

**SREE NARAYANA COLLEGE
SIVAGIRI,VARKALA**

**PROGRAMME AND COURSE
OUTCOMES**

PROGRAMME OUTCOMES

B.A History

- Understand the background of our religion, customs, institutions, administration and the existing social, political, religious and economic conditions of the people.
- Analyze relationship between the past and the present and develop practical skills helpful in the study and understanding of historical events.
- The study of history helps to impart moral values.
- History installs the feeling of patriotism in the hearts of the pupils.
- Develop interests in the study of history and activities relating to history, visit places of historical interests, archaeological sites, museums and archives and play active roles in the activities of the historical organizations and associations.

BSc Botany

- The students are expected to acquire knowledge of plants and understand natural phenomenon, manipulation of nature and environment in the benefit of human beings.
- To develop ability for the application of the acquired knowledge to improve agriculture & other related fields.
- To enrich the students with the latest developments in the plant world

BSc Geology

- Geology curriculum program is indented to provide expert education for students who wishes to choose his career in Oil exploration mining and mineral exploration field .
- Educate students in the basic methodology and philosophy of Earth science
- Create ability to collect and analysis geological data
- Understanding the functioning of Hydrosphere lithosphere And Atmosphere
- Understanding the physical processes that shaped the Earth surface.
- Understanding the regional geology and geology of Kerala and India.

MSc Geology

- Understanding the physical and geomorphological conditions of Earth
- Understanding crystal systems and their mineralogical expression and economic importance of mineral
- Understanding how rocks are formed and petrol logical significance and apply this knowledge in sedimentology, Metamorphic petrology and igneous petrology
- Understanding Stratigraphy and palaeontology and apply this knowledge to the evolution of life on earth.

MSc. Physics

The post-graduate program in Physics helps in understanding the basic concepts of physics particularly concepts in classical mechanics, quantum mechanics, statistical mechanics and electricity and magnetism to appreciate how diverse phenomena observed in nature follow from a small set of fundamental laws through logical and

mathematical reasoning. Also, help to understand the basic concepts of certain sub fields such as nuclear and high energy physics, atomic and molecular physics, solid state physics, and general theory of relativity, nonlinear dynamics and complex system. Through this post-graduate program, students gain thorough subject knowledge to teach it at college as well as school level and viewing physics as a training ground for the mind developing a critical attitude and the faculty of logical reasoning that can be applied to diverse fields.

BSc. Physics

The undergraduate program in Physics help to create an academic base that respond to the needs of the students to understand the basics of Physics and its ever evolving nature of applications in explaining the entire observed natural phenomenon as well as predicting the future applications to the new phenomenon with a global perspective. The student graduating with B.Sc Physics degree should be able to acquire a fundamental/systematic or coherent understanding of the academic field of Physics, its different learning areas and applications in basic physics like Condensed matter Physics, Atomic and Molecular Physics, Mathematical Physics, Material science, Nuclear and Particle Physics, Analytical dynamics, and its linkages with related disciplinary areas / subjects like Chemistry, Mathematics etc. Demonstrate the ability to use skills in physics and its related areas of technology for formulating and tackling physics-related problems and identifying and applying appropriate physical principles and methodologies to solve a wide range of problems associated with physics.

BSc Zoology

- Develop insight and improve their analytical communication and professional skills
- Understanding the morphology and functional characteristics at cellular and sub-cellular (molecular) level
- Enhancing the technical skills for experimental purposes
- Demonstrate and apply the fundamental knowledge of the basic principles of major fields of Zoology
- Apply knowledge to solve the issues related to animal sciences
- Take appropriate steps towards conservation of endemic and endangered animal species

B.Com Finance

- To provide well trained professionals to meet the requirements of various industries including banking, insurance, transport and warehousing.
- To equip students with skills to meet job requirements in fields like finance, marketing, HRM and over all administration .
- Enhance capability of the students to make decisions at personal & professional level
- The program inculcate students with entrepreneurial skills so that they can independently start up their own business venture.
- Students gain theoretical and practical knowledge in accounting, cost accounting and banking to meet industry requirements.
- Students can excel in different professional exams like C.A. , C S, CMA, NET, MPSC, UPSC

- To enhance the communication, decision making, innovative and problem solving skills in students .
- Students can also gain practical skills to work as accountant, auditor , tax consultant and other financial supporting services.
- Students are equipped with research skills in the field of banking and finance.

M.Com International Trade

- Understand the procedures of international trade and evaluate the implications of international trade
- Understand the legal procedure and regulations of international trade, Intellectual Property Rights, patent and copyrights
- Understand and recognize the importance of cross-cultural Business communication in the International Trade practices
- Acquire Knowledge of statistical concepts and analyze international trade related data set and Skill in the application of procedures for statistical inference
- Acquire the knowledge and skill required to conduct a focused research relating to international trade related problems
- Acquire the knowledge and skills relating to the hedging of international risks and risk management tools
- Understand the status of the present international taxation proceedings and applications in international trade

B.Com Hotel Management & Catering

- Students are equipped with professional management techniques in the hospitality sector including hotel administration, accounts, marketing, housekeeping, front office, food and beverage management, catering and maintenance.
- The course imparts practical training and skills to become a professional in the hospitality sector.
- Enhance capability of the students to make decisions at personal & professional level
- The program inculcate students with entrepreneurial skills so that they can independently start up their own business venture particularly in the area of catering.
- Students gain theoretical and practical knowledge in accounting, cost accounting and banking to meet industry requirements.
- Students can excel in different professional exams like C.A. , C S, CMA, NET, MPSC, UPSC
- To enhance the communication, decision making, innovative and problem solving skills in students .

M.A. Economics

- To equip students with advanced knowledge of Applied Economics & Development Issues of Indian Economy in general and Kerala Economy in particular
- To familiarise the students with suitable alternative methods of knowledge on the basis of the heterogeneity of societies

- To develop right skills in students catering to the needs of the industry and policy makers,
- To make the students capable of addressing and solving the issues in the society and the economy by contextualising the knowledge they have acquired
- To create academic excellence through holistic education.

B.A Economics

- To provide students a well-founded education in Economics.
- Opportunity to pursue courses that emphasize quantitative and theoretical aspects of Economics.
- To provide a well-resourced learning environment for Economics.
- To focus on applied and policy issues in Economics.
- To provide programmes that allow the students to choose from a wide range of economic specialization;
- Develop an ability in students to present own analysis of the problems and issues in the language of an 'Economist'.
- To prepare our graduates for employment and further study as economists.

B.A. Malayalam

B.A Malayalam curriculum is intended

- To develop literary creativity among students.
- Through the study of fiction and poetry, students can develop their imagination especially in literature.
- To know about cultural studies and post-colonial theories of literature.
- To provide knowledge on the theory of cinema.
- To provide expert education for students who wishes to choose their career in Media, Cinema, Archeology, Historical Museums, Educational Institutions etc.
- To provide proper knowledge on the life of marginalized society like Dalit, Women etc. This helps them to attain human values which is fruitful throughout their life.
- To develop moral and cultural values and ethics among students.
- To develop the linguistic ability of students.
- To develop character and responsibility among students.

BSc Mathematics

- Mathematics is a powerful tool with many applications ,so in this programme students could acquire basic and deep knowledge in various branches of Mathematics .
- The resources gives sensible thinking, problem- solving capabilities and the capability to think in subjective ways. Provides knowledge in python and latex thoroughly.
- Applied Mathematics can lead to many career opportunities.

B.Sc Chemistry

- Upon completion of BSc Degree programme in Chemistry, students
- Develop scientific outlook scientific attitude and scientific temper
- Develop skill in experimenting , analyzing and interpreting data

- Develop research attitude and adopt scientific method of identifying, analyzing and solving research problems in an innovative way
- Apply physical and mathematical theories and principles in the context of chemical science
- Use chemistry related soft wares for drawing structure and plotting graphs
- Use instruments- potentiometer, conductometer, pH meter and colorimeter.
- Acquire skill in safe handling of chemicals including hazardous materials.
- Identify the ingredients in household chemicals, use them in a critical way
- Predict analytical procedures, compare experimental, theoretical and graphical methods of analysis
- Predict reaction mechanism in organic reactions
- Understand the terms, concepts, methods, principles and experimental techniques of physical, organic, inorganic and analytical chemistry
- Develop critical thinking and adopt healthier attitudes towards individual, community and culture through the course of Chemistry
- Become cautious about environmental aspects and impact of chemicals in soil, water and air and adopt ecofriendly approach in all frontiers of life
- Become responsible in consumption of natural resources and adopt measures for sustainable development.
- Visit Chemical factories and industries with scientific curiosity
- Develop writing skills and presentation skills using audio visual aids
- Compare and share knowledge in an interdisciplinary manner
- Inculcate spirit of originality, novelty, and necessity in scientific research
- Contribute to the academic and industrial requirements of the society
- Get motivated to higher studies - PG Degree in different branches of Chemistry, BEd Degree in Physical Science, and job opportunities in industrial and non industrial sectors
- Adopt safer life skills in a human friendly and ecofriendly way

M.Sc Analytical Chemistry

- Develop a better understanding of the current chemical principles, methods and theories with the ability to critically analyse at an advanced level.
- Acquire solid knowledge of classical and modern experimental techniques and interpretation of results; thereby acquire the ability to plan and carry out independent projects
- Develop the qualities of time management and organization, planning and executing experiments.
- Have a good level of awareness of the problems associated with health, safety and environment
- Understand how chemistry relates to the real world and be able to communicate their understanding of chemical principles to a lay audience and as well apply the knowledge when situation warrants.
- Learn to search scientific literature and databases, extract and retrieve the required information and apply it in an appropriate manner
- Demonstrate proficiency in undertaking individual and/or team-based laboratory investigations using appropriate apparatus and safe laboratory practices.

- Develop analytical solutions to a variety of chemical problems identified from application contexts; critically analyse and interpret qualitative & quantitative chemical information's.
- Set the scene to make use of the wide range of career options open to chemistry graduates.
- Achieve an understanding and appreciation of the crucial role of analytical chemistry and its impacts on life environmental and industrial processes



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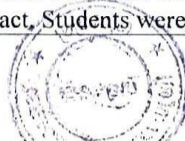
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COURSE OUTCOME

| Outcomes of the courses offered by the Department of Botany | | | |
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| BOTANY | | | |
| Semester | Course Code | Course Name | Course Outcome |
| Core BOTANY | | | |
| Semester I | BO 1141 | Angiosperm Anatomy Reproductive Botany and Palynology | Students get knowledge about anatomy of Angiospermic plants and its reproduction. Understand the significance of Palynological studies. |
| Semester II | BO 1221 | Methodology and perspective in plant science | Familiarize the students with fundamental characteristics of science and also develop skill for microscopic specimen preparation. |
| Semester III | BO 1341 | Micro biology, Phycology, Mycology, Lichenology & Plant Pathology | An awareness created among students about various microbes, structure and its economic importance. Students can identify various plant diseases, etiology of pathogens and control measures. |
| Semester IV | BO1441 | Bryology, Pteridology, Gymnosperms &Paleobotany | Students were able to make micro preparations. Can understand the economic and ecologic importance of lower group of plants. Better understanding of fossilization and importance of Paleobotany |
| Semester V | BO 1541 | Angiosperm morphology, Systematic botany, Economic botany, Ethnobotany and Pharmacognosy | Understand basic rules of Angiospermic classification and different types of classification. Students were able to make herbarium sheets. Identification of plants and their families. Better understanding of ethnobotanical and pharmacological significance of plants. |
| | BO 1542 | Environmental Studies and Phytogeography | Develop awareness about natural resources, its conservation and significance. Develop skill to identify polluted sites, major pollutants. Awareness about different types of disasters and strategies to overcome and reduce the impact. Students were able to |



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| | | | identify the importance of phytogeographical sites in India. |
| | BO 1543 | Cell biology, Genetics and Evolutionary biology | Students develop clear understanding of cell structure and cell organelles. Able to work out problems in classical genetics. Understand genetic diseases and their inheritance. |
| Semester VI | | | |
| | BO 1641 | Plant physiology and Biochemistry | Students get a clear understanding of the basic concept of physiology and biochemistry. Understand macromolecules and their role in cell metabolism. |
| | BO 1642 | Molecular biology, General informatics & Bioinformatics | Students understand various molecular aspects of gene expression and regulation of genes. Students will be familiarized to molecular Phylogeny, biological databases, sequence analysis etc. |
| | BO 1643 | Horticulture, Plant Breeding & Research Methodology | Students can devise an experimental design and carry out a project. Understand the procedure of plant breeding and can propagate plants through grafting, budding and layering. |
| Practical I | BO 1544 | Angiosperm anatomy, Reproductive Botany, Palynology, Methodology and Perspectives in plant science | Students get familiarized with anatomical preparations and distinguish various anatomical features of plants. Understand pollen morphoforms. Able to prepare buffers, measure pH, separate plant pigments and construct absorption spectrum of a sample. |
| Practical II | BO 1545 | Microbiology, Phycology, Mycology, Lichenology & Plant pathology, Bryology, Pteridology, Gymnosperms & Paleobotany | Students can be able to prepare micro preparations and identify thallus and reproductive structures of lower plant groups. Able to prepare fungicides like tobacco mixtures. Students get better understanding of fossilization and importance of paleobotany. |
| Practical III | BO1644 | Angiosperm morphology, Systematic Botany, Economic Botany, Ethnobotany, | Students get knowledge about different plants and their respective families. Understand ethnobotanical significance of plants. Develops deep |

