

St. Xavier's College Thumba

Thiruvananthapuram, Kerala

A knowledge Society with Compassion Equity and Justice

Course Outcome

असतो मा सद्गमया



IQAC
St. Xavier's College Thumba

www.stxaviersthumba.org

COURSE OUTCOMES FOR M.COM

Semester. I

CO2 11 Paper 1 Contemporary Management Concepts and Thoughts

1. To create awareness and interest among the students in modern management concepts and thought
2. To enable the students to choose appropriate functional areas of management in their future studies

CO2 12 Paper 2 Management Information System

1. To make the students aware of the need for information systems, its application in managerial decision making
2. To make the students aware of the recent trends in information system

CO2 13 Paper 3 Research Methodology

1. To provide an insight into the fundamentals of social research
2. To understand the need, significance and relevance of research and research design
3. To acquire practical knowledge and required skills in carrying out research

CO2 14 Paper 4 Planning Development Administration

1. To give an insight into the structure of Indian economy
2. Providing the students a general idea, regarding planning process and procedure
3. Make the students aware of plan preparations of central, state and local self government

CO2 15 Paper 5 Advanced Corporate Accounting

1. Making the students to understand International Financial Reporting Standards and tools & techniques in various accounting situations.
2. Expose the students to advanced accounting issues and practices like Investment, Consolidation of financial statements, Liquidation etc.

Semester. II

CO2 21 Paper 1 E- Business and Cyber Laws

1. To equip the students with the emerging trends in business
2. To equip the students to introduce and explore the use of information technology in all aspects of business
3. To familiarize with the students cyber world and cyber regulations

CO2 22 Paper 2 Business Ethics and Corporate Laws

1. To impart knowledge on Business Ethics and Social Responsibility of Business
2. To provide knowledge of various factors influencing the corporate sector

CO2 23 Paper 3 Quantitative Techniques

1. To impart expert knowledge in the application of quantitative techniques in research
2. To impart knowledge in the use of SPSS in processing and analysis of data.

CO2 24 Paper 4 International Business

1. To provide an understanding of international business and its various dimensions.

CO2 25 Paper 5 Strategic Management

1. To create a conceptual awareness on various strategies
2. To familiarise students with the formulation and implementation of strategies

Semester III Elective (finance)

CO2 21 Paper 1 Income Tax Planning and Management

1. To expose the students to the latest provisions of Income Tax Act.
2. To identify the Tax Planning and Assessment Procedures for individuals, Firms and Companies.

CO2 22 Paper 2 Security Analysis and Portfolio Management

Providing the students a comprehensive understanding on the areas of security analysis and portfolio management and acquainting them with the various tools and techniques for making prudent investment decisions. It focuses on the principles of security analysis and the development of skills in portfolio management .

CO2 23 Paper 3 Strategic Financial Management

1. To convey the basic concepts of strategic financial management
2. To impart knowledge on strategies that support corporate finance.

CO2 24 Paper 4 Advanced Cost and Management Accounting

1. To comprehend and familiarize the established techniques, methods and practices in advanced cost and management accounting to the students.
2. To introduce the evolving dynamic cost and management techniques developed to support the emerging business models.

Semester IV Elective (finance)

CO2 21 Paper 1 Indirect Tax Laws and practices

To gain expert knowledge of the principles and laws relating to the Service Tax, Central Excise Duty, Customs Duty and Central Sales Tax

CO2 22 Paper 2 International finance

1. To familiarise the students with the international financial markets and instruments.
2. To create awareness on the global financial markets and institutions
3. To convey an understanding on the management of funds by MNCs

CO2 23 Paper 3 Management Optimization Techniques

1. To impart knowledge on various facets of project management viz. project preparation, feasibility study as well as project scheduling and monitoring
2. To convey basic principles of project optimization using various Operational Research tools.

CO2 24 Paper 4 Financial Statements- Interpretation and Reporting

BA MALAYALAM AND MASS COMMUNICATION

SEMESTER I

- **COURSE 1. MX 111.3 LANGUAGE COURSE IN MALAYALAM :
*GADHYASAHITYAM***

CO 1: Understanding Malayalam Prose and its various types

CO 2: Familiarizing with Malayalam Novel, Short Story, Drama and Essays of different times.

- **COURSE 2. MX1121 FOUNDATION COURSE : *SARGATHMAKARACHANA***

CO 1: To prepare the students to actively intervene in the field of Creative writing

CO 2 : To develop an aesthetic sense towards creative writing

- **COURSE 3 . MX 1141 CORE COURSE I : *KERALA SAMSKARAM BHAGAM -1***

CO 1: To develop a perspective of the Cultural History of Kerala

CO 2 : To understand the cultural and political background which triggered the development of language and literature of Kerala.

- **COURSE 4. MX 1142 CORE COURSE II : *NOVELUM CHERUKATHAYUM***

CO 1: To understand the origin and history of Malayalam Novel and Short Stories as well as the current trends in the field.

CO 2: To get familiarized with notable writers and their works and also the different sensibilities existed in the field of Malayalam Literature.

- **COURSE 5. MX 1171. VOCATIONAL COURSE : INTRODUCTION TO MASS COMMUNICATION**

CO : *Introduction to Mass Communication* is a beginner's course that will help the students understand the process of communication, its theories and models as well as gives an overall introduction to various channels of media and their effective usage.

- **COURSE 6. MX 1131 COMPLEMENTARY COURSE I : *VIVARTHANAM –
AAMUKHAVUM CHARITHRAVUM***

CO 1 : To introduce Translation as a subject and create an awareness that translation process is essential for the day today life

CO 2: To get an understanding of the History of Translation

SEMESTER II

- **COURSE 7. : ML 1211.1 ADDITIONAL LANGUAGE 2 : *DRISYAKALA SAHITYAM***

CO 1: To create a general knowledge about the great tradition of Visual ArtForms in Kerala.

CO 2 :To develop better understanding on the literary texts of *Kadhakali, Thullal, Drama, Film* etc

- **COURSE 8. MX1241 CORE COURSE : *PARISTHITHI SIDHANTHAVUM AVISHKARAVUM***

CO 1: To help students to understand the basic principles, trends and phenomenon in the field of Eco- Criticism

CO 2 : To be able to assess the Art and Literature in an environmental perspective.

- **COURSE 9. MX 1271. VOCATIONAL COURSE : MALAYALAM JOURNALISM**

CO: *Malayalam Journalism* encompasses journalism published and broadcast in the Malayalam language. The course provides students a detailed understanding of the usage of the language and gives special training to write for different media settings.

- **Course 10.MX 1231 COMPLEMENTARY COURSE II : *VIVARTHANAPADANAVUM SAMSKARAVUM***

CO 1: To develop an understanding of the Problems in Translation

CO 2: To understand the theoretical background of Translation Studies.

SEMESTER III

- **COURSE 11. MX1321 FOUNDATION COURSE II : *ADHUNIKASANKETHIKA VIDYAYUM MALAYALABHASHAPADANAVUM***

CO 1: To advance better awareness on Information and Communication Technology (ICT)

CO 2:To understand the modern technologies like Malayalam computing, cyberliterature, online language discourses and similar others .

- **COURSE 12. MX 1341 CORE COURSE : *MALAYALA KAVITHA POORVAGHATTAM***

CO 1: To understand the origin and development of Malayalam Poetry

CO 2: To understand the Literary Movements in Malayalam

- **COURSE 13. MX 1342 CORE COURSE : *DALITEZHUTHU ; PENNEZHUTHU : SIDHANTHAVUM AVISHKARAVUM***

CO 1: To understand the theoretical as well as the creative perspective of Dalit and Women writings

CO 2 : To be able to critically analyse Dalit and Women writings in Malayalam

- **COURSE 14. MX 1371. VOCATIONAL COURSE : REPORTING**

CO : This course gives students an understanding of NEWS and how to identify it according to the relevance. A glimpse of reporting for various media, the structure and process of writing for different media and similar other aspects are taught to students in order to make them ready for the industry.

- **COURSE 15. MX 1372. VOCATIONAL COURSE : EDITING**

CO: This course helps students attain keen observation skills to analyse a work, correct and modify it through polishing the language and adding values and also improve the quality by removing unnecessary parts and errors and make the work ready for publishing.

- **COURSE 16. MX 1331 COMPLEMENTARY COURSE III: *VIVARTHANA THARATHAMYAPADANAM***

CO 1 :To be able to translate proverbs, idioms , usages, technical terms, advertisements and news from English to Malayalam and Malayalam to English

CO 2 : To be able to identify problems in Literary Translation by comparing the selected Source and Target texts in Malayalam and English.

SEMESTER IV

- **COURSE 17: CORE COURSE : *SAHITHYANIROOPANAM: SIDHANTHAVUM PRAYOGAVUM***

CO 1: To Understand the important Literary Theories which are formulated in the East and the West

CO 2 : Enabling students to critically review literary texts, understanding the poetry writing tools including Vritham, Alankaram .

CO 3 : Understanding the History of Malayalam Literary Criticism .

- **COURSE 18. MX 1471. VOCATIONAL COURSE : ADVERTISING**

CO : Advertising Course opens up a vast opportunity for students in a competitive world. It helps students understand what marketing is, the process of managing the relationship between firms and customers and also the creative and technical aspects of Advertising that would help them prepare themselves for the industry

- **COURSE 19. MX 1472. VOCATIONAL COURSE : CORPORATE COMMUNICATION & MEDIA MANAGEMENT**

CO : The course helps the students understand about the working of Corporate Offices and Media Industry, its structure, work nature and related activities and the important role communication plays for the effective running of it.

- **COURSE 20. MX 1431 COMPLEMENTARY COURSE : MADHYAMANTHARA VIVARTHANAM**

CO 1 : Creating knowledge on Theoretical aspects of Inter – Semiotic Translation
CO 2: Familiarizing the History and best practices in the field of Adaptation

SEMESTER V

- **Course 21. MX 1541 CORE COURSE : NADODI VIJNANANEYAM**

CO 1: To understand the Folklore Tradition of Kerala.

CO 2 : To Create knowledge on Oral Tradition, Culture and Heritage of Kerala and make them aware of the need to protect and conserve the ancient wealth of wisdom or knowledge or practices.

