermodynamics, including why it is necessary, how it is defined (Kelvin-Planck and Clausius), the nature of irreversibility, and the Carnot cycle.
- To understand the concept of entropy, including the Clausius Inequality, using thermodynamic tables, setting up entropy balances, and calculating isentropic efficiency of pumps, compressors, turbines, and heat exchangers.

PHY-122: Electricity and Magnetism

- To understand the concept of the electric force, electric field and electric potential for stationary charges.
- Able to calculate electrostatic field and potential of charge distributions using Coulomb's law and Gauss's law.
- To understand the dielectric phenomenon and effect of electric field on dielectric.

PHY-113 and PHY-123: Physics Laboratory:

- Correlation between practical experiments with theory to improve the understanding.
- Development of practical skills and innovative in experimentation.
- To study and handle the fundamental instruments