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| | | Pharmacognosy and Environmental studies | understanding about biodiversity and importance of its conservation. |
| Practical IV | BO 1645 | Cell biology, Genetics, Plant physiology, Biochemistry, Molecular biology, Plant breeding and Horticulture | Students can prepare microslides of cell division and identify various stages of mitosis. Able to understand genetic disease and its inheritance. Familiarization of basic physiological practical procedures. Can devise an experimental design . |
| Project report and Field study | BO 1646 | Project | Develop an aptitude for research and helps to identify different areas of research. |
| Complementary Botany | | | |
| Semester I | BO 1131 | Microtechnique, Angiosperm Anatomy and Reproductive Botany | Provide an in-depth knowledge about various tissue systems and internal structure. Acquire basic knowledge about embryo development and pollen grains. |
| Semester II | BO 1231 | Phycology, Mycology, Lichenology, Bryology, Pteridology, Gymnosperms and Plant Pathology | Familiarize the students with life cycle and evolutionary significance of lower groups. Impart knowledge about diseases in plants. |
| Semester III | BO 1331 | Systematic Botany, Economic Botany Ethno Botany and Plant Breeding | Acquire knowledge about economic, ethnobotanical significance and pharmacognosy of plants. Understand different plant breeding techniques. |
| Semester IV | BO 1431 | Plant physiology, Ecology, Plant Biotechnology and Horticulture | Understand physiology of Photosynthesis and respiration. Generate awareness about horticultural techniques. Familiarize the students with plant tissue culture techniques. Impart knowledge about various ecosystem. |
| Practical I | BO 1432 | Botany complementary practical-1 | Develop skill in micropreparations. Identify plants and their families Understand economic and ethnobotanical importance of plants. |

Outcomes of the Courses offered by Department of Commerce

Course: BCOM FINANCE

| SEMESTER | COURSE CODE | COURSE NAME | OUTCOME |
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| \Sem I | Foundation Course I: CO 1121 | METHODOLOGY AND PERSPECTIVES OF BUSINESS EDUCATION | To create a basic awareness about the business environment and the role of business in economic development and provide a holistic, comprehensive and integrated perspective to business education |
| Sem I | Core Course I: CO 1141 | ENVIRONMENTAL STUDIES | To enable the students to acquire basic ideas about environment and emerging issues about environmental problems and give awareness about the need and importance of environmental protection |
| Sem I | Core Course II: CO 1142 | MANAGEMENT CONCEPTS AND THOUGHT | To equip learners with knowledge of management concepts and their application in contemporary organizations and facilitate overall understanding of the different dimensions of the management process. |
| Sem I | Complementary Course I: CO 1131 | MANAGERIAL ECONOMIC | To familiarise students with the economic principles and theories underlying various business decisions and equip the students to apply the economic theories in different business situations. |
| Sem II | Foundation Course II: CO 1221- | INFORMATICS AND CYBER LAWS | 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 and create an awareness about the cyber world and cyber regulations. |

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| Sem II | Core Course III: CO 1241 | - FINANCIAL ACCOUNTING | To familiarize the students with different methods of depreciation and equip the students to prepare the accounts of specialised business enterprises |
| Sem II | CORE COURSE IV: CO1242 | - BUSINESS REGULATORY FRAMEWORK | To provide a brief idea about the framework of Indian business Laws and enable the students to apply the provisions of business laws in business activities |
| Sem II | Complementary Course II: CO 1231 | - BUSINESS MATHEMATICS | To familiarise the students with the basic mathematical tools and impart skills in applying mathematical tools in business practice |
| Sem III | CORE COURSE V: CO 1341- | ENTREPRENEURSHIP DEVELOPMENT | To familiarize the students with the latest programmes of Government in promoting small and medium industries and impart knowledge regarding starting of new ventures. |
| Sem III | Core Course VI: CO 1342 - | ADVANCED FINANCIAL ACCOUNTING | To create awareness of accounts related to dissolution of partnership firms and acquaint students with the system of accounting for different branches and departments. |
| Sem III | Core Course VII CO 1343: | COMPANY ADMINISTRATION | To familiarize the students about the salient provisions of Indian Companies Act 2013 and acquaint the students with Management and Administration of Companies, Compliance requirements, investigation into the affairs of the company and Winding up procedure. |

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| Sem III | Elective Course I: Finance CO 1361.1 - | FINANCIAL MANAGEMENT | To familiarise the students with the conceptual framework of financial management and enable the students to understand the practical application of financial management |
| Sem III | Complementary Course III: CO 1331 | - E-Business | To provide students a clear-cut idea of e-commerce and e-business and their types and models and impart knowledge on the basics of starting online business |
| Sem IV | Core Course VIII CO 1441 - | INDIAN FINANCIAL MARKET | To provide a clear-cut idea about the functioning of Indian Financial Market in general and Capital market operations in particular. |
| Sem IV | Core Course IX: CO1442 | BANKING AND INSURANCE | To provide a basic knowledge about the theory and practice of banking and provide a basic understanding of Insurance business. |
| Sem IV | Core Course X: CO 1443 | - CORPORATE ACCOUNTING | .To create awareness about corporate accounting in conformity with the provisions of Companies Act, IAS and IFRS and enable the students to prepare and interpret financial statements of joint stock companies. |
| Sem IV | Elective Course II: FINANCE 38 CO1461.1- | PROJECT FINANCE | .To familiarise the students with the types of project appraisal, risk analysis, project financing costing and valuing and provide an overview of global project appraisal issues. |
| Sem IV | Complementary Course IV: CO 1431 - | BUSINESS STATISTICS | .To enable the students to gain understanding of statistical techniques those are applicable to business and enable the students to apply statistical techniques in business. |

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| Sem V | Core Course XI: CO – 1541: | FUNDAMENTALS OF INCOME TAX | To familiarize the students about the fundamental concepts of Income Tax and 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. |
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| Sem V | Core Course XII: CO 1542 - | COST ACCOUNTING | To familiarize the students with cost and cost accounting concepts and make the students learn cost accounting as a distinct stream of accounting |
| Sem V | Core Course XIII CO 1543 | : MARKETING MANAGEMENT | To provide an understanding of the contemporary marketing process in the emerging business scenario and study various aspects of application of modern marketing techniques for obtaining a competitive advantage in business organizations. |
| Sem V | Open Course: 1 – CO 1551.2 | PRINCIPLES OF MANAGEMENT | To provide knowledge on the fundamentals of management principles and functions. |
| Sem V | Elective Course III: Finance CO 1561.1 | FINANCIAL SERVICES IN INDIA | To familiarize the students with the structure and functioning of financial service sector in India. |
| Sem VI | Core Course XIV: CO 1641 | AUDITING | To provide students the knowledge of auditing principles, procedures and techniques in accordance with current legal requirements and professional standards and To familiarize students with the audit of Companies and the liabilities of the auditor. |

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| Sem VI | Core Course XV: CO 1642: | APPLIED COSTING | To acquaint the students with different methods and techniques of costing and enable the students to apply the costing methods and techniques in different types of industries |
| Sem VI | Core course XVI: CO 1643 - | MANAGEMENT ACCOUNTING | To enable students to acquire sound knowledge of concepts, methods and techniques of management accounting and make the students develop competence with management accounting usage in managerial decision making and control. |
| Sem VI | CO 1651.2 | STRATEGIC MANAGEMENT | To give basic understanding about the concepts related to strategic management and to acquaint the students with the managerial tasks associated with implementing corporate strategy. |
| Sem VI | Elective course IV: Finance CO1661.1- | -TAXATION LAW AND ACCOUNTS | To enable the students to understand the provisions of Income Tax for computing Total Income and Tax liability of various persons and To familiarise the students with the procedure of Income Tax Assessment. |

Outcomes of the Courses offered by Department of Commerce

Course: B.COM HOTEL MANAGEMENT AND CATERING

| SEMESTER | COURSE CODE | COURSE NAME | OUTCOME |
|----------|--------------------------------------|--|--|
| Sem I | Foundation Course I: HM 1121 | METHODOLOGY AND PERSPECTIVES OF BUSINESS EDUCATION | To create a basic awareness about the business environment and the role of business in economic development and provide a holistic, comprehensive and integ perspective to business education |
| Sem I | Core Course I: HM 1141 | ENVIRONMENTAL STUDIES | To enable the students to acquire basic ideas about environment and emerging issues about environmental problems and give awareness about the need and importance of environmental protection |
| Sem I | Vocational Course I: HM 1171- | FRONT OFFICE OPERATIONS | To enable the students to acquire basic knowledge of Lod ging Industry and provide knowledge about the Front Office Operations and Pro moting sales. |
| Sem I | Compleme ntary Course I: HM 1131- | FUNDAME NTALS OF HOUSE KEEPING | . To impart students' basic knowledge about House keeping, cleaning equipment And cleaning agents and provide knowledge about the Accommodation operation and to highlight the scope as a House keeping manager. |

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| Sem II | Foundation Course II: HM 1221- | INFORMATICS AND CYBER LAWS | 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 and create an awareness about the cyber world and cyber regulations. |
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| Sem II | Core Course III: HM 1241 | - FINANCIAL ACCOUNTING | To familiarize the students with different methods of depreciation and equip the students to prepare the accounts of specialised business enterprises |
| Sem II | Vocational Course II: HM 1271- | : Front Office Management | To familiarise the students with the front office management system and enable the students to develop the skill for the maintenance of various front office records. |
| Sem II | Complementary course II: HM 1231 | - House Keeping Operations | To impart specific knowledge on Linen rooms, sewing room and provide practical exposure on flower arrangement and interior decoration. |
| Sem III | Core Course III : HM 1341- | MANAGEMENT CONCEPTS AND THOUGHT | To equip learners with knowledge of management concepts and their application in contemporary organizations and facilitate overall understanding of the different dimensions of the management process |
| Sem III | Core Course IV: HM1342- | ADVANCED FINANCIAL ACCOUNTING | To create awareness of accounts related to dissolution of partnership firms and acquaint students with the system of accounting for different branches and departments. |

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| Sem III | Vocational Course III: HM 1371 | - FOOD PRODUCTION THEORY AND PRACTICE | To enable the student to acquire basic knowledge of food production and give basic knowledge on organization & Layout of Kitchen |
| Sem III | Vocational Course IV: HM 1372- | FOOD AND BEVERAGE SERVICE | To give basic knowledge on Hotel & Catering Industry and give in-depth knowledge on the organization & Staffing in F & B Service |

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| Sem III | Complementary Course III: HM1331 | - E-BUSINESS | To provide students a clear-cut idea of e-commerce and e-business and their types and models and impart knowledge on the basics of starting online business |
| Sem IV | Core Course V: HM1441- | BUSINESS REGULATORY FRAMEWORK | To provide a brief idea about the framework of Indian business Laws and enable the students to apply the provisions of business laws in business activities |
| Sem IV | Core Course VI: HM 1442 | BANKING AND INSURANCE | To provide a basic knowledge about the theory and practice of banking and provide a basic understanding of Insurance business |
| Sem IV | Vocational Course V: HM 1471- | ADVANCED FOOD PRODUCTION THEORY AND PRACTICE | To give in-depth practical training on Quantity food Institutional and Industrial cooking production. |

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| Sem IV | Vocational Course VI: HM 1472- | ADVANCED FOOD AND BEVERAGE SERVICE | Different alcoholic beverages, cocktails and spirits and Managing F&B outlets |
| Sem IV | Complementary Course IV: HM 1431 - | BUSINESS STATISTICS | To enable the students to gain understanding of statistical techniques those are applicable to business and enable the students to apply statistical techniques in business |
| Sem V | Core Course VII: HM 1541: | ENTREPRENEURSHIP DEVELOPMENT | To familiarize the students about the fundamental concepts of Income Tax and 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. |