- **COURSE 22. MX 1542 CORE COURSE : KERALA SAMSKARAM BHAGAM - 2**

CO 1 : Understand the development of Kerala Culture

CO 2 : Helping to realise Cultural uniqueness of Kerala and to create a civic sense for social change

- **COURSE 23. MX 1543 CORE COURSE : NADAKAM : CHARITRAM, PADAM, PRAYOGAM**

CO 1 : To understand Drama as an art form and its various peculiarities

CO 2: To evaluate Evolution and History of Malayalam drama

CO 3 :To Enable students to analyse significant dramas in Malayalam

- **COURSE 24. MX 1571. VOCATIONAL COURSE : RADIO PROGRAMME PRODUCTION**

CO : Radio is considered to be an effective means of communication even today as it has the potential to reach the grassroots level. This course helps students understand

the nature and scope of the medium and train them to create or produce different genres of programmes for Radio.

- **COURSE 25. MX 1572. VOCATIONAL COURSE : INTRODUCTION TO TELEVISION PRODUCTION**

CO: This course is designed to provide students with an understanding of the dynamics of the production processes of Television Programmes. They would have a clear grasp of the pre-production, production, post-production processes involved

- **COURSE 26. MX1581.1 OPEN COURSE : FILM APPRECIATION**

CO :

?

SEMESTER VI

- **Course 27. MX 1641 CORE COURSE : MALAYALA KAVITHA UTHARAGHATTAM**

CO 1: To sensitize students to the development of Malayalam Poetry

CO 2 : Getting aware of the modern and post- modern trends in Malayalam Poetry

- **Course 28. MX 1642 CORE COURSE : BhashaSasthram, BhashaCharitram**

CO 1: To identify Linguistics as a science of language and to understand the History of Language

CO 2 :To introduce theoretical and practical aspects of Linguistics

- **Course 29. MX 1643 CORE COURSE : MALAYALA VYAKARANAM**

CO 1: To understand the development of grammatical theory and practice

CO 2: Enabling to critically analyse the language in the light of grammatical theories

- **COURSE 30.MX 1671. VOCATIONAL COURSE: Media Law, Ethics and Society**

CO: This course is designed to introduce students to the First Amendment Doctrines and issues concerning freedom of expression, application of legal practices to the work of journalists and other media professionals, and also to engage students in a conversation about the ethical and political issues associated with news media.

- **COURSE 31. MX 1672. VOCATIONAL COURSE : PHOTO JOURNALISM**

CO: Through this course, students will learn to distinguish what constitutes quality journalistic photography, understanding how photographs are used to communicate in different media outlets?, along with understanding how media ethics apply to photojournalism. The course is designed in a way to make students capable enough to produce compelling and solid photo stories.

- **COURSE 32. MX 1681.2 ELECTIVE COURSE :
CHALACHITHRAPADANAM**

CO 1: To understand the influence of Cinema on humans and its origin and evolution

CO 2 : Realising visual media as an effective and powerful communication tool

CO 3: Understanding the importance and relevance of film as an art form of the modern ages.

- **Course 33. MX1661 Project/Dissertation**

[?] **BSC MATHEMATICS**

[?] **Semester 1**

[?] **MM 1141 Methods of Mathematics**

[?] CO1 : Produce rigorous arguments (proofs) centered on the material of number theory, most

[?] notably in the use of Mathematical Induction and/or the Well Ordering Principal in the

[?] proof of theorems .

[?] CO2 :Students will be able to compute limits and derivatives of algebraic, trigonometric, and

[?] piece- wise defined functions.

[?] CO3 :Students will be able to give a complete characterization of graphs of second degree

[?] equations in two variables, thus giving an algebraically unified description of conics.

[?] **Semester 2**

[?] **MM 1221 Foundations of Mathematics**

[?] CO1 : Students will be able to Solve systems of linear congruence and Apply Euler-Fermat's

[?] theorem to prove relations involving prime numbers.

[?] CO2 : Solve problems in a range of mathematical applications using the derivative or the

[?] integral.

[?] CO3: Students will be able to work with polar coordinates; this includes graphing in polar

[?] coordinates, finding area and equations of conics.

[?] **Semester 3**

[?] **MM 1341 Algebra and Calculus-I**

[?] CO1 : Students will be able to understand the concept of ring and its various properties.

[?] CO2 : student will be able to compute and analyse Scalar and vector valued functions of

[?] 2 and 3 variables and surfaces, and in turn the geometry of surfaces.

[?] CO3: Students could compute and analyse differential and integral ideas of vector valued

[?] functions of a real variable.

❓ **Semester 4**

❓ **MM 1441 Algebra and Calculus-II**

❓ CO1 : Students will be able to understand the properties of polynomials over commutative ring.

❓ CO2 : student will be able to calculate limits and derivatives of functions of two or more variables

❓ CO3: Students could compute definite integrals of functions of two or three variables and evaluate

❓ double and triple integrals for area and volume.

❓ **Semester 5**

❓ **MM 1541 Real Analysis-I**

❓ CO1 : Students will be able to describe the real line as a complete, ordered field.

❓ CO2 : student will be able to use the definitions of convergence as they apply to sequences,

❓ series, and functions.

❓ CO3: Students could produce rigorous proofs of results that arise in the context of real analysis.

❓ **MM 1542 Complex Analysis I**

❓ CO1 :Students will be able to define and analyse limits and continuity for complex functions as well

❓ as consequences of continuity.

❓ CO2 : student will be able to apply the concept and consequences of analyticity and the Cauchy-

❓ Riemann equations and of results on harmonic and entire functions.

❓ CO3: Students could evaluate integral of complex functions along C.

❓ **MM 1543 Differential Equations**

❓ CO1 :Students will be able to solve differential equations of first order using graphical, numerical

❓ and analytical methods and Solve and apply linear differential equations of second order.

❓ CO2 : Student will be able to demonstrate their understanding of how physical phenomena are

❓ modelled by differential equations and dynamical systems.

❓ **MM 1544 Vector Analysis**

❓ CO1 :Students will be able to differentiate vector fields and determine gradient vector fields and

❓ find potential functions.

❓ CO2 :Student will be able to evaluate line integrals directly and evaluate surface and volume integrals.

❓ CO3: Students could apply Gauss's Theorem and Stoke's Theorem to solve numerous practical

❓ problems.

❓ **MM 1545 Abstract Algebra I**

❓ CO1 :Students will be able to assess properties implied by the definitions of groups.

CO2 :Student will be able to use various canonical types of groups (including cyclic groups and groups of permutations).

CO3:Students could produce rigorous proofs of propositions arising in the context of abstract algebra.

MM 1551.1 Open Course (Operations Research)

CO1 :Students will be able to formulate linear programming problems.

CO2 : solve linear programming problems using graphical method and simplex method.

CO3: Solve transportation problems, assignment problems and problems in project management.

Semester 6

MM 1641 Real Analysis-II

CO1 : Students will be able to determine the continuity, differentiability, and integrability of

functions defined on subsets of the real line.

CO2 : Student will be able determine the Riemann integrability of a bounded function and prove a

selection of theorems concerning integration.

CO3: Students will be able to write solutions to problems and proofs of theorems that meet rigorous

standards based on content, organization and coherence, argument and support, and style and

mechanics.

MM 1642 Linear Algebra

CO1 :Students will be able to Solve systems of linear equations.

CO2 :Students will be able to analyse vectors in R^n geometrically and algebraically.

CO3: Students will be able to use matrix algebra and the related matrices to linear transformations.

MM 1643 Complex Analysis II

CO1 :Students will be able to analyse sequences and series of analytic functions and types of convergence.

CO2 :Students will be able to represent functions as Taylor, power and Laurent series, classify

singularities and poles, find residues and evaluate complex integrals using the residue theorem.

MM 1644 Abstract Algebra II

CO1 :Students will be able to analyse and demonstrate examples of normal subgroups, factor groups,

ideals and factor rings.

CO2 :Students will be able to use the concepts of isomorphism and homomorphism for groups and

rings.

CO3:Students will be able to produce rigorous proofs of propositions arising in the context of abstract

algebra.

MM 1645 Computer Programming (Pract.)

CO1 :Students will be able to use LaTeX to create documents and presentations.

CO2 :Students will be able to exhibit facility with a Linux command line environment.

CO3:Students will be able to write code in Python to perform mathematical calculations and

scientific simulations.

MM 1661.1 Graph Theory (Elective)

CO1 :Students will be able to understand the basic definitions and concepts of Graph theory

CO2 :Students will be able to be able to formulate problems in graph theoretic terms.

CO3:Students will be able to carry out complete proofs for results from the course curriculum

(counting arguments, induction, indirect proofs, algorithmic proofs).

MM 1646 Project

CO1 :Students will be able to articulate a clear research question or problem and formulate a

hypothesis

CO2 :Students will be able to use library and other tools to search for existing body of research

relevant to their topic.

CO3:Students will be able to articulate the relevance of their research to their coursework and

professional future, synthesizing their research, academic, and professional interests and

goals.

Programme Outcomes

PO 1: Student will be able to demonstrate in-depth knowledge in one of the foundational areas of the

mathematical sciences.

PO 2: Students will be able to formulate, analyze, and solve problems through analytical and

computational techniques and apply them to other disciplines when appropriate.

PO 3: Students should attain the needed written and oral communication skills to translate their degree into aviable career path.

Complementary Course in Mathematics for First Degree Programme in Physics

MM 1131 Mathematics I (Differentiation and Analytic Geometry)

CO1 : Students will be able to compute limits and derivatives of algebraic, trigonometric, and piecewise

defined functions.

CO2 :Students will be able to Solve problems in a range of mathematical applications in the field of

physics using the derivative .

☐ CO3: Students will be able to understand the equations of different type of conic sections in

☐ cartesian and polar coordinate systems and their applications in physics.

☐ **MM 1231.1 Mathematics-II (Integration and Vectors)**

☐ CO1 : Students will be able to compute definite and indefinite integrals of algebraic and

☐ trigonometric functions using formulas and substitution.

☐ CO2 : Students will be able to evaluate double & triple integrals for area and volume and

☐ Solve problems in a range of mathematical applications in the field of Physics.