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| Sem V | Core Course VIII : HM 1542 - | COST ACCOUNTING | To familiarize the students with cost and cost accounting concepts and make the students learn cost accounting as a distinct stream of accounting |
| Sem V | Core Course IX HM 1543 | : MARKETING MANAGEMENT | To provide an understanding of the contemporary marketing process in the emerging business scenario and study various aspects of application of modern marketing techniques for obtaining a competitive advantage in business organizations. |

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| Sem V | Vocational Course VII: HM 1571 | - HOTEL FACILITY PLANNING | . To enable the students to acquire basic knowledge on planning and designing a hotel and acquaint with role and importance of maintenance department in hotel industry |
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| Sem V | Vocational Course VIII: HM 1572 - | HOTEL LAW | To provide knowledge on Hotel Laws relating to Guest relationship and Various legislations and regulations related to Hotel Industry. |
| Sem V | Open course- I: HM 1551.1- | NUTRITION AND FOOD PRESERVATION | To impart orientation on principles of nutrition and Preservation of Food. |
| Sem VI | Core Course X: HM 1641 | AUDITING | To provide students the knowledge of auditing principles, procedures and techniques in accordance with current legal requirements and professional standards and To familiarize students with the audit of Companies and the liabilities of the auditor. |
| Sem VI | Core Course XI: HM 1642: | APPLIED COSTING | To acquaint the students with different methods and techniques of costing and enable the students to apply the costing methods and techniques in different types of industries |

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| Sem VI | Core course XII:HM1643 | MANAGEMENT ACCOUNTING | To enable students to acquire sound knowledge of concepts, methods and techniques of management accounting and make the students develop competence with management accounting usage in managerial decision making and control. |
| Sem VI | HM 1651.2 | STRATEGIC MANAGEMENT | To give basic understanding about the concepts related to strategic management and To acquaint the students with the managerial tasks associated with implementing corporate strategy. |
| Sem VI | Vocational Course IX : HM 1671 | - BAKERY AND PATISSERIE THEORY AND PRACTICE | To give exposure to production of Bread, Pastry cream and familiarize with various commodities |
| Sem VI | Vocational Course X: HM 1672 | NUTRITION AND FOOD PRESERVATION | To impart orientation on principles of nutrition and Preservation of Food |

Outcome of the Courses Offered by the Department of Chemistry

Course: BSc Chemistry

| Semester | Course Code | Course Title | Course Outcome |
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| Semester 1 | CH1141 | Inorganic Chemistry I | 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 and also about environmental pollution |
| Semester 2 | CH1221 | Methodology and Informatics | the student is familiarized with the methodology and perspectives of Science and the importance of Science in the development of culture. An awareness about the evolution of Chemistry, basic elements of research in Chemistry, role of Informatics. Learns the elementary aspects of analytical principles and safety measures in the Laboratory |
| Semester 3 | CH1341 | Inorganic Chemistry II | Lays a 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 lays a strong foundation in the area of nuclear chemistry |
| Semester 4 | CH1441 | Organic Chemistry I | 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, stereo chemical aspects, photochemical reactions and aromaticity. |
| | CH1442 | Lab Course I Inorganic Qualitative Analysis | Students learn to determine the ions in a mixture. |

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| Semester 5 | CH1541 | Physical Chemistry I | 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. |
| | 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. |
| | 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. |
| | CH1544 | Lab Course II Inorganic Quantitative Analysis | The students get an in-depth knowledge on how quantitative analyses are done. |
| | CH1545 | Lab Course III (Physical chemistry experiments) | They are introduced to various methods used for the determination of physical constants. |
| | CH1551.1 | Essentials of Chemistry | Students of other discipline get an opportunity to understand the structure of atoms. They will get an idea about radioactive elements and their properties. They also study the importance of polymers and also familiarizes the chemical in biological processes |

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| Semester 6 | CH1641 | 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. |
| | CH1642 | Organic Chemistry III | The students will get an interesting idea about the preparation and properties mechanism of reactions of many organic conversions and of organic compound. |
| | CH1643 | Physical Chemistry 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. |
| | CH1644 | Lab Course IV (Organic chemistry experiments) | Students learn to analyse organic compounds` |
| | CH1645 | Lab Course V (Gravimetry) | Gravimetric method used for quantitative analysis is introduced to students |
| | CH1661.4 | Biochemistry | Demonstrate an understanding of fundamental biochemistry principles, including topics specific to chemistry and biochemistry. |
| | CH1646 | Project | To inculcate proficiency to identify appropriate research topic and presentation |

M.Sc ANALYTICAL CHEMISTRY

| Semester | Course Title | Course code | Course Outcome (Expected Course Outcomes Upon completion of this course, the students will be able to) |
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| 1 | Inorganic Chemistry I | CL 211 | 1. employ crystal field theory in analysing the splitting of d orbitals in octahedral, tetragonal, square planar, tetrahedral, trigonal bipyramidal and square pyramidal fields, calculate Crystal Field Stabilization Energy and Interpret Octahedral |

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| | | | <p>Site Stabilization Energy.</p> <ol style="list-style-type: none"> 2. apply Jahn-Teller theorem and demonstrate evidence for JT effect, static and dynamic JT effect. 3. illustrate MOT for octahedral and tetrahedral complexes with and without pi bonds and construct MO diagrams. 4. critically evaluate data from a variety of analytical chemistry techniques and apply knowledge of the statistical analysis of data. 5. interpret complexometric titrations, redox titrations, gravimetric titrimetry and titrations in non-aqueous solvents. 6. apply TG, DTA and DSC in the study of metal complexes. 7. explain the functioning of the frontier materials in inorganic chemistry like Solid Electrolytes, Solid oxide fuel cells, Rechargeable battery materials, Molecular materials and fullerenes. 8. explain the preparation, properties and structure of isopoly acids of Mo, W and V and heteropoly acids of Mo and W. 9. explain preparation and properties of xenon fluorides, and noble gas compounds, aluminosilicates, zeolites and silicones and identify the importance of shape selectivity. 10. identify the chemical processes occurring naturally in earth's atmospheric, aquatic and soil environments and evaluate the impacts of human perturbations to these processes. |
| 1 | Organic Chemistry I | CL 212 | <ol style="list-style-type: none"> 1. write down the IUPAC name of polycyclic, spirocyclic and heterocyclic compounds and draw the structures from the IUPAC name of these compounds. 2. determine R and S, P and M, E and Z configuration of compounds with chiral centres, biphenyls, allenes, spiranes and draw the configurations in dash and wedge formula, or zig-zag configurations. 3. detect prochirality in a compound and explain relevance of prochirality. 4. explain chiral centre, chiral axis and chiral plane with examples, stability of conformations, stereoselective and stereospecific reactions. 5. calculate Cotton effect of a compound from its structure and configuration. 6. explain different methods for generation of free radical and different types of free radical reactions- Predict the products in a free radical reaction. 7. describe different types mechanism of substitution, elimination, hydrolysis and addition reactions. 8. differentiate the rate, mechanism and stereochemistry influenced by solvent, substrate structure, intermediate stability. 9. predict the products or reactants or reagents in selected types of reactions. 10. design the mechanism of selected reactions. |
| 1 | Physical Chemistry I | CL 213 | <ol style="list-style-type: none"> 1. outline the development of quantum mechanics and its tools and apply them in determining the wave functions and energies of moving particles. 2. recognize the nature of adsorption and propose theories and choose theoretical and instrumental methods of measurements |

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| | | | <p>of surface property.</p> <ol style="list-style-type: none"> understand theory and mechanism of catalytic action. correlate thermodynamic properties and apply them in systems. understand theories, mechanism and, kinetics of reactions and solve numerical problems. identify point groups and construct character table and predict hybridisation and spectral properties of molecules. |
| 2 | Inorganic Chemistry II | CL 221 | <ol style="list-style-type: none"> obtain the term symbols of d^n system and determine the splitting of terms in weak and strong octahedral and tetrahedral fields. explain the correlation diagrams for d^n and d^{10-n} ions in octahedral and tetrahedral fields and interprets electronic spectra of complexes. applies magnetic measurements in the determination of structure of transition metal complexes. relates crystalline structure to X-ray diffraction data and the reciprocal lattice and explains the diffraction methods explains crystal defects . elaborates the structure of selected compounds of AX, AX_2, AmX_2, ABX_3 and spinels. explains the electronic structure of solids using free electron theory and band theory. understands the differences in semiconductor and dielectric materials and their electrical and optical properties explain the structure and reactions of $S-N$, $P-N$, $B-N$, $S-P$ compounds and boron hydrides. analyse the topological approach to boron hydride structure and estimates styx numbers and apply Wade's rules in borane and carboranes. identify the electronic configurations and term symbols of lanthanides and actinides. sketches the shapes of f orbital and shows their splitting in cubic ligand field. elaborates the importance of the beach sands of Kerala and their important components. |
| 2 | Organic Chemistry II | CL 222 | <ol style="list-style-type: none"> discuss the fundamentals, operating principles and instrumentation of separation techniques. differentiate the principle and applications of phase transfer catalysis with examples. describe the various methods of determining reaction mechanisms and basic thermodynamic principles of organic reactions. explain the Hammett parameters of reaction and design an experiment to confirm the mechanism of a reaction. identify different types of rearrangement reactions, determine the product of the reaction applying migratory aptitude, and reproduce the evidences for the mechanism of the reaction. understand that the outcomes of pericyclic reactions may be understood in terms of frontier orbital interactions, correlation diagram, Möbius and Hückel approach. recall and define the various types of pericyclic reaction; define such terms as 'conrotatory', 'suprafacial'. predict and rationalise the outcomes of pericyclic reactions |

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| | | | <p>including stereospecificity, regioselectivity, and stereoselectivity.</p> <p>9. state the synthetic importance of the above cycloaddition and rearrangement reactions, and give disconnections of target compounds corresponding to these reactions.</p> <p>10. describe the fate of excited molecule based on Jablonoski diagram, predict the course of an organic photochemical reaction and identify the product with the type of functional group.</p> <p>11. propose synthetic routes to a variety of molecules, starting from simple precursors with correct stereochemistry and reagents of selected reactions.</p> |
| 2 | Physical Chemistry II | CL 223 | <p>1. apply quantum mechanical principles in solving both real and imaginary spherical harmonics systems-multi electron systems and analyse spectral lines.</p> <p>2. describe and explain the physical and chemical principles that underlie molecular structure determination techniques like microwave, vibrational, Raman and electronic spectroscopy.</p> <p>3. predict likely spectral characteristics of given molecular species, and be able to rationalise those characteristics on the basis of structural and electronic arguments.</p> <p>4. acquire knowledge of basics of statistical mechanics and compare statistical methods.</p> <p>5. understand and apply of theories of heat capacity.</p> <p>6. understand theories of electrolytes and electrochemical reactions.</p> <p>7 ascertain the application of electrochemistry in industrial fields.</p> <p>8. understand the theories and applications behind various types of analytical techniques in electrochemistry.</p> <p>9 acquire skill in solving numerical problems.</p> |
| 1 & 2 | Inorganic Chemistry Practicals I | CL 214 | <p>1. interpret data from an experiment, including the construction of appropriate graphs and the evaluation of errors.</p> <p>2. estimate volumetrically the concentration of Zn, Mg and Ni using EDTA and the volumetric estimation of Fe.</p> <p>3. estimate volumetrically the hardness of water and concentration of Ca in water samples using EDTA.</p> <p>4. estimate colorimetrically the concentration of Chromium – (using Diphenyl carbazide), Iron (using thioglycollic acid), Iron (using thiocyanate), Manganese (using potassium periodate), Nickel (using dimethyl glyoxime).</p> <p>5. carry out the preparation of the metal complexes Potassium trioxalatochromate (III), Tetraammoniumcopper (II) sulphate, Hexamminecobalt (III) chloride.</p> <p>6. record the UV spectra, IR spectra, magnetic susceptibility, TG, DTA and XRD of the complexes prepared.</p> |
| 1 & 2 | Organic Chemistry Practicals I | CL 215 | <p>1. interpret data from an experiment, including the construction of appropriate graphs and the evaluation of errors.</p> <p>2. determine the correct method for separation of a binary mixture and make the separated compounds in pure form.</p> <p>3. develop thin layer chromatogram of a compound and</p> |

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| | | | <p>determine its purity.</p> <ol style="list-style-type: none"> 4. separate two compounds by column chromatography. 5. utilize the synthetic procedures and reagents to convert a compound into another. Differentiate the products by spectroscopic methods. 6. use green chemical principles in the synthesis. 7. solve GC MS and LC MS of a compound to ascertain purity and identity, apply the basic principles learned through a practical example |
| 1 & 2 | Physical Chemistry Practicals I | CL 216 | <ol style="list-style-type: none"> 1. interpret data from an experiment, including the construction of appropriate graphs and the evaluation of errors. 2. construct the Freundlich and Langmuir isotherms for adsorption of acetic/oxalic acid on active charcoal/ alumina and determine the concentration of acetic/ oxalic acid 3. determine the rate constant, Arrhenius parameters, rate constant and concentration using kinetics 4. construct the phase diagram and determine the composition of an unknown mixture 5. construct the ternary phase diagram of acetic acid chloroform-water system and out the procedure in an unfamiliar situation to find out the composition of given homogeneous mixture. 6. construct the tie-line in the ternary phase diagram of acetic acid chloroform-water system 7. determine distribution coefficient using distribution law. 8. determine the equilibrium constant employing the distribution law. 9. determine the coordination number of Cu²⁺ in copperammonia complex. 10. determine K_f of solid solvent, molar mass of non-volatile solute, mass of solvent and composition of given solution. 11. determine K_T of salt hydrate, molar mass of solute, mass of salt hydrate and composition of given solution. 12. determine surface tension and parachor of liquids. 13. ascertain the relationship between surface tension with concentration of a liquid and use this to find out the composition of given homogeneous mixture. 14. determine the concentration of given strong acid/alkali. 15. determine the heat of ionisation of acetic acid. 16. determine the heat of displacement of Cu²⁺ by Zn. |
| 3 | Inorganic Chemistry III | CL 231 | <ol style="list-style-type: none"> 1. demonstrate knowledge of advanced content in the areas of inorganic chemistry such as in organometallic compounds, bioinorganic compounds, spectroscopic methods in inorganic Chemistry and nuclear chemistry. 2. examine the bonding in simple and polynuclear carbonyls with and without bridging and complexes with linear p donor ligands. 3. explain the structure and bonding of ferrocene and dibenzenechromium with the help of MO theory. 4. understand fundamental reaction types and mechanisms in organometallics and to employ them to understand selected catalytic processes in industry. 5. contrasts the thermodynamic and kinetic stability of complexes, analyses the factors affecting stability of |

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| | | | <p>complexes and explains the methods of determining stability constants.</p> <p>6. classifies ligand substitution reactions and explains its kinetics and various mechanisms.</p> <p>7. analyze the chemical and physical properties of metal ions responsible for their biochemical action as well as the techniques frequently used in bioinorganic chemistry such as oxygen transport, e-transfer, communication, catalysis, transport, storage etc.</p> <p>8. explain the principles of spectroscopic methods employed in inorganic chemistry and their applications in the study of metal complexes.</p> <p>9. demonstrate a knowledge of fundamental aspects of the structure of the nucleus, radioactive decay, nuclear reactions, counting techniques.</p> <p>10. evaluate the role of nuclear chemistry to find the most suitable measures, administrative methods and industrial solutions to ensure sustainable use of the world's nuclear resources.</p> |
| 3 | Organic Chemistry III | CL 232 | <p>1. describe and explain the physical and chemical principles that underlie molecular structure determination techniques such as UV-visible, IR, mass and NMR spectroscopy.</p> <p>2. apply knowledge of molecular structure determination using UV-visible, IR, mass and NMR spectroscopic techniques to identify and/or characterise chemical compounds from experimental data.</p> <p>3. calculate λ_{max} of a compound, apply IR frequency table to determine the functional groups present in the molecule, interpret mass spectrum of compound from fragmentation.</p> <p>4. predict likely spectral characteristics of given molecular species; solve the structures of unknown molecules using appropriate spectroscopic techniques.</p> <p>5. devise a 2 D NMR of a compound based on learned principles and solve the structure of a compound based on NMR data.</p> <p>6. discuss organic transformations with organometallic compounds and predict the products of the reactions.</p> <p>7. propose the retro synthetic pathways to a variety of molecules</p> <p>8. propose mechanisms for chemical reactions, given starting materials, reagents, conditions, and/or products.</p> <p>9. compare the reactions and mechanism and determine the products of a selected set of reactions; identify protecting group strategies.</p> <p>10. devise combinatorial method to create a library of compounds.</p> <p>11. give examples of stereoselective, regioselective and chemoselective reductions and oxidations.</p> |
| 3 | Physical Chemistry III | CL233 | <p>1. understand the theories of chemical bonding and their application with help of approximate methods predict the nature of orbitals and molecular spectra.</p> <p>2. compare MO and VBT.</p> <p>3. understand the properties of gases and liquids and the nature of the intermolecular forces in them.</p> <p>4. describe the principle behind the determination of surface</p> |

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| | | | <p>tension and coefficient of viscosity.</p> <p>5. describe and explain the physical and chemical principles that underlie molecular structure determination techniques like NMR, ESR, Mossbauer, NQR and PES spectroscopy.</p> <p>6. judge the degrees of freedom of systems and understand theories of irreversible thermodynamic systems.</p> <p>7. understand the quantum mechanical and non-quantum mechanical methods in computational chemistry, potential energy surface and basis functions.</p> <p>8. write the Z matrix of simple molecules.</p> <p>9. acquire skill in solving numerical problems.</p> |
| 4 | CHEMISTRY OF ADVANCED MATERIALS | CL 241 | <p>1. understand dimensions, synthesis, physicochemical properties of nanomaterials and its applications.</p> <p>2. understand and apply characterization tools for analysing nano structures.</p> <p>3. outline and recognize the types of polymerization, kinetics and mechanisms.</p> <p>4. understand the stereochemical aspects and methods for the determination of molecular weights of polymers.</p> <p>5. discuss the synthesis and applications of selected classes of speciality polymers.</p> <p>6. distinguish the types and important applications of smart materials.</p> |
| 4 | APPLIED ANALYTICAL CHEMISTRY | CL 242 | <p>1. explain the thermal and radiochemical methods used in analytical chemistry.</p> <p>2. explain the application of radio isotopes and the need for a safe disposal of nuclear waste.</p> <p>3. explain the principle underlying the methods used in food analysis.</p> <p>4. carryout the detection of food adulterants.</p> <p>5. explain the basic principles of forensic analysis.</p> <p>6. explain the nature of poisons and suggest possible antidotes.</p> <p>7. explain the importance of DNA finger printing and ballistics in forensic analysis.</p> <p>8. explain the methods of analysis and the principles involved in the analysis of biological fluids, enzymes, drugs and alcoholic beverages.</p> <p>9. explain the instrumentation and working principle of Flame spectrometry, AAS, AES, XPS and X-ray fluorescence.</p> |
| 3 & 4 | Inorganic Chemistry Practicals II | CL 234 | <p>1. interpret data from an experiment, including the construction of appropriate graphs and the evaluation of errors.</p> <p>2. estimate a simple mixture of ions (involving quantitative separation) by volumetric and gravimetric methods.</p> <p>3. perform COD, BOD, DO, TDS analysis.</p> <p>4. predict likely spectral characteristics of given metal complexes solve the structures of unknown metal complexes using appropriate spectroscopic techniques and magnetic measurements.</p> <p>5. analyse the XRD of simple substances.</p> <p>6. interpret TG and DTA curves.</p> |

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| 3 & 4 | Organic Chemistry Practicals II | CL 235 | <ol style="list-style-type: none"> 1. interpret data from an experiment, including the construction of appropriate graphs and the evaluation of errors. 2. predict likely spectral characteristics of given molecular species; solve the structures of unknown molecules using appropriate spectroscopic techniques. 3. develop paper chromatogram of a compound and determine its purity. 4. estimate quantitatively the Aniline, Phenol, glucose, Ascorbic acid and Aspirin in a sample. 5. estimate colorimetrically paracetamol, protein and ascorbic acid. 6. use green chemical principles in the synthesis |
| 3 & 4 | Physical Chemistry Practicals II | CL 236 | <ol style="list-style-type: none"> 1. interpret data from an experiment, including the construction of appropriate graphs and the evaluation of errors. 2. determine the strength of strong/ weak acids by conductometric titrations. 3. verify Onsager equation and Kohlraush's law conductometrically . 4. determine the activity and activity coefficient of electrolyte. 5. determine the concentration of a solution potentiometrically or pH metrically. 6. employ spectrophotometry in determining unknown concentration. 7. determine the viscosity of liquid mixtures and use this in determining the concentration of a component in a mixture. 8. determine the concentration of a liquid mixture using a refractometer. 9. determine the unknown concentration of a given glucose solution. |

THE OUTCOMES OF THE COURSES OFFERED BY THE DEAPRTMENT OF ECONOMICS

Course: PG ECONOMICS

| Semester | Course code | Course name | Outcome |
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| SEM-I | EC211 | MICRO ECONOMICS – I | <p>Co1: identify appropriate economic models (e.g., models of perfectly competitive markets and various market imperfections) and apply them to analyse and predict the behaviour of individuals and firms interacting in markets.</p> <p>Co2: articulate how individuals and society as a whole benefit or are harmed by economic markets.</p> <p>Co3: determine the profit maximizing price and quantity under perfect and imperfect competition by use of marginal analysis.</p> <p>Co4: understand the utility maximization and expenditure minimization problems.</p> |
| | EC212 | ECONOMICS OF GROWTH AND DEVELOPMENT | <p>Co1: understand that economic development is a multi-dimensional concept</p> <p>Co2: distinguish between the concepts of growth and development.</p> <p>Co3: identify problems faced by developing countries and suggest suitable policies for tackling them.</p> |

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| | | | Co4: apply the micro- and macro-theoretic tools learnt, for analyzing various development issues. |
| | EC213 | INDIAN ECONOMIC POLICY-I | Co1: students understand information on Indian economy. Co2: they analyse sectoral performance of the economy. Co3: students use relevant statistics to analyse the implication of various economic policies. Co4: they compare and evaluate the growth and development trends of the national as well as regional economies |
| | EC214 | QUANTITATIVE METHODS FOR ECONOMICS | Co1: to conduct exploratory data analysis using a range of graphical, tabular and numerical tools Co2: to provide a strong foundation in probability theory and statistical inference, especially emphasizing topics required for the study of econometrics. Co3: to develop essential data handling skills using standard spreadsheet software. Co4: create and conduct an empirical research project in economics |

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| SEM-II | EC221 | MICROECONOMICS II | <p>Co1: understand the efficiency condition of competitive equilibrium and its welfare implications.</p> <p>Co2: critically understand the fundamental theorems of welfare economics.</p> <p>Co3: compare the various criteria for evaluating social welfare and arriving at a social choice.</p> <p>Co4: analyze decision making of consumer under risk and uncertainty with special emphasis on insurance choice and provide tools for measuring risk and risk aversion.</p> <p>Co5: develop a critical understanding of second or third best.</p> |
| | EC222 | ECONOMICS OF SOCIAL SE CTOR AND ENVIRONMENT | <p>Co1: to understand environmental problems by using economic theory</p> <p>Co2: to analyze environmental problems in an alternative approach</p> <p>Co3: to manage common property effectively</p> <p>Co4: to apply environmental economics for finding solutions to serious environmental problems (e.g. Global warming, ozone depletion, air and water pollution) at different scales</p> |

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| | | | (global, regional and local). |
| | EC223 | INDIAN ECONOMIC POLICY-II | <p>Course outcome</p> <p>Co1: to introduce the basic concepts of economics to the students to enable them for further learning in Indian and Kerala economy.</p> <p>Co2: to equip the students with the basic idea for further learning.</p> <p>Co3: to help them to analyse the sectoral development that has taken place India as well as in Kerala economy.</p> |
| | EC224 | ECONOMETRICS AND RESEARCH METHODOLOGY | <p>Co1: to create an understanding among the students on basic econometric methodology.</p> <p>Co2: to familiarize students with the concepts and application of cross section, time series and panel data analysis</p> <p>Co3 : to equip students to analyse real life data with the help of econometric tools</p> <p>Co4 : to help students to increase their analytical power substantially along with enhancement of other cognitive skills.</p> |
| SEM-III | EC231 | MACROECONOMICS-I | Co1: to promote understanding of alternative perspectives with |

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| | | | <p>respect to macroeconomic theories and policies.</p> <p>Co2 :to enhance the analytical skills of the student towards understanding the</p> <p>Developments in the economy.</p> <p>Co3 :to introduce the student to the art of abstracting and building small models related to the macroeconomics.</p> <p>Co4 :to introduce the student to the economics of Keynes and further to is Im analytics. The various theories related to consumption, investment and demand for money are introduced in this section.</p> <p>Co5: gives a fair exposure to the importance of regulating the financial system, and draws attention to the limitations to policymaking in an open economy.</p> |
| | EC232 | INTERNATIONAL ECONOMICS -I | <p>Co1: understand basis of gainful trade between countries</p> <p>Co2: the students will be introduced the models of international trade</p> <p>Co3: students will be able to discuss and explain contemporary and day-to-day policy issues such as the effects of specific trade policy changes</p> |