☐ CO3: Students will be able to differentiate vector fields and determine gradient vector fields and

☐ find potential functions.

☐ CO4: Students could apply Gauss's Theorem and Stoke's Theorem to solve numerous practical

☐ problems.

☐ **MM 1331.1 Mathematics-III (Differential Equations, Theory of Equations and Theory of Matrices)**

☐ CO1 : Students will be able to solve differential equations of first order using graphical and

☐ analytical methods and solve and apply linear differential equations of second order.

☐ CO2 : Students will be solve systems of linear equations and compute and use eigenvectors and

☐ eigenvalues.

☐ CO3: Students will be able to diagonalise a matrix and apply this technique in computing matrix

☐ powers and solving system of equations.

☐ CO4: Students will be able to solve polynomial equations of degree greater than two.

☐ **MM 1431.1 Mathematics-IV (Complex Analysis, Fourier Series and Fourier Transforms)**

☐ CO1 : Students will be able to represent complex numbers algebraically and geometrically.

☐ CO2 : Students will be apply the concept and consequences of analyticity and the Cauchy-Riemann

☐ equations and of results on harmonic and entire functions.

☐ CO3: Students will be able to evaluate complex contour integrals directly and by the fundamental

☐ theorem, apply the Cauchy integral theorem in its various versions, and the Cauchy integral formula.

☐ CO4: Students will be able to represent functions as Taylor, power and Laurent series, classify singularities and

☐ poles, find residues and evaluate complex integrals using the residue theorem.

☐ CO5 : Students will be able to In-depth knowledge of Fourier analysis and its applications to problems in physics.

☐ **Programme Outcomes**

PO 1: Student will be able to demonstrate in-depth knowledge in foundational areas of the mathematical sciences.

PO 2: Students will be able to formulate, analyze, and solve problems through analytical and computational techniques and apply them to solve the problems which arise in physics.

PO 3: Students should attain an ability to communicate reasoned arguments of a mathematical nature in both written and oral form.

Complementary Course in Mathematics for First Degree Programme in Chemistry

Semester 1

MM 1131.2 Mathematics-I (Differentiation and Matrices)

CO1 : Students will be able to compute limits and derivatives of algebraic, trigonometric, and piecewise

defined functions.

CO2 : Students will be able to Solve problems in a range of mathematical applications in the field of

chemistry using the derivative .

CO3: Students will be solve systems of linear equations and compute and use eigenvectors and

eigenvalues.

CO4: Students will be able to diagonalise a matrix and apply this technique in computing matrix

powers and solving system of equations.

Semester 2

MM 1231.2 Mathematics-II (Integration, Differential Equations and Analytic Geometry)

CO1 : Students will be able to compute definite and indefinite integrals of algebraic and

trigonometric functions using formulas and substitution.

CO2 : Students will be able to evaluate double & triple integrals for area and volume and

Solve problems in a range of mathematical applications in the field of Physics.

CO3: Students will be able to solve differential equations of first order using graphical and

analytical methods and solve and apply linear differential equations of second order.

CO4: Students will be able to understand the equations of different type of conic sections in

cartesian and polar coordinate systems and their applications.

Semester 3

MM 1331.12 Mathematics-III (Vector Analysis and Theory of Equations)

CO1 : Students will be able to apply derivative concepts to find tangent lines to level curves.

CO2 : Students will be able to differentiate vector fields and determine gradient vector fields and

find potential functions.

☐ CO3: The integral ideas of the functions defined including line, surface and volume integrals - both

☐ derivation and calculation in rectangular, cylindrical and spherical coordinate systems

☐ CO4: Students could apply Gauss's Theorem and Stoke's Theorem to solve numerous practical

☐ problems.

☐ CO5: Students will be able to solve polynomial equations of degree greater than two.

☐ **Semester 4**

☐ **MM 1431.2 Mathematics-IV (Abstract Algebra and Linear Transformations)**

☐ CO1 : Students will be able to assess properties implied by the definitions of groups, rings and

☐ fields.

☐ CO2 : Student will be able to use various canonical types of groups (including cyclic groups and groups of

☐ permutations).

☐ CO3: Students will be able to recognize the concepts of Linear independence of vectors, Linear

☐ independence of Matrix columns.

☐ CO4: Students will be able to use matrix algebra and the related matrices to linear transformations such as rotation, reflection, projection etc. on the plane.

☐ **Programme Outcomes**

☐ PO 1: Student will be able to demonstrate in-depth knowledge in foundational areas of the mathematical sciences.

☐ PO2: Students will be able to formulate, analyse, and solve problems through analytical and

☐ computational techniques and apply them to solve the problems which arise in chemistry.

☐ PO 3: Students will be able to recognize the relationships between different areas of mathematics and the connections between mathematics and chemistry.

☐ **Complementary Course in Mathematics for First Degree Programme in Economics**

☐ **Semester 1**

☐ **MM 1131.5 Mathematics for Economics-I**

☐ CO1 : Students will be able to explain functions, limits and continuity of functions.

☐ CO2: Students will understand the basics of differentiation of functions in one variable.

☐ CO3: Students will be able to solve problems in a range of mathematical applications using the

☐ derivative.

☐ **Semester 2**

☐ **MM 1231.5 Mathematics for Economics-II**

☐ CO1: Students will be able to find successive derivatives of elementary functions.

☐ CO2: Students will be able to identify increasing and decreasing functions, turning points and points of inflexion.

☐ CO3: Students will understand partial differentiation.

☐ CO4: Students will be able to solve problems in a range of mathematical applications using ordinary and partial derivatives.

☐ **Semester 3**

☐ **MM 1331.5 Mathematics for Economics-III**

☐ CO1: Students will be able to find the integration of different functions.

☐ CO2: Students will be able to identify different types of series.

☐ CO3: Students will be able to solve problems in a range of mathematical applications using integration.

☐ **Semester 3**

☐ **MM 1331.5 Mathematics for Economics-III**

☐ CO1: Students will be able to formulate differential equations.

☐ CO2: Students will be able to solve first order and second order differential equations.

☐ CO3: Students will be able to solve problems in a range of mathematical applications.

☐ **Programme Outcomes**

☐ PO 1: Student will be able to demonstrate in-depth knowledge in foundational areas of the mathematical sciences.

☐ PO2: Students will be able to formulate, analyse, and solve problems through analytical and

☐ computational techniques and apply them to solve the problems which arise in Economics.

☐ PO 3: Students will be able to recognize the relationships between different areas of mathematics and the connections between mathematics and Economics.

B. Sc Degree Programme in Physics

Course outcome

Aims and objectives

In this programme, we aim to provide a solid foundation in all aspects of physics with opportunities to develop basic knowledge and understanding of scientific phenomena, facts, laws, definitions, concepts, theories, terminology, conventions, quantities and their determination, applications as well as their social, economic and environmental implications to real-life problems.

This programme also intends to introduce a broad spectrum of modern trends in physics and to develop experimental, computational and mathematical skills of students and enable them to demonstrate competency in their understanding of scientific information. The syllabi are framed in such a way that it bridges the gap between the plus two and post graduate levels of physics by providing a more complete and logical framework in almost all areas of basic physics. The programme also aims

(1) to provide excellent and quality education which will impart student with sufficient basic knowledge to further study and research in physics and for extensive range of opportunities in industry and allied fields.

(2) To preserve an environment of spirit of inquiry and teachers committed to transact physics as a rational and challenging subject.

(3) To support teaching and learning environment with fully equipped laboratory, library and internet facilities.

(4) To scrutinize, review and augment educational perspectives to ensure that the programme remains intellectually demanding and updated to suit current needs of physics graduates

- (5) to maintain the highest academic standards in undergraduate teaching.
- (6) to impart the skills required to gather information from resources and use them.
- (7) to equip the students in methodology related to physics.
- (8) use Information Communication Technology to gather knowledge at will.
- (9) to obtain solutions to physical questions by use of qualitative and quantitative reasoning and by experimental investigation.
- (10) to understand how a small number of fundamental physical principles underlie a huge variety of interconnected natural phenomena.
- (11) to acquire relevant information from a variety of sources and to be able to communicate scientific information in a clear, concise and logical manner.
- (12) to acquaint the students with basic tools of mathematics needed to analyze the language of nature.
- (13) to impart knowledge in chemistry which is required to complement the study of physics.
- (14) to give necessary knowledge in languages to express what the students have studied so far and to disseminate the knowledge they have attained to the benefit of the society.

Objectives

By the end of the first semester the students should have-

- (1) Attained a common level in basic mechanics and properties of matter.
- (2) been familiar with mathematics, Chemistry along with languages

By the end of the second semester the students should have-

- (1) a deep understanding of mechanical systems using basic concepts of classical mechanics.
- (2) basic foundation in mathematics Chemistry and Languages to complement the core courses.

By the end of the third semester, the students should have-

- (1) been introduced to powerful tools for tackling a wide range of topics in Thermodynamics, Statistical Mechanics.
- (2) attained additional relevant mathematical techniques, Chemistry and Languages to complement their future courses.

By the end of the fourth semester, the students should have-

- (1) a deep understanding of the theoretical foundations of electrodynamics.
- (2) laid a secure foundation in mathematics Chemistry Languages and other relevant subjects to complement the core for their future courses.
- (3) developed their experimental skills through a series of experiments at laboratories.

By the end of the fifth semester, the students should have-

- (1) covered a range of topics in almost all areas of physics including quantum physics, electronics, atomic and molecular physics etc.
- (2) been introduced the significance of research, different methods of research, design of experiments, data collection, error analysis, thesis writing etc.
- (3) developed their experimental and data analysis skills through a wide range of experiments in the practical laboratories.
- (4) got a chance to become familiar with a subject of their own interest through open course.

By the end of the sixth semester, the students should have-

- (1) developed the fundamental concepts of building up complexity from elementary constituents in the framework of nuclear and sub-nuclear physics.
- (2) attained basics of solid state physics which is the backbone of material science research.

(3) obtained basic skills of computer programming which is essential for their future career. (4) deep understanding of the principles behind LED, laser, optical non linearity and their applications in various devices.

(5) the experience of independent work such as projects, seminars and developed competency in experimental design and scientific data collection and analysis.