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| | | | by a country, impact of us-china trade war, impact of BREXIT, trade protectionism, effects of free trade agreements, dumping and anticompetitive practices etc . |
| | EC233 | PUBLIC ECONOMICS | Co1: to understand the regulatory developmental responsibilities of government in a democratic country like India. Co2: to covers the theoretical and empirical dimensions of public goods and public choices, fiscal instruments and fiscal federalism with special reference to Indian context. Co3: covers the present fiscal management issues of India. |
| | EC203 | LABOUR ECONOMICS (OPTIONAL I) | Co1: to sensitize the students on the theoretical as well as empirical issues pertaining to labour market, wage theories, employment policies, trade unions etc. Co2: to develop skills for analyzing problems in the labour market and frame strategies for the smooth functioning of the labour market. |
| SEM-IV | EC241 | MACROECONOMICS-II | Co1: introduce the tradeoff between inflation and unemployment through short run |

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| | | | <p>and long run Phillips curve.</p> <p>Co2: describe the various growth theories and its policy implications</p> <p>Co3: differentiate the perspectives of new classical economics from real business cycle theories</p> <p>Co4: distinguish the assumptions and policy prescriptions of post-Keynesians from the new Keynesians.</p> <p>Co5: identify the role of central bank in macroeconomic policy on the basis of three equation models and enhances the ability of the student to comprehend the issues of financial instability and crisis through original articles</p> |
| | EC242 | INTERNATIONAL ECONOMICS-II | <p>Co1: To introduce to students the theories of international finance flows, determination of interest and exchange rates in interconnected economies, macroeconomic policies available to the government, and the nature of financial crises.</p> <p>Co2: To provide a framework for consistent reasoning about international flows of goods, factors of production, and financial assets, trade policy and monetary policy in open</p> |

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| | | | <p>economy.</p> <p>Co3: To understand the relevant connections between theory and real-world examples, through different policies, readings and case studies.</p> |
| | EC243 | FINANCIAL SECURITIES MARKET ANALYSIS | <p>Co1: To provide comprehensive study of the significance of Securities Market in modern financial system.</p> <p>Co2: To introduce the modern financial theory as applied to investment analysis, balanced with a consideration of new developments in the discipline, and of the application of both old and new theoretical perspectives to understand the current environment for financial investment decisions.</p> |
| | EC208 | DEMOGRAPHY (OPTIONAL-II) | <p>Co1: To understand the dynamics of population growth, theoretical side of population, demographic data sources and the link between demography and socio-economic development of a society.</p> <p>Co2: The course should enable the students to understand the theoretical, empirical and policy implications of demographic issues in a developing country like India</p> |

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| | EC244 | DISSERTATION | Co1: To develop research aptitude and skills among the students. |
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B A ECONOMICS

| Semester | Course Code | Course Name | Course Outcome |
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| Semester-I | EC 1141 | Introductory Microeconomics | Co1: To introduce the students basic concepts and theories in Microeconomics |
| Semester-II | EC 1241 | Intermediate Microeconomics | Co1: The course intends to give basic understanding of microeconomics |
| Semester-III | EC 1321 | Informatics for applied Econometrics | Co1: to introduce online resources which help students to improve teaching –learning experience Co2: to utilize these web resources to enhance their career and academics Co3: to covers estimation and diagnostic testing of simple regression model with computer software |
| | EC 1341 | Introductory Macroeconomics | Co1: to offer short introduction to macroeconomics Co2: to introduce multiplier and Keynesian theory Co3: introduces the students to ISLM analysis |
| SEM- IV | EC 1441 | Mathematical Methods for Economics | Co1: to provide the students an insight into the importance of |

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| | | | <p>Mathematical methods in economics.</p> <p>Co2: to familiarize them with the basic mathematical techniques used in economic analysis.</p> <p>Name of the course: intermediate macroeconomics</p> <p>Co1: to introduce students to the micro foundations of macroeconomics, inflation unemployment, economic growth and fiscal and monetary policies in an open economy.</p> |
| | EC 1442 | Intermediate Macroeconomics | To introduce students to the micro foundations of macroeconomics, inflation and unemployment, economic growth and fiscal and monetary policies in an open economy |
| SEM-V | EC 1541 | Methodology and perspectives of social science | <p>Co 1: to familiarize the students with the broad contours of Social sciences, specifically economics and its methodologies, tools and analysis procedures.</p> <p>Co2: to create an enthusiasm among students, incorporating various concepts and issues in economics.</p> |
| | EC 1542 | Statistical methods for economics | Co1: to familiarize the students with statistical tools and techniques and enable them to apply these tools in economics |

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| | EC1543 | Readings in political economy | <p>Co1: to introduces the student to different perspectives of political economy</p> <p>Co2: to familiarize the students on the principles of political economy and taxation, transformation of money into capital.</p> |
| | EC1544 | Economic growth and development | <p>Co1: to ensure that students begin to understand basic concepts of economic growth, development and thereby enable them to acquire multi-dimensional aspects of developmental issues.</p> <p>Co2: to convey knowledge about theoretical framework of growth and development under different schools of economic thought</p> <p>Co3: to impart knowledge about political institutions, the role of the state in economic development and problems that affect state governance.</p> |
| | EC1545 | International economics | <p>Co1: to understand the basic concepts and theories of international trade</p> <p>Co2: to enable students to have a basic understanding of the emerging trends, issues and policies in the field of international economic system.</p> |

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| SEM-V | EC 1551.2 | Human Resource Management | Co1: the course is aimed at providing basis for understanding the significance of human resource in the growth of our economy Co2: To providing the basis for life enrichment and career orientation. |
| SEM-VI | EC 1641 | Indian Economy | Co1: to provide an understanding about growth process in Indian economy, Sectoral aspects of the economy by focusing agriculture, industry and service sectors, relations of India with external sector and economic reforms |
| | EC 1642 | Banking and finance | Co 1: to familiarize the students with the basic concepts in banking and finance. Co 2: to develop a comprehensive knowledge on the role of banks in the operation of an economy. co 3: to enables them to know the operation of the indian financial system and activities in the financial markets. |

**THE OUTCOMES OF THE COURSES OFFERED BY THE DEPARTMENT OF
ENGLISH- FIRST LANGUAGE**

| SEMESTER | COURSECODE | COURSE NAME | OUTCOME |
|----------|--|-----------------|--|
| Sem I | EN 1111.1(B.A/BSC) EN1111.2(BCOM) EN 1111.3(BCOM HM) | Language Skills | To learn basic skills of Listening, Speaking, Reading and Writing. |

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| | EN 1121(BA/BSc) | Writings on Contemporary Issues | To have an overall understanding of the major issues in the contemporary world |
| Sem II | EN 1211.1(BA/Bsc) | Ability Enhancement Compulsory Course: Environmental Studies and Disaster Management | To understand environmental crisis and disaster management situations |
| | EN 1212.1(BA/BSc) EN 1211.2(BCom) EN 1211.3 (BCom HM) | English Grammar Usage and Writing | To have an appreciable understanding of English Grammar. |
| Sem III | EN1311.1(BA/BSc) EN 1311.3(BCom HM) | English for Career | To acquire the necessary language skills required in the competitive job market |
| | EN 1311.2 (BCom) | Business English | To understand the basic concepts of business communication |
| Sem IV | EN 1411.1(BA/BSC) EN 1411.2(BCom) EN 1411.3(BCom HM) | Readings in Literature | To understand and appreciate literary discourse |

THE OUTCOMES OF THE COURSES OFFERED BY THE DEAPRTMENT OF GEOLOGY

Course: B. Sc Geology

| SEMESTER | COURSE CODE | COURSE NAME | OUTCOME |
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| Semester I | GL 1141 | General Perspective of Geology | This course helps students to understand the functioning of the lithosphere, hydrosphere and atmosphere |
| Semester II | GL 1221 | Information Technology & Methodology in Earth Science | Educate students regarding the basic methods and philosophy used to conduct scientific research, particularly in the geological sciences |
| Semester III | GL 1341 | Crystallography | Educate students to understand different crystal forms for the formation of minerals with specific forms. |
| Semester IV | GL 1441 | Mineralogy | Impart a good working knowledge of physical and chemical characteristics of common minerals in the non silicate and silicate mineral groups |
| | GL 1442 | Crystallography and Mineralogy practical | This course helps to get knowledge on minerals, its identification by observation of hand specimen and thin sections through microscope, also provide a basic knowledge on crystal geometry |
| Semester V | GL 1541 | Structural Geology | Generate awareness on the role that lithospheric plates and their movement play in shaping the earth landmasses and ocean basins and the internal compositional and mechanical attributes of planet earth. |
| | GL 1542 | Stratigraphy and Paleontology | Develop an understanding and appreciation of geologic time and to evaluate data in the context of major events and trends in the evolutionary history of plants and animals from the record and ability to |

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| | | | reconstruct the biological traits of extinct organisms. |
| | GL 1543 | Stratigraphy of India | It helps to understand the regional geology of Kerala and India and geographic distribution, geological settings, reserves and resources of major earth resources |
| | GL 1544 | Igneous Petrology | It helps to distinguish igneous rocks from other types of rock based on their physical characteristics and mode of origin |
| | GL 1552 (Open Course) | Disaster Management | It helps to handle and prepare for various disasters |
| | GL 1641 | Sedimentary Petrology and Metamorphic petrology | It helps to distinguish Sedimentary and metamorphic rocks from igneous rock based on their physical characteristics and mode of origin and to understand and interpret how they form. |
| Semester VI | GL 1642 | Economic Geology | Create the ability to plan and manage earth resources and understand a range of issues related to man's exploitation of such resources. |
| | GL 1666.1 (Elective for Geology core) | Groundwater Investigation and Management | It helps to understand the Groundwater occurrence, distribution, exploration and different parameters of aquifers. |
| | GL 1643 | Structural Geology and Stratigraphy practical | Develop an understanding and appreciation of geologic structures and to evaluate data in the context of major events and trends in the evolutionary history. |
| | GL 1644 | Petrology practical | This course helps to understand on rocks, its identification by observation of hand specimen and thin sections through microscope. |
| | GL 1645 | Economic | Create the ability to |

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| | | Geology and Palaeontology practical | understand different types of ore minerals and understand different types of species previously existed in the Earth. |
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THE OUTCOMES OF THE COURSES OFFERED BY THE DEPARTMENT OF GEOLOGY

M.Sc. Geology

| SEMESTER | COURSE CODE | COURSE NAME | OUTCOME |
|-----------------|--------------------|--|--|
| Semester I | GL 211 | Physical Geology and Geomorphology | To understand why landscapes look the way they do, to understand landform history and dynamics and to predict changes |
| | GL 212 | Structural Geology and Engineering Geology | Generate awareness on the role that lithospheric plates and their movement play in shaping the earth land masses and ocean basins and the internal compositional and mechanical attributes of planet earth. |
| | GL 213 | Crystallography and Mineralogy | Educate students to understand different crystal forms for the formation of minerals with specific forms in advanced level using projection techniques, different instrument in the field of mineralogy, study of gem |
| | GL 224 | Practical I: Geomorphology, Structural Geology, Crystallography and Mineralogy | It helps to get practical knowledge on projection techniques in structural geology, crystallography and optical knowledge in mineralogy |
| Semester II | GL 221 | Environmental Geology | This course bring basic idea of managing geological and hydrogeological resources such as fossil fuels, minerals, water (surface and ground water), and land use. |
| | GL 222 | Sedimentology and Geochemistry | This course encompasses the study of modern sediments such as sand, silt, and clay, and the processes that result in their formation (erosion and weathering), transport, deposition and diagenesis. Geochemistry is the tools and principles of chemistry to explain the mechanisms behind major geological systems such as the Earth's crust and its oceans. |

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| | GL 223 | Remote Sensing and Geographic Information System Application | This course aims to provide in-depth understanding of remote sensing, satellite image analysis, Geographic Information System (GIS) and Global Positioning System and their applications in various fields. |
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| | GL 225 | Practical II: Sedi mentology, Remote Sensing and Survey | This course ai ms to provide in-depth understanding of areal i mage analysis, sedi mentary rock analysis and calculation of textural para meters from sedi me nts. |
| Se mester III | GL 231 | Stratigraphy and Paleontology | This course of Stratigraphy and Paleontology give idea in the field of (biological) validation of proxies and the development of ti me scales. |
| | GL 232 | Igneo us and Metamorphic Petrology | |
| | GL 233 | Hydrogeology | This course deals with the distribution and move ment of groundwater in the soil and rocks of the Earth's crust (co mmo nly in aquifers). |
| | GL 244 | Practical III: Igneous and Meta morphic Petrology and Hydrogeology | This course provides practical knowledge in Igneous and Meta morphic Petrology and Hydrogeology. |
| Se mester IV | GL 241 | Economic Geology | : Explore the field of geology that provides us with the raw earth materials we need. In this course, we'll learn the scope of economic geology, distribution and occurrence of economic mi nerals. |
| | GL 242 | Exploration Geology | This course helps to understand the uses of geophysical and Geochemical techniques to analyze geographic locations in search of natural resources. |
| | GL 243 | Applied Geology and Geostatistics | This course provides knowledge and understanding of a wide range of applied geoscience and geostatistics used to analyze and predict the values associated with spatial or spatiotemporal phe nomena |
| | GL 245 | Practical IV: Economic Geology, Exploration Geology and Applied Geology | This course helps to get practical knowledge in the field of Econo mic Geology, Exploration Geology and Applied Geology |
| | GL 246 | Dissertation | It gives grounding in the application of geological principles to a wide range of fields appropriate to the topic take n by the stude nt and i t helps to enlighten research aptitude of students. |

THE OUTCOME OF THE COURSES OFFERED BY THE DEPARTMENT OF HINDI

Course: Additional Language Hindi for B.A./ B.Sc.

| Semester | Course Code | Course Title | Outcome |
|----------|-------------|---------------------------------------|--|
| 1 | HN 1111.1 | Hindi Katha Sahitya | 1) Recollect the main works of the representative fiction writers 2) Understand the craft of the fiction writers 3) Analyse and evaluate the works of the fiction writers they studied 4) Understand how the resource language is used as a medium in creative writing. Hours distribution: 2 hours each for each text. |
| 2 | HN 1211.1 | Hindi Nibandh aur anya gadya Vidhayen | i) Recollect the main works of the prescribed writers ii) Understand the forms of various prose writing in Hindi iii) Analyse & evaluate the prose forms prescribed, with respect to the craft and the relevance |
| 3 | HN 1311.1 | Hindi Natak, Vyakaran tatha Anuvad | 1) critically appreciates play (2) Understands difference between spoken Hindi and written Hindi (3) Writes grammatically correct sentences in Hindi (4) Defines different parts of speech and identifies them in a given sentence (5) Translates simple passages from English to Hindi |
| 4 | HN 1411.1 | Hindi Kavita Evan Ekanki | 1) Appreciates ancient and modern Hindi poems. (2) Critically evaluates the contribution of Ancient & modern poets to the development of Hindi poetry (3) Elucidates key lines of poetry with reference to context (4) Appreciates and evaluates one act play with respect to craft and subject. |

Additional language Hindi for B.Com.

| Semester | Course Code | Course Title | Outcome |
|----------|-------------|---|---|
| 1 | HN 1111.2 | Hindi Gadya aur Vyavasayik Lekhan | 1) Appreciates prose writings in Hindi (2) Critically evaluates the contribution of prescribed writers of prose to Hindi literature (3) Differentiates various types of letters based on their style and components (4) writes personal, official and business letters in Hindi |
| 2 | HN 1211.2 | Hindi Kavita Anuvad aur paribhashik sabdavali | 1) understands the development of Hindi poetry from the Bhakti period to modern times (2) Translates simple passages from Hindi to English & vice versa (3) opens a career option that of a translator. |

Additional Language Hindi for B.Com.

| Semester | Course Code | Course Title | Outcome |
|----------|-------------|--|---|
| 1 | HN 1111.4 | Adhunik hindi Sahitya | 1) Appreciates the aesthetics of Hindi Poetry & prose (2) critically evaluates the contribution of Hindi poets to Hindi lit. (3) understands the difference between short story & essay, essay & sketch and also essay & autobiography (4) critically evaluates the contribution of prescribed short story writers, essayists to Hindi lit. |
| 2 | HN 1211.4 | Hindi Natak Vyavasayik Lekhan aur anuvad | 1) critically appreciates the play with respect to its style, craft and relevance (2) writes business letters in Hindi (3) Translates simple passages from Hindi to English and vice versa (4) opens a career option- that of a translator |

Outcomes of the Courses offered by Department Department of History

Course: BA History

| SEMESTER | COURSE CODE | COURSE NAME | OUTCOME |
|----------|-------------|--|---|
| I | HY 1141 | Course 1 – Methodology and Perspectives of Social Sciences. | <p>The course intends to familiarise the students with the broad contours of social sciences and its methodology.</p> <p>To familiarise the main concerns of social science disciplines to articulate the basic terminologies and theories prevalent in concerned disciplines. Critically read popular and periodical literature from a social science perspective.</p> |
| II | HY 1241 | Course 2- Cultural formation of the Pre-Modern World. | <p>To enable the students to engage with conceptual and general issues regarding culture and civilization of the ancient period.</p> <p>To inculcate an awareness among the students about the cultural heritage of mankind. To have a sound knowledge about changes that took place among the major cultures of world civilizations.</p> <p>To give an idea about the harmonious existence of the different sections of the people.</p> |
| III | HY 1321 | Course 3 Informatics | <p>To update and impart basic skills in informatics relevant to the emerging knowledge society and also to equip the students effectively to utilise the digital knowledge of their course.</p> <p>To review the basic concepts and functional knowledge in the field of informatics. To impart functional knowledge in a standard office package and popular utilities and to create awareness about social issues and concerns in the use of digital technology.</p> <p>To develop the skills to enable students to use digital knowledge resources in learning</p> |
| III | HY 1341 | Course 4 Evolution of Early Indian Society and Culture | <p>To analyze the salient features of pre-historic and proto-historic culture in India and to trace the evolution of Indian culture with special reference to the society and polity of ancient period.</p> <p>To familiarise the students with the heritage of India.</p> |
| IV | HY 1441 | Course 5 Medieval India : Socio – Cultural Processes | <p>Equip the students to have an idea on the social, cultural and administrative features during the medieval period.</p> |

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| | | | To familiarize the students, the processes that made the socio-cultural specificities possible and to make the students, aware of the linkage effect of this period in subsequent centuries. Feature: Political (Dynastic) history as such is avoided, however administrative system prevailed in the period concerned is included. |
| IV | HY 1442 | Course 6 History of Modern World – PART I | To familiarise the students about the changes in the history of the modern world and to analyse the agenda of the imperialistic powers in Latin America and Africa. To create an understanding among students about the liberal ideas and freedom struggles. |
| V | HY 1541 | Course 7 Major Trends in Historical Thought and Writings | To enable the students to understand the history of historical writings and to intellectually equip the students to evaluate the works in the light of new theories and concepts. |
| | HY 1542 | Course 8 Colonialism and Resistance Movements in | To review the circumstances that led to the establishment of colonialism in India. To bring out the impact of colonial rule in India with particular reference to socio-religious, political and economic fields. To analyse the genesis and progress of the resistance movements against the British. • |
| | HY 1543 | Course 9 History of Modern World – PART II | To trace the significance of the unification movements in Italy and Germany that paved the way for the beginning of a new epoch. To give an idea about the first and second world wars and to evaluate the achievements of the international organisations. |
| | HY 1544 | Course 10 History of Pre Modern Kerala | Understanding the early historic Kerala and the formations of nadus and swaroopams is the essentiality of this paper. The paper also throws lights on the rise of new kingdoms in Kerala.. |
| | HY 1545 | Course II Making of Indian Nation | The students will have thorough knowledge on the entire aspects of the struggle for Indian independence. In this paper the students will analyse the role of Gandhiji towards freedom struggles. |
| VI | HY 1641 | Course I2 Making of Modern Kerala | The students will be equipped with the knowledge on colonial powers and their interventions on Kerala society. The paper also specifies the early political movements, agitations for responsible government and the formation of the state of Kerala. |

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| | HY 1642 | Course I3 Major Trends in Indian Historical Thought and Writings | To enable the students to understand the origin and development of historical writings in India. To locate major historical works in Indian history. To create an awareness among the students about the influence of ideas and theories, trends and concepts in Indian historical writings. |
| | HY 1643 | Course I4 Contemporary India | To provide the students with a graphic account of the circumstances that led to the formation of Indian Union. To understand the challenges faced by independent India and the bold measures initiated after independence. To evaluate the achievements of contemporary India with special reference to science, information, technology. |
| | HY 1644 | Course I5 The Twentieth Century Revolutions | To introduce the students four major revolutions of the 20th century especially Russian, Chinese, Vietnamese and Cuban. To acquaint the students about the legacy of the above revolutions and to familiarize the students about the nature, scope and significance of the revolutions in the present context. |
| | HY 1651.6 | History of Human Rights Movements | This course enable the students to understand the historical growth of the idea of human rights, demonstrate an awareness of the international context of human rights, demonstrate an awareness of the position of human rights in India understand the importance of the human rights commission and, analyse and evaluate concepts and ideas. |
| | HY 1645 | Course I7 Project work | The students are entitled to do a project work on any social problem relevant to the study of history. The project work contains introduction, review of literature, methodology, analysis, along with conclusion and bibliography. |
| | HY 1131.1 | Course I8 Subsidiary and Open course | The department of history provides subsidiary course of history to Department of Economics. The department also offers an open course titled history of Human Rights Movements to the students of various departments who are interested in history. |

**THE OUTCOMES OF THE COURSES OFFERED BY THE
DEPARTMENT OF MALAYALAM**

Course: B A MALAYALAM

| SEMESTER | COURSE CODE | COURSE NAME | OUTCOME |
|-----------------|------------------------------------|---|---|
| SemI | Language Course II ML 111.1 | MalayalaKavitha | Understand lite great tradition of Malayalam poetry |
| | Core Course I- ML 114.1 | Novel CharithrayumPadanavum | To understand the origin, history and the current trend in Malayalam novel |
| | Comp;Course I – ML 113.1 | Kerala Samskaram Part 1 | To develop a perspective of the cultural history of Kerala To understand the literary background in its locality |
| SemII | Lang.Course V- ML1211.1 | Additional Language 2 Gadhyasahityam | Understand different types of Malayalam prose |
| | Core Course II- ML 1241 | NadakamCharitramPadavamP rayogam | To understand drama as an art form |
| | Comp;Course III – ML 1231 | Kerala SamskaramPart 2 | Understand the development of Malayalam Culture |
| SemIII | Lang: Course VII ML 1311.1 | Drisyakalasaahityam | To understand the various elements of audio visual literature forms |
| | Found: Course –II ML .1321 | Informatics AdunikaSankethikavidyayum MalayalaBhashaPadanavum | Understand the modern technologies influencing literature students like Malayalam computing, cyber literature internet language discourses etc. |
| | Core Course III- ML 1341 | SahithyaSidantanal: PashchatyavumPourastyavum | Understand the important literary theories which are formulated in the east and the west |
| | Compl: Course V- ML 1331 | ParisthithiSidhanthavumAvis hkaravum | To help students understand Eco criticism |
| Sem IV | Lang.Course IX ML 1411.1 | Asayavinimayam, Sargathmakarachana and Bhashavabodham | To understand the various elements of communication process |

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| | Core Course IV- ML 1441 | Malayalakavitha Poorvakhattam | To understand the origin and development of Malayalam poetry |
| | Core Course V- ML 1442 | Malayala Sahitya Niroopanam | To understand the origin, evolution and contemporary state of Malayalam criticism |
| | Compl.Course VII ML 1431.1 | Dalit EzhuthumPennezhuthum: SidhanthavumAvishkaravum | To understand the theoretical as well as the creative perspective Dalit and Women's writing,. |
| Sem V | Core Course VI - ML1541 | BhashaSasthram : BhashaCharitram | To understand the Linguistic History of Language |
| | Core Course VII- ML 1542 | CherukadhaPadanam | To understand the history, definition and the tradition of short story |
| | Core Course VIII – ML 1543 | VivarthanamSidhandavumPra yogavum | To enable the students to understand the importance of translation and its relevance in our social life. |
| | Core Course IX – ML 1544 | Jeevacharithram, Athmakadha, Yathranubhavam | To understand the unique nature and function of biography, autobiography and travelogue |
| | Core Course X- ML 1545 | ThirakadhayumCinemayum | To understand the influence of Cinema on humans and its origin and evolution |
| | Open Course ML 1551.3 | MalayalaPatrapravarthanam | To get professional skill in Malayalam print media. |
| Sem VI | Core Course XI - ML 1641 | Madyamalokam | To understand the origin and development of print and electronic media |
| | Core Course XII- ML 1642 | MalayalaVyakaranam | To understand the development of grammatical theory and practice |
| | Core Course XII- ML 1643 | MalayalaKavithaUttarakhatta m | To sensitize students to the development of modern Malayalam poetry |
| | Core Course XIV- ML 1644 | Nadodivijnaneeyam | To understand the folklore tradition of Kerala |
| | Elective ML 1651.5 | MalayalaPatrapravarthanam | To get professional skill in Malayalam print media. |
| | ML 1645 | Project /Dissertation | |