PY 1141 - Basic Mechanics and properties of matter

After successfully completed course, student will be able to apply the concept of moment of inertia in the description of the rotation of the

- Rigid body and apply the laws to predict forces in and motions of machines and structures..
- Apply conservation laws to analyze relatively simple physical mechanisms
- Give basic knowledge of oscillations and wave motion with their applications.
- Acquire engineering skills and practical knowledge, which help the students in their everyday life.
- Identify the materials suitable for the construction of buildings, houses etc.
- Understand the properties of fluids especially knowledge of viscosity and surface tension help the students in their daily life and agriculture.
- Do experiments in related areas with a theoretical background.

PY 12 21 Classical Mechanics

Students who have completed this course should

- Have a deep understanding of basic mechanical concepts related to discrete and continuous mechanical systems.
- Be able to solve the Newton equations for simple configurations using various methods.
- Build the capability to demonstrate knowledge and understanding of the following fundamental concepts in the dynamics of system of particles, planar and spatial motion of rigid body and Lagrangian and Hamiltonian formulation of mechanics.
- Develop the skills to represent the equations of motion for complicated mechanical systems using the Lagrangian and Hamiltonian formulation of classical mechanics.

PY 1341 Thermodynamics and Statistical physics

On satisfying the requirements of this course, students will have the knowledge and skills to:

- Identify and describe the statistical nature of concepts and laws in thermodynamics, in particular: entropy, temperature, chemical potential, Free energies and partition functions.
- Use the statistical physics methods, such as Boltzmann distribution, Gibbs distribution, Fermi-Dirac and Bose-Einstein distributions to solve problems in some physical systems.
- Apply the concepts and principles of black-body radiation to analyze radiation phenomena in thermodynamic systems.
- Apply the concepts and laws of thermodynamics to solve problems in thermodynamic systems such as gases, heat engines and refrigerators etc.
- Analyze phase equilibrium condition and identify types of phase transitions of physical systems.

- Make connections between applications of general statistical theory in various branches of physics.
- Design, set up, and carry out experiments; analyze data recognizing and accounting for errors; and compare with theoretical predictions.
- use the knowledge of thermal and statistical mechanics to explore various applications related to topics in material science and the physics of condensed matter.

PY 1441 Electrodynamics

Students who completed this course should –

- attain knowledge and develop skills in the basic concept of electric forces and calculate electric fields due to various charge distributions.
- gain an understanding of magnetic fields and their relationship to electrical fields
- Have a deep understanding of the theoretical foundations of electromagnetic phenomena.
- gain knowledge and develop skills in the safe use of direct electrical current circuits.
- handle more complicated circuits consisting of multiple emf sources and resistors.
- Be able to solve the Maxwell equations for simple configurations.
- Learn the concepts of electromagnetic waves, its transmission and reception.

PY 1541 Methodology in Physics & Relativistic Mechanics

This course will be an introduction to-

- the objectives and motivation in research, the significance of research in the social, economic and political development of the nation.
- the importance of measurement, measuring instruments, sources of errors and estimation of errors which is central to physics.
- conditions under which research in general, fundamental or technical, is conducted.
- Thesis writing to present the outcome of research in the prescribed format.
- The concept of special relativity and its applications to physical sciences.
- Significant tests of special theory of relativity.

PY 1542 Quantum Mechanics

Students who completed this course should-

- pinpoint the historical aspects of development of quantum mechanics.
- understand and explain the differences between classical and quantum mechanics
- understand the idea of wave function

- understand the uncertainty relations
- have a deep understanding of the mathematical foundations of quantum mechanics.
- understanding the basic principles of wave mechanics
- be able to solve the Schrodinger equation for simple configurations.
- understand the effect of symmetries in quantum mechanics.
- develop a knowledge and understanding of the relation between conservation laws and symmetries.
- have the ability to solve simple problems exactly.
- develop a knowledge and understanding of the concept that quantum states live in a vector space.

PY 1543 Electronics

Student who is successfully completing the course will be able to-

- acquire knowledge about semiconductor physics for intrinsic and extrinsic materials.
- understand the basic operation and working of different diodes.
- understand and use of the device models to explain and calculate the characteristics of the field effect transistors.
- learn the basics of semiconductor diodes, BJTs and their small signal and high frequency analysis.
- expose students to the function and application of the diodes, bipolar junction and field effect transistors in electronic circuits.
- identify almost all electronic components and their working principles.
- service or repair basic electronic equipments like radio, television, electronic chokes, lamps etc..
- Understand the terminal characteristics of op-amps and design /analyse fundamental circuits based on op-amps.
- Analyze feedback and its effect on the performance of op-amp.
- Design and analysis of nonlinear circuits.

PY 1544 Atomic and Molecular Physics

Upon successful completion of this course it is intended that a student will be able to-

- discuss the relativistic corrections for the energy levels of the hydrogen atom and their effect on optical spectra.
- state and explain the key properties of many electron atoms and the importance of the Pauli exclusion principle.
- explain the observed dependence of atomic spectral lines on externally applied electric and magnetic fields.
- state and justify the selection rules for various optical spectroscopies in terms of the symmetries of molecular vibrations.
- understand the basic principles of production, properties and applications of X-rays in various fields.
- learn the basic principles and use spectroscopic methods for qualitative and quantitative analysis in materials science research.

PY 1551 Open Course

After successfully completing the course, student will be able to

- understand the basics of origin and evolution of universe
- appreciate the mightiness of the universe and the beauty of evolution
- understand the role of Sun in the evolution of life on earth.
- Get basic ideas on structure of Solar system.

PY 1641 Solid State Physics

After this course, the students are expected to be able to:

- classify real solid materials based on basic concepts like atomic arrangement, micro structure and crystal binding.
- have a basic knowledge of crystal systems and spatial symmetries.
- apply the theory of X-ray diffraction in reciprocal space to determine the lattice structure of crystalline materials.
- understand the concept of reciprocal space and significance of Brillouin zones.
- understand the band structure of a crystalline material and based on this develop a qualitative understanding of the relation between band structure and the electrical/optical properties of a material.
- know the fundamental principles of semi-conducting materials and explain the basic physical principles behind a p-n junction.

- explain the physical principles for different types of electric and magnetic phenomena in solid materials and in relevant cases relate this to macroscopically measured physical quantities.
- outline the importance of solid state physics in the modern society.

PY 1642 Nuclear and Particle Physics

On satisfying the requirements of this course, students will have the knowledge and skills to-

- explain central concepts, laws and models in nuclear and particle physics.
- find the nuclear radius, mass and abundance of nuclide, nuclear binding energy, nuclear angular momentum and parity, nuclear electromagnetic moment and nuclear excited states.
- describe experimental techniques developed for nuclear physics purposes and discuss their influence on development of new technologies.
- learn types of nuclear reactions and conservation laws, energetics of nuclear reactions and reactions cross sections.
- expected to know the deuteron, nucleon-nucleon potential, proton-neutron and neutron-neutron interaction.
- use basic laws and relations to interpret experimental results.
- analyze production and decay reactions for fundamental particles, applying conservation principles to determine the type of reaction taking place and the possible outcomes.

PY 1643 Classical & Modern Optics

After successful completion of this course, students will be able to:

- comment on basic concepts and principles of geometrical, physical and modern optics and explain everyday optics phenomena.
- understand the physics behind various properties exhibited by light such as interference, diffraction, polarization etc.
- discuss the nature of light, its propagation and interaction with matter.
- know the principle of propagation of light in optical fibers, holography and its applications.
- fabricate modern optical and electro optical devices.

PY 1644 Digital Electronics & Computer Science

On satisfying the requirements of this course, students will acquire-

- the knowledge and skills to examine the structure of various number systems and its application in digital design.

- the basic knowledge of digital logic circuits to design logic circuits of their own.
- ability to identify basic requirements for a design application and propose a cost effective solution.
- an understanding of the basics of computer science with the introduction of programming in C.
- the skills to object-oriented programming, algorithm design, and problem solving with the introduction of computer science.
- knowledge that helps to prepares for positions as computer scientists in business, industry and government etc

PY 1661 – Elective Course: Space science

By the successful completion of the course the students will be able to

- understand the basics of origin and evolution of universe
- appreciate the mightiness of the universe and the beauty of evolution
- understand the role of Sun in the evolution of life on earth.
- Get basic ideas on structure of Solar system.

M.Sc DEGREE PROGRAMME IN PHYSICS

PH 211: CLASSICAL MECHANICS

- Demonstrate the ability to analyze and solve introductory problems in Physics.
- Demonstrate an advanced level knowledge and understanding of the laws of classical mechanics to include representing these laws in mathematical expressions with appropriate units for physical quantities.

PH 212: MATHEMATICAL PHYSICS

- Show quantitative and analytical skills necessary to solving physics/engineering problems.
- Demonstrate the ability to communicate analysis of problems in a professional manner

PH213: BASIC ELECTRONICS

- Student understand the basic signals and systems.
- Student can design bandpass, low pass, and high pass filter.
- Learn basic electronic instrumentation.
- Basic formulation of optical fibers.
- Basic principles of digital electronics and logic systems.

- Solve introductory DC and AC circuits.
- Design, construct, and analyze DC and AC circuits.

PH221: MODERN OPTICS AND ELECTROMAGNETIC THEORY

- Able to acquire the knowledge of Electromagnetic field theory that allows the student to have a solid theoretical foundation to be able in the future to design emission , propagation and reception of electro- magnetic wave systems.
- Able to identify , formulate and solve fields and electromagnetic waves propagation problems in a multi-disciplinary frame individually or as a member of a group.
- Able to acquire the knowledge of Non-linear optics and linear optics.

PH222: THERMODYNAMICS, STATISTICAL PHYSICS AND BASIC QUANTUM MECHANICS

Describe the Laws of Thermodynamics.

- Solve mechanics and thermodynamics problems using conservation principles.
- pinpoint the historical aspects of development of quantum mechanics.
- understand and explain the differences between classical and quantum mechanics.
- understand the idea of wave function.
- understand the uncertainty relations.
- solve Schroedinger equation for simple potentials.
- spot, identify and relate the eigenvalue problems for energy, momentum, angular momentum and central potentials explain the idea of spin.