THE OUTCOMES OF THE COURSES OFFERED BY THE DEPARTMENT OF MATHEMATICS
Course: BSc Mathematics

| SEMESTER | COURSE CODE | COURSE NAME | OUTCOME |
|----------|-------------|--|---|
| I | MM 1141 | Methods of Mathematics | <ol style="list-style-type: none"> 1. Familiar with the fundamental methods solving problems. 2. Finding the rate of changes through differentiation method 3. Finding the area under a curve through the integration method |
| I | MM 1131.1 | Calculus with applications in Physics – I | <ol style="list-style-type: none"> 1. Understand Differentiation and Integration with application to Physics 2. Aware of infinite series and its convergence. 3. Familiar with Basic Vector Algebra. |
| I | MM 1131.2 | Calculus with applications in Chemistry – I | <ol style="list-style-type: none"> 1. Understand Differentiation and Integration with application to Chemistry 2. Familiar with basics in Complex numbers and Hyperbolic functions 3. Familiar with Basic Vector Algebra. |
| II | MM 1221 | Foundations of Mathematics | <ol style="list-style-type: none"> 1. Understanding the concepts of sets and functions. 2. Understand the way in which a mathematician formally makes statements and proves or disproves it. |
| II | MM 1231.1 | Calculus with applications in Physics – II | <ol style="list-style-type: none"> 1. Familiar with basics in Complex numbers and Hyperbolic functions. 2. Got an idea about Partial Differentiation and evaluate multiple integral. 3. Understand Vector Differentiation |
| II | MM 1231.1 | Calculus with applications in Physics – II | <ol style="list-style-type: none"> 1. Aware of infinite series and its convergence. 2. Got an idea about Partial Differentiation and evaluate multiple integral. 3. Understand Vector Differentiation |
| III | MM 1341 | Elementary Number Theory and Calculus – I | <ol style="list-style-type: none"> 1. Understand Abstract Algebraic structure. 2. Understand the fundamental facts in Elementary Number Theory. 3. Familiar with the basics of calculus of vector valued functions and multiple integrals. |
| III | MM 1331.1 | Calculus and Linear Algebra | <ol style="list-style-type: none"> 1. Got a concrete idea about ordinary differential equations and how to solve it. 2. Understand Vector Integration and Fourier Series 3. Familiar with Basic Linear Algebra |
| III | MM 1331.2 | Linear Algebra, Probability Theory & Numerical Methods | <ol style="list-style-type: none"> 1. Understand Numerical methods 2. Understand Probability and Statistics 3. Familiar with Basic Linear Algebra |

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| IV | MM 1441 | Elementary Number Theory and Calculus – II | 1. Understand the fundamental facts in Elementary Number Theory. 2. Familiar with the basics of calculus of vector valued functions and multiple integrals |
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| IV | MM 1431.1 | Complex Analysis, Special Functions, and Probability Theory | <ol style="list-style-type: none"> 1. Concrete idea on Complex Analysis 2. Familiar with some special functions such as The Factorial Function, Gamma Function. 3. Understand Probability and Statistics |
| IV | MM 1431.2 | Differential Equations, Vector Calculus, and Abstract Algebra | <ol style="list-style-type: none"> 1. Got a concrete idea about ordinary differential equations and how to solve it. 2. Understand Vector Integration and Abstract Algebra. |
| V | MM 1541 | Real Analysis – I | <ol style="list-style-type: none"> 1. Understand the ideas of sequence of real numbers and the concept of infinite summation in a formal manner. 2. A minimal idea to the metric space structure of \mathbb{R} and a step-ping stone into the idea of abstract topological spaces |
| V | MM 1542 | Complex Analysis – I | <ol style="list-style-type: none"> 1. Understand basic complex function theory. 2. Familiar with Complex Integration |
| V | MM 1543 | Abstract Algebra – Group Theory | <ol style="list-style-type: none"> 1. A very strong foundation in the theory of groups. 2. Understand the concept of Classifying groups based on the fundamental theorem |
| V | MM 1544 | Differential Equations | <ol style="list-style-type: none"> 1. Got an idea about how differential equations arise in various physical problems 2. Solve first order differential equations and second order linear equations. |
| V | MM 1551.1 | Operations Research (Open Course) | <ol style="list-style-type: none"> 1. Understand the idea behind Formulation of Linear Programming models. 2. Understand Transportation problems and Project Management. |
| VI | MM 1641 | Real Analysis – II | <ol style="list-style-type: none"> 1. Understand the concept of continuity, existence of derivatives, and integrability. |
| VI | MM 1642 | Complex Analysis – II | <ol style="list-style-type: none"> 1. Familiar with Power Series Representation of Analytic Functions such as Taylor Series, Laurent series. 2. Understand Residue Theorem and how it is used to solve real Improper Integrals 3. Got an idea about Conformal mapping and Mobius Transformations. |
| VI | MM 1643 | Abstract Algebra – Ring Theory | <ol style="list-style-type: none"> 1. Familiar with higher algebraic structure rings. 2. By numerous examples got a strong foundation on Rings and Fields |
| VI | MM 1644 | Linear Algebra | <ol style="list-style-type: none"> 1. Understand how to solve system of linear equations. 2. Familiar with Vector spaces and how Matrix related to Vector algebra. |
| VI | MM 166.1 | Graph Theory | <ol style="list-style-type: none"> 1. Aware of some of the fundamental concepts in Graph Theory 2. Develop better understanding of the subject so as to use these ideas skilfully in solving real world problems. |

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| VI | MM 1541 | Computer Programming | <ol style="list-style-type: none"> 1. Familiar with document preparation using LATEX 2. Understand the basics of computer Programming using Python |
| VI | MM 1646 | Project | <ol style="list-style-type: none"> 1. Comprehensive Viva 2. Recognize the importance of planning and preparing required to undertake a research project 3. Develop a thorough understanding of the chosen subject area 4. Demonstrate the ability to collate and critically interpret and assess data |

THE OUTCOMES OF THE COURSES OFFERED BY THE DEAPRTMENT OF

PHYSICAL EDUCATION- Course: open course

| SEMESTER | COURSE CODE | COURSE NAME | OUTCOME |
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| V | PE1551 | Health and Fitness Education | <ol style="list-style-type: none"> 1. To introduce the fundamentals of Health and Physical fitness. 2. To provide information about the scientific basis and benefits of Physical Activity. 3. To enable the students to lead a healthy lifestyle. 4. To impart knowledge regarding health, nutrition and first aid measures. 5. To give a brief awareness about sports & games and their influence in the society. |

THE OUTCOMES OF THE COURSES OFFERED BY THE DEPARTMENT OF PHYSICS

COURSE: BSc PHYSICS

| SEMESTER | COURSE CODE | COURSE NAME | OUTCOME |
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| Semester 1 | PY1141 | Basic Mechanics And Properties Of Matter | <p>Students will be able to articulate and describe:</p> <ol style="list-style-type: none"> 1 Relative motion. Inertial and non-inertial reference frames. 2 Parameters defining the motion of mechanical systems and their degrees of freedom. 3 Study of the interaction of forces between solids in mechanical systems. 4 Centre of mass and inertia tensor of mechanical systems. 5 Application of the vector theorems of mechanics and interpretation of their results. 6 Newton's laws of motion and conservation principles. |

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| Semester 2 | PY1241 | Heat And Thermodynamics | <p>Students will have achieved the ability to:</p> <ol style="list-style-type: none">1. Describe basic concepts of Thermodynamics2. Formulate the first law of thermodynamics for a closed systems and arrange the change in energy in the closed systems via heat and work transfer3. Apply the first law of thermodynamics to the open systems.4. Analyse energy changes in chemical reaction using first law of thermodynamic |
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| Semester 3 | PY 1341 | Electrodynamics | Students will have achieved the ability to: 1. use Maxwell equations in analysing the electromagnetic field due to time varying charge and current distribution. 2. describe the nature of electromagnetic wave and its propagation through different media and interfaces. 3. explain charged particle dynamics and radiation from localized time varying electromagnetic sources. |
| Semester 4 | PY1441 | Classical And Relativistic Mechanics | The student 1. can explain and compare the Lagrangian and Hamiltonian formulations of classical mechanics 2. can derive Kepler's laws 3. can explain the fundamental concepts of special relativity and how to perform Lorentz transformations 4. is familiar with the relativistic notation for 4-vectors and tensors 5. can explain the emergence of chaos in dynamical systems |
| | PY1541 | Quantum Mechanics | |
| Semester 5 | PY1542 | Statistical Physics, Research Methodology And Disaster Management | 1. Use the statistical physics methods, such as Boltzmann distribution, Gibbs distribution, Fermi-Dirac and Bose-Einstein distributions to solve problems in some physical systems. 2. Apply the concepts and principles of black-body radiation to analyze radiation phenomena in |

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| | | | <p>thermodynamic systems. Students should be able to identify the overall process of designing a research study from its inception to its report. 3. Students should be familiar with ethical issues in educational research, including those issues that arise in using quantitative and qualitative research. 4. Students should know the primary characteristics of quantitative research and qualitative research. 5. Students should be able to identify a research problem stated in a study</p> |
| | PY1543 | Electronics | <p>Describe the scientific principles that apply to the basic flow of electricity and explain the function of various materials used as conducting, semiconducting, and insulating devices in the construction of standard electrical/electronic circuits.</p> <p>Identify the basic tools and test equipment used to construct, troubleshoot, and maintain standard electronic circuits and systems.</p> <p>Explain the construction and application of standard circuit configurations and identify the component types and connections used to build functioning electronic circuits.</p> <p>Describe the appearance and general operating principles of multiple electronic components and electrical devices such as capacitors, resistors, inductors, semiconductors, integrated circuits (ICs), generators, motors, and transformers.</p> |

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| | | | Identify and describe the applied electronics principles used to develop circuitry and circuit-systems used for radio, television, fiber optic, laser, computer, and microprocessor devices. |
| | PY1544 | Atomic & Molecular Physics | <p>1. Master both experimental and theoretical working methods in atomic and molecular physics for making correct evaluations and judgments</p> <p>2. Carry out experimental and theoretical studies on atoms and molecules, with focus on the structure and dynamics of atoms and molecules.</p> <p>3. Account for theoretical models, terminology and working methods used in atomic and molecular physics</p> |
| | PY1551.5. | Open Courses Energy Physics | Good understanding of renewable energy systems, its components and interactions between the components. This includes all renewable energy technologies, different storage technologies, distribution grid, smart grid including sensors. Regulation and control, and both “stand alone” systems and large integrated distribution systems. |

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| Semester 6 | PY 1641 | Solid State Physics | <p>Can explain crystal systems, Diffraction and Reciprocal space.</p> <p>1. Defines Atomic packing, Crystal, Lattice, Unit cell and Translation vectors. 2. Explains Crystal systems, Crystal planes and directions, Miller indices, Diffraction of waves by crystals and Bragg's law.</p> <p>3. Knows Reciprocal space, Reciprocal lattice, Construction of reciprocal lattice, Reciprocal lattice vectors and Diffraction condition.</p> <p>4. Explains Reciprocal space and Laue equations and Brillouin zone.</p> <p>Can explain Free electron gas model and band models. 1. Explains Fermi free electron gas, Fermi-Dirac distribution and temperature. 2. Defines free electron gas in 3 dimensional. 3. Defines Energy bands, Bloch theory and Kronig-Penney model.</p> <p>Can explain Properties of semiconductors. 1. Defines semiconductor crystals. 2. Defines Direct and indirect band gap semiconductors. 3. Knows Effective mass and E-k relationship.</p> |
| | PY 1642 | Nuclear And Particle Physics | <p>Understand the importance of models in describing the properties of nuclei and nuclear collisions, • Be able to make quantitative estimates of phenomena involving nuclei. Have a phenomenological understanding of strong interactions starting from QCD, Be familiar with many-body physics, Be able</p> |

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| | | | to make quantitative estimates for nuclear phenomena in relation to the underlying microscopic theory. |
| | PY1643 | Classical And Modern Optics | <p>Describe the optical principles of thick lenses and optical aberrations.</p> <p>2. Use the principles of wave motion and superposition to explain the physics of polarisation, interference and diffraction.</p> <p>3. Describe the operation of optical devices, including, polarisers, retarders, modulators and inteferometers.</p> <p>4. Apply Fourier analysis to describe optical phenomena.</p> |
| | PY1644 | Digital Electronics And Computer Science | <p>1. Develop a digital logic and apply it to solve real life problems. 2. Analyze, design and implement combinational logic circuits. 3. Classify different semiconductor memories. 4. Analyze, design and implement sequential logic circuits. 5. Analyze digital system design using PLD. 6. Simulate and implement combinational and sequential circuits using VHD L systems. Assemble the components of a PC and install one or more network operating systems resulting in a functioning 2. Design a small or medium sized computer network including media types, end devices, and interconnecting devices that meets a customer's specific needs. 3. Perform basic configurations on routers and Ethernet switches. 4. Demonstrate knowledge of programming for</p> |