PH223: COMPUTER SCIENCE AND NUMERICAL TECHNIQUES

- Demonstrate understanding of common numerical methods and how they are used to obtain approximate solutions to otherwise intractable mathematical problems.
- Analyze and evaluate the accuracy of common numerical methods.
- Implement numerical methods in C++.
- Demonstrate the basic working of 8085 μ p.
- Master an understanding of scripting and the contributions of scripting languages.
- Master an understanding of Python especially the object-oriented concepts

PH231: ADVANCED QUANTUM MECHANICS

- To acquire working knowledge of the Quantum Mechanics postulate on the physical systems.

- To acquire working knowledge of the Quantum Mechanics postulate on the evolution of physical systems.
- Understand the path integral representation of quantum mechanics.
- Understand the operator formulation of quantum mechanics.
- Understand time dependent perturbation theory in quantum mechanics.
- Understand how to apply perturbation theory to describe scattering.
- Understand the form and construction of relativistic wave equations.
- Appreciate the need for quantum field theory.

PH232: ADVANCED SPECTROSCOPY

- Use spectroscopic terminology and concepts to Explain how various regions of the electromagnetic spectrum can be used to measure different aspects of molecules structure.
- Analyze real experimental data to retrieve information about chemical and biological systems.
- Explain how Raman and IR techniques work and what information can be retrieved
- Explain how spectroscopy can be used to measure photochemical reactions.
- Choose an appropriate spectroscopic technique for a given task.

PH233: ADVANCED ELECTRONICS

- To introduce the various optical fiber modes, configurations and various signal degradation factors associated with optical fiber.
- To study about various optical sources and optical detectors and their use in the optical communication system.
- Finally to discuss about digital transmission and its associated parameters on system performance.
- Student understand the basic knowledge necessary for transmitting and receiving information.
- Student understand different types of modulation and demodulation.
- Student can solve analog and digital modulation problems.
- Student understand the fundamentals of mobile and wireless communications.

PH241: CONDENSED MATTER PHYSICS

- relate crystal structure and degree of ordering to atom binding and packing.

- classify condensed matter upon its degree of order, with emphasis on scattering experiments.
- explain the thermal properties in solids in particular heat capacity.
- classify condensed matter upon its electrical and transport properties.
- apply the obtained concepts to challenges in condensed matter physics.

PH242: NUCLEAR AND PARTICLE PHYSICS

- acquires advanced knowledge on nuclear science.
- Acquires knowledge on particle sciences.

PH243: ADVANCED ELECTRONICS II

- learns basic programming on 8086 microprocessor.
- Gets ideas on artificial intelligence
- acquires knowledge on robotics, neural networks etc.

M.COM - 2018

SEMESTER I

Paper 1: CO 211 – BUSINESS ETHICS AND CORPORATE GOVERNANCE

1. To convey basic understandings on the theories of Business Ethics
2. To provide a understanding on Corporate Governance practices and the provisions of the Companies Act relating to corporate governance.

Paper 2: CO 212- LEGAL FRAMEWORK FOR BUSINESS

1. To enable student acquire updated knowledge and develop understanding of the regulatory framework for business
2. To make students aware of opportunities available in various legal compliances so as to enable them employable.
3. To expose students in emerging trends in good governance practices including governance.

Paper 3: CO 213- RESEARCH METHODOLOGY

1. To provide an insight into the fundamentals of social science research.
2. To understand the need, significance and relevance of research and research design.
3. To acquire practical knowledge and required skills in carrying out research.

Paper 4: CO 214- PLANNING AND DEVELOPMENT ADMINISTRATION

1. To generate an overall insight on planning process in Indian Economy
2. To make the students aware about new planning initiatives in India

Paper 5: CO 215- ADVANCED CORPORATE ACCOUNTING AND REPORTING

1. To acquaint the students about important accounting standards
2. To gain ability to prepare financial statements including consolidated financial statements of group companies and financial reports of various types of entities by applying relevant accounting standards.
3. To expose the students to advanced accounting issues and practices such as insurance claims, investment accounting and liquidation of companies.

SEMESTER II

Paper 1: CO 221- E-BUSINESS & CYBER LAWS

1. To equip the students with the emerging trends in business
2. To equip the students to introduce and explore the use of information technology in all aspects of business.
3. To familiarise with the students cyber world and cyber regulations

Paper 2: CO 222- STRATEGIC MANAGEMENT

1. To create a conceptual awareness on various strategies.
2. To familiarise students with the formulation, implementation and evaluation of Strategies

Paper 3: CO 223- QUANTITATIVE TECHNIQUES AND FINANCIAL ECONOMETRICS

1. To impart expert knowledge in the application of Quantitative Techniques and Business Econometrics in research.
2. To impart knowledge in the use of SPSS in processing and analysis of data.

Paper 4: CO 224 - INTERNATIONAL BUSINESS

- To introduce the concept of international business and to create awareness on the changes in the international business arena

Paper 5: CO 225- INVESTMENT MANAGEMENT

1. To provide a general understanding about investment avenues and personal finance.
2. To give a broader understanding about behavioural finance and how it equip to decide personal investment.

Elective: FINANCE

SEMESTER III

Paper 1: CO 231U -INCOME TAX PLANNING AND MANAGEMENT

1. To impart deep knowledge about the latest provisions of Income Tax Act
2. To develop application and analytical skill of the provisions of Income Tax Law for Income Tax planning and Management.

Paper 2: CO 232F- SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

1. To provide a comprehensive understanding on the principles of security analysis and develop the skill in portfolio management.
2. Equip the students to value the real worth of securities.

Paper 3: CO 233 F- INTERNATIONAL FINANCIAL MANAGEMENT

- To familiarise the students with the international financial markets and instruments.
- To convey an understanding about foreign exchange risk management

Paper 4: CO 234F- STRATEGIC COST AND MANAGEMENT

ACCOUNTING

(i) To comprehend and familiarize the established techniques, methods and practices in Strategic Cost and Management Accounting to the students.

(ii) To introduce the evolving Strategic approaches and techniques in Cost and Management field and to developed industrial behaviour among the students in the emerging business areas.

SEMESTER IV

Paper 1: CO 241W- GOODS AND SERVICE TAX & CUSTOMS DUTY- LAW AND PRACTICE

1. To gain expert knowledge of the principles and law relating to Goods and Service Tax and Customs Act.
2. To impart skill in applying and analysing the provisions of Goods and Service Tax Act and Customs Act in handling practical situations.

Paper 2: CO 242F- RISK MANAGEMENT AND DERIVATIVES

1. To understand the risk management process and its application
2. To give a broader awareness on derivatives and its applications

Paper 3: CO 243F- ACCOUNTING STANDARDS

To acquaint the students to understand the structure, process and organizational set up involved in evolving accounting standards in India. To enable the students to apply some key standards while preparing and presenting the financial statements
Course.

Paper 4: CO 244S- MANAGEMENT OPTIMIZATION TECHNIQUES

1. To convey basic principles and application of optimization tools of resource utilization.
2. To provide an insight into optimal project implementation Techniques under deterministic and probabilistic conditions.

COURSE OUTCOMES FOR B.COM - 2018

Semester I

Foundation Course I: CO 1121

METHODOLOGY AND PERSPECTIVES OF BUSINESS EDUCATION

To provide the methodology for pursuing the teaching learning process with a perspective of higher learning in business education.

1. To create a basic awareness about the business environment and the role of business in economic development.
2. To provide a holistic, comprehensive and integrated perspective to business education
3. To give a fundamental understanding about ethical practices in business.

Core Course I: CO 1141 – ENVIRONMENTAL STUDIES

To develop knowledge and understanding of the environment and enable the students to contribute towards maintaining and improving the quality of the environment.

1. To enable the students to acquire basic ideas about environment and emerging issues about environmental problems.
2. To give awareness about the need and importance of environmental protection

Core Course II: CO 1142 MANAGEMENT CONCEPTS AND THOUGHT

To provide a comprehensive perspective on management theory and practice

- 1) To equip learners with knowledge of management concepts and their application in contemporary organizations
- 2) To facilitate overall understanding of the different dimensions of the management process.

Complementary Course I: CO 1131 – MANAGERIAL ECONOMICS

To acquaint the students with the application of economics in managerial decision making.

1. To familiarise students with the economic principles and theories underlying various business decisions.

To equip the students to apply the economic theories in different business situations.

SEMESTER II

Foundation Course II: CO 1221-INFORMATICS AND CYBER LAWS

To update and expand informatics skills and attitudes relevant to the emerging knowledge society and to equip the students to effectively utilise the digital knowledge resources.

1. To review the basic concepts and fundamental knowledge in the field of informatics and to create an awareness about the nature of the emerging digital knowledge society and the impact of informatics on business decisions.
2. To create an awareness about the cyber world and cyber regulations.

Core Course III: CO 1241 - FINANCIAL ACCOUNTING

1. To familiarize the students with different methods of depreciation.
2. To equip the students to prepare the accounts of specialised business enterprises.

CORE COURSE IV: CO1242- BUSINESS REGULATORY FRAMEWORK

To acquaint the students with the legal framework influencing business decisions and operations.

1. To provide a brief idea about the framework of Indian business Laws
2. To enable the students to apply the provisions of business laws in business activities

Complementary Course II: CO 1231 - BUSINESS MATHEMATICS

To enable students to acquire knowledge in applying basic mathematical tools in practical business decisions.

1. To familiarise the students with the basic mathematical tools.
2. To impart skills in applying mathematical tools in business practice

SEMESTER III

CORE COURSE V: CO 1341-ENTREPRENEURSHIP DEVELOPMENT

To equip the students to have a practical insight for becoming an entrepreneur

1. To familiarize the students with the latest programmes of Government in promoting small and medium industries.
2. To impart knowledge regarding starting of new ventures.

Core Course VI: CO 1342 - ADVANCED FINANCIAL ACCOUNTING

To equip the students with the preparation of accounts of various business areas.

1. To create awareness of accounts related to dissolution of partnership firms.
2. To acquaint students with the system of accounting for different branches and departments.
3. To enable students to prepare accounts of consignments.

Core Course VII CO 1343: COMPANY ADMINISTRATION

1. *To familiarize the students about the salient provisions of Indian Companies Act 2013.*

2. *To acquaint the students with Management and Administration of Companies, Compliance*

requirements, investigation into the affairs of the company and Winding up procedure.

Elective Course I: Stream 1 – Finance

CO 1361.1 - FINANCIAL MANAGEMENT

To provide conceptual and analytical insights to make financial decisions skill fully.

1. To familiarise the students with the conceptual framework of financial management.
2. To enable the students to understand the practical application of financial management.

Complementary Course III: CO 1331 - E-Business

To expose the students to e- business and its potentialities.

Course Objectives

1. To provide students a clear-cut idea of e-commerce and e-business and their types and models.
2. To acquaint students with some innovative e-business systems.
3. To impart knowledge on the basics of starting online business.

SEMESTER - IV

Core Course VIII CO 1441 - INDIAN FINANCIAL MARKET

To provide an in-depth knowledge on Financial Market and its Operations

To provide a clear-cut idea about the functioning of Indian Financial Market in general and Capital market operations in particular.

Core Course IX: CO1442 BANKING AND INSURANCE

To expose the students to the changing scenario of Indian banking and Insurance.

1. To provide a basic knowledge about the theory and practice of banking
2. To provide a basic understanding of Insurance business.
3. To familiarize the students with the changing scenario of Indian Banking and Insurance.

Core Course X: CO 1443 - CORPORATE ACCOUNTING

To expose the students to the accounting practices prevailing in corporate.

1. To create awareness about corporate accounting in conformity with the provisions of Companies Act, IAS and IFRS.
2. To help the students in preparation of accounts of banking and insurance companies.
3. To enable the students to prepare and interpret financial statements of joint stock companies.

Elective Course II: Stream I-FINANCE

CO1461.1- PROJECT FINANCE

To provide an understanding of the process and issues relating to project preparation, appraisal, administration, review and monitoring of projects.

1. To familiarise the students with the types of project appraisal, risk analysis, project financing costing and valuing;
2. To provide an overview of global project appraisal issues.

Complementary Course IV: CO 1431 - BUSINESS STATISTICS

To develop the skill for applying appropriate statistical tools and techniques in different business situations.

1. To enable the students to gain understanding of statistical techniques those are applicable to business.
2. To enable the students to apply statistical techniques in business.

SEMESTER V

Core Course XI: CO – 1541: FUNDAMENTALS OF INCOME TAX

To impart basic knowledge and understanding of the concepts and practices of Income Tax law in India.

1. To familiarize the students about the fundamental concepts of Income Tax.
2. To enable the students to acquire the basic skills required to compute the tax liability of individual assessee with more emphasis on Income from Salaries and Income from House property.

Core Course XII: CO 1542 - COST ACCOUNTING

To impart knowledge of cost accounting system and acquaint the students with the measures of cost control.

1. To familiarize the students with cost and cost accounting concepts
2. To make the students learn cost accounting as a distinct stream of accounting

Core Course XIII CO 1543: MARKETING MANAGEMENT

To impart the knowledge of various concepts of modern marketing management

- 1) To provide an understanding of the contemporary marketing process in the emerging business scenario.
- 2) To study various aspects of application of modern marketing techniques for obtaining a competitive advantage in business organizations.

Open Courses (For students from Disciplines other than Commerce)

Open Course 1. CO 1551.3 CAPITAL MARKET OPERATIONS

To create an interest among students towards stock market investment

To familiarize the students with capital market operations

Elective Course III: Stream 1 - Finance

CO 1561.1 FINANCIAL SERVICES IN INDIA

To provide a general awareness about the financial services

To familiarize the students with the structure and functioning of financial service sector in India.

SEMESTER VI

Core Course XIV: CO 1641 AUDITING

To acquaint the students with the principles and practice of auditing

1. To provide students the knowledge of auditing principles, procedures and techniques in accordance with current legal requirements and professional standards.
2. To familiarize students with the audit of Companies and the liabilities of the auditor.

Core Course XV: CO 1642: APPLIED COSTING

To develop the skill required for the application of the methods and techniques of costing in managerial decisions.

1. To acquaint the students with different methods and techniques of costing.
2. To enable the students to apply the costing methods and techniques in different types of industries.

Core course XVI: CO 1643 - MANAGEMENT ACCOUNTING

To develop professional competence and skill in applying accounting information for decision making.

1. *To enable students to acquire sound knowledge of concepts, methods and techniques of management accounting*
2. *To make the students develop competence with management accounting usage in managerial decision making and control.*

Open Course (For students from Department of Commerce)

Open Course II: CO 1651.3 - MANAGEMENT OF FOREIGN TRADE

To expose the students to the overall management of foreign trade affecting International business.

1. To acquaint the students with India's foreign trade.
2. To familiarise the students with international trade and services.

Elective course IV: Stream 1- Finance

CO1661.1-TAXATION LAW AND ACCOUNTS

To equip the students with the practical skill and knowledge of Income Tax and

fundamentals of GST

1. To enable the students to understand the provisions of Income Tax for computing Total

Income and Tax liability of various persons.

2. To familiarise the students with the procedure of Income Tax Assessment

3. To provide students the basic knowledge of Goods and Service Tax

Department of English

Semester One:

1. **CBCSS B.A./ B.Sc/ B.Com Language Course I (English – I)**, common for B.A, B.Sc (EN 1111 .1) and BMMC, BBT and B.Com (EN 1111.3)(**2015 Admissions onwards**)

➤ **Listening and Speaking Skills:**

- Through various theoretical methods and interactive activities, this paper aims to develop the listening, speaking, and reading skills in the students and enhance their communicative performance in the society.
- Phonetics is an integral part of the paper, aiming to provide knowledge and experience in pronunciation as per the norms set by IPA (International Phonetic Association).
- Facilitates reading skills in the students and enhances their ability to do constructive criticism.

➤ **Four One Act Plays –**

- Apart from the literary quality of the plays, they have the potential to enhance English conversational skills, and are noteworthy for their variety and power to entertain.
- Encourages them to read extensively and intensively.

2. **Foundation Course (English – II)** for B.A./B. Sc (EN 1211.1)

➤ **Writings on Contemporary Issues –**

- Aims in sensitizing the students to some of the major issues faced by the society.
- Instigates a greater, proactive involvement of the young generation in the contemporary issues faced by the milieu and inspires them to respond empathetically to the issues of the society..

Semester Two:

1. **CBCSS B.A./ B.Sc/ B.Com Language Course III– (English - II)** , common for B.A / B.Sc (EN 1211 .1) and BMMC, BBT, B.Com (EN 1211.2)

2. **Modern English Grammar and Usage:**

- To enhance their language skills by providing theoretical and practical knowledge about grammatical and syntactic structures of the sentences.
- To help them improve their verbal communication skills.
- To recognize the commonly made errors and the errors due to mother tongue interference and offers exercises to refine and rectify them.

3. **Language Course: IV – (English – III)** common for B.A./ B.Sc (EN 1212. 1)

➤ **Greening the Earth:**

- To generate environmental awareness as part of formal education and sensitize them towards the various ecological concerns.
- Accentuates the inevitable relationship between human beings and the environment.

Semester Three

1. Language Course: VI – (English – IV) common for B.A./B. Sc/ B.Com (EN 1311)

➤ Writing and Presentation Skills:

- Introduces the students to the various forms of writing and facilitates their writing and presentation skills.
- Aims to give students focused practice in writing for a wide range of purposes.
- Equips them to prepare and present seminar papers and project reports effectively.

2. Language Course: VIII – (English – V) common for B.A./B. Sc/ B.Com (EN 1411)

➤ Readings in Literature and A Banquet of Stories:

- To sensitize students to the aesthetic, cultural and social aspects of literature.
- To help them analyze and appreciate literary texts.
- Analyze literature as a cultural and interactive phenomenon.
- The collection of short stories aims that the students will read the stories and explore the human experiences and values reflected in them, that they will try to understand the ideas, values, and cultures of people past and present and that they will be able to relate literary experience to personal experience.

DEPARTMENT OF HISTORY

Programme Outcome of studying BA in History

Through the study of History as major students acquire many soft skills including knowledge, problem solving, analysis of complex problems, effective communication, social interaction, patriotism and nationalism, effective citizenship, ethics, team work, reading, writing, critical thinking, and organisational skills etc.

Earning a bachelor's degree in history will prepare for a wide array of occupations like teachers, professors, civil service officers, historians, archivist, attorney, writer, editor, advisers to political leaders, diplomats, reporters, tour guides, park rangers and hundreds of such kinds.

BA HISTORY COURSE OUTCOMES

HY 1141. Core 1. Methodology and Perspectives of Social Sciences

1. Familiarise students with the broad outline of Social Sciences and its methodology.
2. Familiarise the main concerns of Social Science disciplines
3. Articulate the basic terminologies and theories prevalent in concerned disciplines.
4. Make a critical reading and thinking on popular literature from a social science perspective.

HY II. 1241, Core II. Cultural Formation of the Pre Modern world.

1. Enable students to engage with conceptual and general issues regarding culture and civilisation of the ancient period.
2. Inculcate awareness among the students about the cultural heritage of mankind.
3. Inherits a sound knowledge about changes that took place among the major cultures of world civilisations.
4. Give an idea about the harmonious existence of the different sections of the people

HY 1321 Foundation II Informatics

1. Update and impart basic skills in informatics relevant to emerging knowledge society
2. Equip students effectively to utilise the digital knowledge of their course
3. Enable basic concepts and functional knowledge in the field of informatics.
4. Impart functional knowledge in standard office package and popular utilities.
5. Create awareness about the social issues and concerns in the use of digital technology.
6. Develop skills to enable students to use digital knowledge resources in learning.

HY 1341 Core III Evolution of Early Indian Society and Culture.

1. Analyse the salient features of prehistoric and proto-historic culture in India.
2. Trace the evolution of Indian culture with special reference to the society and polity of Ancient period.
3. Familiarise the students with heritage of India.

HY 1441 Core IV Medieval India: Socio-Cultural Processes

1. Equip the students to have an idea on social cultural and administrative features during the medieval period.
2. Familiarize the students the processes that made the socio-cultural specificities possible.
3. To make the students aware of the linkage effect of this period in subsequent centuries.

HY 1442 Core V History of Modern World – part I

1. Familiarise the students about the changes in the history of the modern world.
2. Analyze the agenda of the imperialistic powers in different parts of the World.
3. Create an understanding among students about the liberal ideas and freedom struggle.

HY 1541 Core VI Major Trends in Historical Thought and Writings

1. Enable the students to understand the history of historical writings
2. Equip intellectually to evaluate the works in the light of new theories and concepts.

HY 1542 Core VII Colonialism and Resistance Movements in India

1. Review the circumstances that led to the establishment of colonialism in India.
2. Bring out the impact of colonial rule in India with particular reference to socio-religious political and economic fields.
3. Analyze the genesis and progress of the resistance Movements against the British.

HY 1542 Core VIII History of Modern World – Part II

1. Trace the significance of the unification movements in Italy and Germany that paved the way for the beginning of a new epoch.
2. Give an idea about the First and Second World wars.
3. Evaluate the achievements and failures of the International Organisations.

HY 1544 Core IX History of Pre Modern Kerala

1. Understand the historical setting of ancient Kerala.
2. Know about the different regional principalities and political system in ancient Kerala.

HY 1545 Core X Making of Indian Nation

1. Trace the significance of the freedom movement in India.
2. Understands the concept of nationalism.
3. Know about the different courses and phases of Indian national movement and its leaders.

HY 1551.2, Open Course: Introduction to Archaeology.

1. Provide an insight into the discipline of archaeology
2. Trace the evolution of Archaeology as a subject
3. Introduce the students various periods, concepts, methods and terminologies in Archaeology.

HY 1641 Core Making of Modern Kerala

1. Familiarise the students about the colonial phase Kerala had gone through in its history.
2. Introduce the colonial modernity in Kerala.
3. Trace the history of the freedom movements in Kerala.

HY 1642 Core 1642 Major Trends in Indian Historical Thought and Writings

1. Enable the students to understand the origin and development of historical writings in India.
2. Locate major historical works in Indian History.
3. Create an awareness among the students about the influence of ideas and theories trends and concepts in Indian historical writings

HY 1643 Core XIII Contemporary India

1. Provide a graphic account of the circumstances that led to the formation of India Union.
2. Understand the challenges faced by independent India and the bold measures initiated after independence.
3. Evaluate the achievements of contemporary India with special reference to Science, IT etc.

HY 1644 Core XIV The twentieth Century Revolutions

1. Introduce the students four major revolutions of the 20th century.
2. Acquaint the students about the legacy of revolutions.
3. Familiarise the students about the nature, scope, and significance of the revolutions in the present context.

HY 1645 XIV Core Project Work

1. Enable students to understand the method of writing history.
2. Make aware of various tools pertaining to the writing of history.
3. Familiarise the new theories and concepts in historical method.

HY 1651.5 Elective An Introduction to Archaeology

1. Provide an insight into the discipline of archaeology
2. Trace the evolution of Archaeology as a subject
3. Introduce the students various periods, concepts, methods and terminologies in Archaeology.

DEPARTMENT OF ECONOMICS

B.A Economics - Course Outcome

EC01: Methodology and Perspectives of social sciences - familiarize the students with the broad contours of Social Sciences, specifically Economics and its methodologies, tools and analysis procedures. The course also aims to create an enthusiasm

among students about different schools of Economic thought and various aspects of social science research, methodology, concepts, tools and various issues.

EC02: Microeconomics I - to provide basic principles of Micro Economics.

EC03: Informatics - acquire basic informatics skills and attitudes relevant to the emerging knowledge society and also to equip the students to effectively utilize the digital knowledge resources for their chosen courses of study.

EC04: Microeconomics II - to provide a basic understanding of microeconomics.

EC05: Basic Tools for Economics I: enable the students to understand economic concepts with the aid of mathematical tools and enable them to quantify the variables.

EC06: Macroeconomics I - enable the students to understand the theoretical framework and the working of an economy as a whole. The paper also gives an insight to the students about the basic concepts used in Macro economics and policy alternatives used in controlling the economy.

EC 07: Money and Modern Banking - enable the students to know about the evolution and role of money in the economy. The paper also provides an insight into the innovative role of banks in the changing economic set up.

EC08: Macroeconomics II - enable the students to understand the theoretical framework and the working of an economy as a whole. The paper also gives an insight to the students about the basic concepts used in Macro economics and policy alternatives.

EC09: Economics of Growth and Development - enable the students to understand the basic concepts of Development and Growth. It also intends to provide the theoretical framework for growth and development discourses under different schools of economic thought and a better insights and knowledge on issues and challenges on economic development.

EC10: Indian Economy - enable the students to have an understanding of the various issues of the Indian Economy, enabling them to comprehend and critically appraise current issues and problems of Indian economy. The focus of the syllabus is on the development of Indian Economy since Independence.

EC11: Public Economics - intends to provide basic information to students on the scope of Public Economics, significance of government and its functions, governmental finance and its economic impacts, and budgeting with special reference to India.

EC12: Human Resource Management (HRM) - enable the students to understand the significance of Human Resource in constituting economic growth. The course also teaches the basic principles of strategic human resource management and the various aspects of Human Resource Planning.

EC12: Kerala Economy - understand the structural changes, sectoral aspects and features of the Kerala Economy since the formation of the state and enable the students to have a basic understanding of the emerging trends and issues of Kerala Economy .

EC13: Financial Economics - familiarize the students with the basic concepts in financial economics and develop comprehensive knowledge on the role of finance in the operation of an economy. It also enables them to know the operation of the Indian Financial System and activities in the financial markets.

EC14: Basic Tools for Economics - familiarize the students with statistical tools and techniques and enable them to apply these tools in economics.

EC15: International Economics - understand the basic concepts and theories of international trade and enable the students to have a basic understanding of the emerging trends ,issues and polices in the field of international Economic system .

EC16: Industrial Economics - provide a detailed treatment of issues in agricultural economics. Its aim is to familiarize students with policy issues that are relevant to Indian agricultural economics and enable them to analyze the issues, using economic concepts.

B.Sc. CHEMISTRY

The B.Sc. Degree Programme in Chemistry covers three academic years consisting of six semesters and aims to provide the students with an in-depth understanding of and training in chemical sciences. The programme has been designed to stimulate the interest of the students in chemistry and prepared in order to equip the students with a potential to contribute to the academic and industrial requirements of the society. The main objective is to provide to the students an in-depth understanding of the basic concepts of chemical sciences and enable them with tools needed for the practice of chemistry, which remains a discipline with much stress on experimentation. It attempts to provide a detailed knowledge of the terms, concepts, methods, principles and experimental techniques of chemistry.

2017 admission onwards

Semester – I Core Course - 1 Course Code– CH1141

The course helps to learn the students to understand the structure of atom, periodicity and non-aqueous solvents. Upon course completion, the student will be able to appreciate how the inner structure of elements dictates the chemical properties of elements and also understand how the elements are arranged in the periodic table and the properties and application of s-block elements, hydrogen and their compounds.

SEMESTER- II Foundation Course – II COURSE CODE- CH1221

On completion of the course the students will be able to understand how Science or in special Chemistry works. They will get a basic understanding to do self-directed experimentation work and research in chemistry under the guidance and supervision of a mentor. Analytical chemistry helps the students to understand about the experimental parts of the theory and the safety measures which could follow when doing experiments using chemicals.

Semester-3 Course-II Course Code – CH1341

The objective of this course is to provide a necessary foundation for inorganic chemistry. This course build a thorough knowledge in chemical bonding and compounds of non-transition elements and gives an elementary idea about nanomaterials. It aims to lay a strong foundation in the area of nuclear chemistry.

SEMESTER – IV (Core Course – 3) organic chemistry Course Code – CH1441

It imparts the behaviour of aliphatic and aromatic compounds and introduces the concept of reaction mechanism. Make the students to understand the mechanism of reactions of organic compounds, stereochemical aspects, photochemical reactions and aromaticity.

Semester – V (Course V) Physical Chemistry – I Course Code – CH1541

Students, upon completion of this course, will gain exposure and practice in the areas of physical chemistry which include gas and liquid properties, thermodynamics, and group theory. The laws of thermodynamics form the appropriate organizational tool to understand the chemistry of bulk systems.

Semester 5 Course – V Course Code –CH1542 Inorganic Chemistry – III

Students, upon completion of this course, will gain exposure and practice in the areas of inorganic chemistry which include coordination chemistry, transition and inner transition elements. Students will have a thorough understanding of the classification of several organometallic reactions and will be able to identify the role of organometallic compounds in organic synthesis. Instrumental methods of analysis and general principles of isolation of elements help the students to understand about the experimental techniques used in chemistry and how the elements are isolated from their ores.

Semester- V Core Course -VII Credit-4 Course Code – CH1543

Organic Chemistry- II

The students will get an interesting idea about the preparation and properties, mechanism of reactions of many organic conversions and of organic compounds. They will also get sufficient knowledge to interpret spectrum of organic compounds and the novel areas of organic chemistry – the supramolecular and green chemistry.

Semester – VI Course VIII Course Code – CH1641 Credit-4 Physical Chemistry – II

Students will explain and apply the concepts of thermodynamics, quantum mechanics, and spectroscopy to chemical, physical, and biochemical systems. Students will be able to derive essential mathematical relationships in thermodynamics, quantum mechanics, and spectroscopy. Students will evaluate physical and chemical systems by non spectroscopic techniques

Open course Semester V Course- Environmental Chemistry

students will have an idea about the structure of atmosphere,

And explain the followingAbout the sources and causes of Air pollution ,About the sources and causes of water pollution , About the sources and causes of land pollution Marine pollution and radio active pollution

SEMESTER VI Core Course IX Credit – 4 Course Code CH1642

Organic Chemistry Paper – III

The students will get an interesting idea about the preparation and properties mechanism of reactions of many organic conversions and of organic compound.

Semester VI Core Course –X Course Code – CH1643 Credit 4

PHYSICAL CHEMISTRY- PAPER III [

The main objective of the course is to study the basics of electrochemistry and its importance to modern industry and technology. The course introduces various types of reactions and the different factors that determine the

rate of chemical changes. The course also includes the study of the phase diagrams of one, two and three component systems and elementary ideas of photochemistry.

Semester-VI Course Code –CH1651.4Credit-2Elective course

Lab course Semester 2

- Help the people to know about the use of computer and internet in learning
- Students know about the educational softwares ,information mining from internet using inflienet /NICNET
- Understand chemical structure drawing, visualization of molecules using Chemistry softwares

Semester I, III.IV Course codeCH1442

- can practice the qualitative inorganic analysis using microscale methods of a mixture containing two acidic and two basic radicals
- Can prepare inorganic complexes in normal laboratory conditions

Semester V course code CH1544 Inorganic Volumetric Analysis

- Able to prepare solutions of different concentrations
- Understand the method standardization and estimation of solutions
- Familiarise with the Quantitative analysis –Volumetric analysis

Semester V course code CH1545 Physical Chemistry Experiments

- Understand the experiment and calculation of molecular masses of solute using depression in freezing point method
- -Familiar with conductometric titrations and potentiometric titrations
- Able to find out the critical solution temperature of phenol-water system
- Able to find out the concentration of acids and bases using conductometric titrations
- Became familiar with potentiometric titrations

Semester VI course codeCH1644 Organic Chemistry Experiments

- Able to find out the melting and boiling points of different substances
- practice to prepare different organic compounds
- Understand the qualitative organic analysis

Semester VI course codeCH1645 Gravimetry

- Able to understand the difference between volumetric and gravimetric analysis
- Get practice on gravimetric analysis of different metals

Semester V & VI Course code CH1646 Chemistry project and factory visit CO1-

- Inculcate proficiency to identify appropriate Project.

Familiarise the preparation of project report and its presentation

Botany and Biotechnology

B.Sc Botany & Biotechnology is a two main course with **Botany** as core and **Biotechnology** as **Vocational Core** subject is designed to develop a scientific attitude and an interest towards the modern areas of biotechnology in particular and life science in general. It is aimed to get an aptitude in Biotechnology without losing the importance of basic science such as Botany. It will help the students to become critical and curious in their outlook. The courses are designed to impart the essential basics in Botany, Zoology, Chemistry, Biochemistry and Biotechnology.

Semester I

Foundation Course

BB 1121 Methodology and Perspective of Biotechnology

The students are given awareness on basic science, how to apply statistics and IT in Biological science, about biotechnology and its application in various fields etc.

Core Course

BB1141 Phycology, Mycology, Lichenology & Plant pathology

Imparts basic knowledge about lower plants such as algae, fungi, Lichen and the diseases caused by these organisms in plants. This will give an account on the life cycle, habitat, anatomy, classification and its involvement in the life cycle of other members of living world.

Complementary Course

BB1131 Introduction to Biochemistry

To give basic awareness about the concepts and physical aspects in biochemistry and to develop analytical skills in students in order to prepare them to use instruments.

Core Course Vocational

BB1171 Microbiology

The course is destined to give a thorough and basic understanding on various aspects of classical Microbiology, which forms the basis of any biotechnology application. Students were expected to master the major theoretical and practical expertise from this course.

Semester II

Foundation Course

BB1221 Biophysics & Instrumentation

Main outcome is to introduce the physical aspects and bioenergetics of the living system and to familiarize the principle and working of various instruments used in biotechnology experiments. The students will be able to understand the fundamentals of biophysics and the general instrumental techniques used in biotechnology.

Core Course

BB1241 -Environmental Studies

Students can acquire a basic understanding about the structure function of the environment and its interaction with the living systems. It will impart the geographical distribution of plants and the impact of human intervention in the environment and the delicate balance of various factors in the environment. It gives an idea about the various types of biodiversity and the influence of environmental pollution on the biodiversity.

Core Course

BB1242 Practical Botany- I

This course gives students chance to do Botany practical work related to the theory papers studied during first two semesters.

Complementary Course

BB1231 General Biochemistry

To familiarize the students with the building blocks of living matter, the biomolecules, their structure, components, reactions, their derivatives, biological significance and the basic tests to identify them.

Core Course Vocational

BB1271 Microbial Metabolism, Genetics and Diseases

Main outcome of the course is to get an in-depth knowledge in Microbial metabolism, microbial genetics, and microbial diseases. This knowledge is very important as far as Biotechnology is concerned. The students are expected to master all microbial related techniques to pursue studies in biotechnology.

Core Course Vocational

BB1272 Biotechniques- I (Practical of BB1171 & BB1271)

This course will equip the students with the practical aspects of the theory papers that they have learned in Semester I and II.

Semester III

Core Course

BB1341 Angiosperm Anatomy and Reproductive Botany

The course is aimed to bring the basic concept and understanding about the anatomy of the flowering plants and its relationship to the physiology and environmental adaptability of the plants. It also gives a basic idea on the reproduction and development of the flowering plants and its adaptation to suit to its environment.

Core Course

BB1342 Bryology, Pteridology, Gymnosperms & Paleobotany

Aim and Objective: Students are taught about lower plants like Bryophytes, Pteridophytes, Gymnosperms, etc which are extant and extinct.

Complementary Course

BB1331 Physiological aspects in Biochemistry

The course is intended to introduce the student to the basics of physiological aspects and to familiarize the students with the basics of human nutrition.

Core Course Vocational

BB1371 Protista and Animal Diversity

This course is designed in such a way to get a basic insight into the diversity of animals and its morphological and physiological adaptations suited to their ecosystems.

Core Course Vocational

BB1372 Animal Physiology and Anatomy

This course will give very fundamental and essential information about the anatomy and functioning of the various types of cell, tissues and organs in selected model organisms.

Semester IV

Complementary Course

BB1431 Metabolism

The course aims at providing an overview of energy production by explaining the general principles of cellular energy metabolism and schematizing the different metabolic pathways.

Complementary Course

BB1432 Practical Biochemistry

This aims to check the understanding of students regarding the practical aspects of Biochemistry that they have studied during the four semesters.

Core Course

BB1441 Horticulture, Mushroom Cultivation & Marketing

This course gives an idea about the application of biological science particularly plant science in business generations and self-employment. This focuses on the horticulture, Mushroom cultivation, its marketing and also in forest depended economy and its impact on society.

Core Course

BB1442 Cell Biology, Plant Breeding and Evolutionary Biology

This course will provide a basic understanding in cell biology, plant breeding and evolution, which is needed as a student of biology and can supplement in understanding and pursuing studies in Biotechnology.

Core Course

BB 1443 Practical Botany II

This practical pertains to the theory aspects that have been taught during third and fourth semesters.

Core Course Vocational

BB1471 Molecular Biology

Molecular biology is basis of modern biology and biotechnology. This course imparts a very essential foundation for the proper understanding of life at molecular level, which is essential for further studies related to genetic engineering, immunology and other modern applied aspects of biology.

Core Course

BB1472 Immunology

To give a basic training to the students of Biotechnology on immune system, immunology and immunology related techniques. Training in this course will create an interest in immunology and is essential for further studies in Biotechnology.

Core Course Vocational

BB1473 Biotechniques II

(Practical of BB1371, BB1372, BB1471 & BB1472)

This course will equip the students with the practical aspects of the theory papers that they have learned in Semester III and IV.

Semester V

Core Course

BB1541 Plant Physiology

This course gives basic information on plant physiology and the related biochemical and biophysical aspects to the students of Biotechnology. This course will equip the students to understand the functions of the plant system on biophysical and biochemical approach.

Core Course

BB1542 Angiosperm Morphology and Systematic Botany

The course is designed to give a basic awareness in systematic botany and morphology of higher plants and the course should generate interest on students to pursue continuous studies in systematic botany.

Core Course Vocational

BB1571 Recombinant DNA Technology

To give a basic training to the students of Biotechnology on recombinant DNA and related techniques. Training in this course will create an interest in genetic engineering and is essential for further studies in Biotechnology.

Core Course Vocational

BB1572 Plant Biotechnology

This course is designed to impart basic knowledge in the applied aspects of plant biotechnology for the improvement of agriculture and plant based industries. It will give an outline of plant tissue culture cell culture and plant genetic transformation methods, which will help the students to pursue further studies in this aspects.

Core Course Vocational

BB1573 Animal Biotechnology

To introduce the basics of the subject of animal biotechnology and its applications to the students in an attractive and simple manner

Open course for Non –Biotechnology students

BB1582 Food & Dairy Biotechnology

This course is for non biotechnology students. Students from other disciplines are also can undergo this course to get basic knowledge in the application of Biotechnology in food processing, food spoilage, food preservation and dairy industry.

Semester VI

Core Course

BB1542 Genetics

This course is supposed to supplement the basic knowledge in genetics in general and Mendelian genetic in particular. This is essential to study the various branches of biology like molecular biology and gene technology.

Core Course

BB1642 Economic Botany, Ethnobotany & Medicinal Botany

This course gives awareness about the importance of Medicinal plants and its useful parts, economically important plants in our daily life and also about the traditional medicines and herbs, and its relevance in modern times.

Core Course

BB1643 Practical Botany III

This course relates to practical aspects of what learnt during 5th and 6th semesters.

Core Course Vocational

BB1671 Food and Industrial Biotechnology

The students will be introduced to the industrial application of Food Biotechnology and Bioprocess technology through this course. Students should be trained to understand commercial importance of biotechnology through its industrial aspects.

Core Course Vocational

BB1672 Environmental Biotechnology

This course is aimed to bring an enthusiasm on environmental protection and it should give the contribution of biotechnology techniques to keep the environment clean and healthy. As well it should highlight the economic aspects and bioprocess technology in the application of biotechnology in protecting the environment from pollution.

Elective course for Biotechnology students

BB1683 Food & Dairy Biotechnology

This course is for non biotechnology students. Students from other disciplines are also can undergo this course to get basic knowledge in the application of Biotechnology in food processing, food spoilage, food preservation and dairy industry.

Core Course Vocational

BB 1673 Biotechniques III (Practical of BB1571, BB1572, BB1573, BB1671 & BB1672)

This course will equip the students with the practical aspects of the theory papers that they have learned in Semester V and VI.

File Description:

- any additional information
- Past link for Additional information
- COs for all courses (exemplars from Glossary)