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| | | | network communications |
| | PY1442 | Basic Physics Lab 1 | The laboratory should help students to understand the role of direct observation in physics and to distinguish between inferences based on theory and on the outcomes of experiments. |
| | PY1645 | Advanced Physics Lab 2 | Demonstrate experiments in modern physics. Explain experiments in modern physics. Connect each physical discovery with its history contents. Use computer in interpreting experiments results, drawing graph and statistics. Organize one of the laboratory experiments. Adopt manners according to safety rules in laboratory. |
| | PY1646 | Advanced Physics Lab 3 | Students have the ability to use common, introductory level laboratory measurement and test equipment. Students have the ability to build basic analog circuits and test electronic components. |
| | PY1661.2. | Space Science | Describe the features of objects in the Solar System (i.e. Sun, planets, moons, asteroids, comets, planetary interiors, atmospheres, etc.) giving details of similarities and differences between these objects; 2 detail the presently accepted formation theories of the solar system based upon observational and physical constraints; 3 detail changes which are observed when viewing the sky |

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| | | | <p>daily, weekly, monthly, annually and longer period of time and demonstrate an understanding of the reasons behind any observed changes;</p> <p>4 demonstrate an understanding of the basic properties of the Sun and other stars;</p> <p>5 explain stellar evolution, including red giants, supernovas, neutron stars, pulsars, white dwarfs and black holes, using evidence and presently accepted theories;</p> |
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Course: M.Sc. Physics

| Semester | Course Code | Course name | Outcomes |
|----------|-------------|----------------------------|---|
| I | PH 211 | Classical Mechanics | <ol style="list-style-type: none"> 1. define and understand basic mechanical concepts related to discrete and continuous mechanical systems, 2. describe and understand the vibrations of discrete and continuous mechanical systems, 3. describe and understand planar and spatial motion of a rigid body, 4. describe and understand the motion of a mechanical system using Lagrange-Hamilton formalism. |
| | PH 212 | Mathematical Physics | <ol style="list-style-type: none"> 1. use complex analysis in solving physical problems; 2. solve ordinary and partial differential equations of second order that are common in the physical sciences; 3. use Green functions; 4. use the orthogonal polynomials and other special functions; 5. use Fourier series and integral transformation; 6. use the calculus of variations |
| | PH 213 | Basic Electronics | <p>Describe the scientific principles that apply to the basic flow of electricity and explain the operation of various materials used as conducting, insulating, and semiconducting devices in the construction of standard electrical/electronic circuits.</p> <p>Identify the basic tools and test equipment used to construct, troubleshoot, and maintain standard electronic circuits and systems.</p> |
| | PH 251 | General Physics Practicals | <p>The laboratory should help students to understand the role of direct observation in physics and to distinguish between inferences based on theory and on the outcomes of experiments.</p> |

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| | PH 252 | Electronics & Computer Science Practicals | Students have the ability to use common, ductory level laboratory measurement and equipment. Students have the ability to build c analog circuits and test electronic ponents |
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| II | PH 221 | Modern Optics & Electromagnetic theory | Describe the optical principles of thick es and optical aberrations. 2. Use the principles of wave motion and rposition to explain the physics of risation, interference and diffraction. 3. Describe the operation of optical devices, ding, polarisers, retarders, modulators and erometers. 4. Apply Fourier analysis to describe optical omena. |
| | PH 222 | Thermodynamics, Statistical Physics & Basic Quantum Mechanics | .Identify and describe the statistical nature ncepts and laws in thermodynamics, in ular: entropy, temperature, chemical ntial, Free energies, partition functions. se the statistical physics methods, such as zmann distribution, Gibbs distribution, i-Dirac and Bose-Einstein distributions to e problems in some physical systems. |
| | PH 223 | Computer Science & Numerical Techniques | Recognize the error in the number generated e solution. CO2. Compute solution of braic and transcendental equation by erical methods like Bisection method and ton Rapshon method. CO3. Apply method of polation and extrapolation for prediction. . Recognize elements and variable in stics and summarize qualitative and titative data. CO5. Calculate mean, median mode for individual series. CO6. Outline erties of correlation and compute Karl- son's coefficient of correlation. |
| | PH 251 | General Physics Practicals | 1. Demonstrate experiments in modern physics. 2. Explain experiments in modern physics. 3. Connect each physical discovery with |

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| | | <p>its history contents.</p> <ol style="list-style-type: none"> Use computer in interpreting experiments results, drawing graph and statistics. Organize one of the laboratory experiments. Explain how ionising radiation effect on humans, its advantages and drawbacks. Adopt manners according to safety rules in laboratory. |
| | PH 252 | <p>Electronics & Computer Science Practicals</p> <p>Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.</p> |
| | | |
| III | PH 231 | <p>Advanced Quantum Mechanics</p> <ol style="list-style-type: none"> Describe the basic Hilbert space structures describing all quantum field theories, Model physical systems using common approximation techniques for making dynamical calculations. Discuss the difficulties with the theory of quantum measurement and local realism. |
| | PH 232 | <p>Advanced Spectroscopy</p> <p>Will be able to interpret UV-Visible spectroscopy, 1.1 Explain basic principles of UV-Visible spectroscopy, 1.2. Explain relevant terms V-Visible spectroscopy, 1.3. Explain working principle, taking spectra and outline of spectroscopy device, 2. Will be able to interpret IR spectroscopy, 2.1. Explain basic principles of IR spectroscopy, 2.2. Arrange components of IR spectroscopy device, 2.3. Explain working principles and taking spectrum spectroscopy device, 3. Will be able to interpret NMR spectroscopy, 3.1. Explain basic principles of NMR spectroscopy, 3.2. Explain sample preparation procedure in NMR spectroscopy, 3.3. Explain working principles,</p> |
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| | | <p>g spectrum and outline of NMR spectroscopy device, 4. Will be able to interpret elemental analysis technique, 4.1. Explain using basic and using of elemental analysis technique, 4.2. Report results of C,H,O,S analysis in sample, 5. Will be able to interpret fluorescence spectroscopy, 5.1. Explain basic principles of fluorescence spectroscopy, 5.2. Explain working principles, taking spectrum and outline of fluorescence spectroscopy device, 6. Will be able to interpret atomic absorption spectroscopy, 6.1. Explain basic principles of atomic absorption spectroscopy, 6.2. Explain the types of atomic absorption spectrometer, 6.3. Explain working principles, taking spectrum and outline of atomic</p> |
| PH 233 E | Special Paper I (Advanced Electronics) | <p>ption spectroscopy device, Understand the current voltage characteristics of semiconductor devices, 2. Analyze dc circuits and relate ac models of semiconductor devices with their physical operation, 3. Design and analyze of electronic circuits, 4. Evaluate frequency response to</p> |
| PH 261 | Advanced Physics Practicals | <p>Understand behavior of Electronics circuits Students have the ability to successfully perform an experimental procedure when given</p> |
| PH 262 | Advanced Electronics Practicals | <p>Use advanced and introductory level equipment. Identify, formulate, review research literature, and analyze complex engineering systems reaching substantiated conclusions using first principles of mathematics, natural</p> |
| | | <p>sciences, and engineering sciences.</p> |
| IV | | <p>Can explain crystal systems, Diffraction and reciprocal space. 1. Defines Atomic packing, Crystal, Lattice, Unit cell and Translation vectors. 2. Explains Crystal systems, Crystal planes and Miller indices, Diffraction of waves by Bragg's law. 3. Knows Reciprocal lattice, Reciprocal lattice, Construction of reciprocal lattice, Reciprocal lattice vectors and Bragg's law. 4. Explains Reciprocal lattice and Laue equations and Brillouin zone.</p> <p>Can explain Free electron gas model and models. 1. Explains Fermi free electron gas, i-</p> |

Dirac distribution and temperature. 2.

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| | | <p>nes free electron gas in 3 dimensional. 3. nes Energy bands, Bloch theory and Kronig-ey model.</p> <p>Can explain Properties of semiconductors. fines semiconductor crystals. 2.Defines ct and indirect band gap semiconductors. ows Effective mass and E-k relationship.</p> |
| PH 242 | Nuclear & Particle ics | <p>Understand the importance of models in ribing the properties of nuclei and nuclear sions, • Be able to make quantitative ates of phenomena involving nuclei. Have a omenological understanding of strong actions starting from QCD, Be familiar with y-body physics, Be able to make quantitative ates for nuclear phenomena in relation to the rlying microscopic theory</p> |
| PH 243 E | Special Paper II (Advanced ronics) | <p>Develop a digital logic and apply it to solve life problems. 2. Analyze, design and ement combinational logic circuits. 3. sify different semiconductor memories. 4. lyze, design and implement sequential logic its. 5. Analyze digital system design using . 6. Simulate and implement combinational sequential circuits using VHD L ms.Students will be able to explain principle peration for various sensors. 2. Students will ble to describe functional blocks of data sition system. 3. Students will be able to ransfer functions for given system. 4. ents will be able to calculate time domain frequency domain parameter for given system</p> |
| PH 261 | Advanced Physics Practicals | <p>The laboratory should help students to rstand the role of direct observation in ics and to distinguish between inferences d on theory and on the outcomes of riments.</p> |
| PH 262 | Advanced tronics Practicals | <p>Use computer in interpreting experiments lts, drawing graph and statistics. Organize of the laboratory experiments. Adopt ners according to safety rules in ratory.Apply time and frequency concepts of ysis. 4. Understand various functions of ork and also the stability of network. 5. n the various parameters and their relationship, able to solve numericals with</p> |

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| | | s, cascade, parallel connection using two port meters. 6. Synthesize the network using five elements |
| PH 201 | Project | |

**THE OUTCOMES OF THE COURSES OFFERED BY THE
DEPARTMENT OF SANSKRIT**

Course: Sub and Second Language

| SEMESTER | COURSE CODE | COURSE NAME | OUTCOME |
|----------|-------------------------------|-----------------------|--|
| Sem I | Language Course II SK.1111.1 | Drama and Prose | To understand simple prose style in Sanskrit literature and Dramatic forms of Sanskrit literature. |
| | Comp.Course I SK.1131.2 | Poetry and Grammar | To make awareness about the simple style of Kavya literature of a Kerala Sanskrit poet and to stimulate the students' humanistic outlook on life. |
| Sem II | Language Course SK.1211.1 | Epic and Stotra Kavya | Make aware about Epic, Stotra Kavya literature and Indian Culture and Tradition. To articulate the ideas of keeping morality in life. |
| | Comp.Course II SK.1231.2 | Prose and Drama | Make awareness about the dramatic literature and style of Bhasa, improve students' vocabulary for better reading and writing, understand the ideas of ancient Indian stories for the betterment of life. |
| Sem III | Language Course VII SK.1311.1 | Mahakavya and Drama | Make awareness about the Mahakavya style and dramatic style of MahakaviKalidasa and |

Outcomes of the Courses Offered by the Department of Zoology

Course: BSc Zoology

| Core Zoology | | | |
|--------------|-------------|--|--|
| Semester | Course Code | Course Name | Course Outcome |
| Semester I | ZO 1141 | Animal Diversity I | Provide an in-depth knowledge of Nonchordates |
| Semester II | ZO 1241 | Animal Diversity II | Provide knowledge about structure and habits of Chordates |
| Semester III | ZO 1341 | Methodology and Perspectives of Zoology | To introduce the methodology and perspectives of science and enabled the students to pursue zoology in relation to other disciplines |
| Semester IV | ZO1441 | Ecology, Habitat destruction and disaster management | Students get basic knowledge of ecosystem functioning, awareness of anthropogenic pressures on ecosystem and create awareness about disaster and prevention measures |
| | ZO1541 | Cell and Molecular Biology | Students acquire sufficient knowledge on the fundamentals of cell biology, molecular biology, gene manipulation and cancer and Ageing |
| Semester V | ZO 1542 | Genetics and Biotechnology | Students get educated on Genetic mechanism and the art of bio-techniques. To understand the principles and techniques of DNA, PCR, Gene Therapy and Human Cloning |
| | ZO 1543 | Immunology and Microbiology | To understand the scope and importance of clinical immunology and history and importance of microbiology |
| | ZO 1551.3 | Human diseases and their Management | To give knowledge to the students about the need to manage the communicable disease thereby creating a healthy society |
| | ZO 1641 | Physiology and Biochemistry | Students develop clear understanding about correlation and coordination of Organ systems of the body and functions of Biomolecules |
| Semester VI | | | |

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| | ZO 1642 | Developmental Biology and Experimental | Students get an idea about history and procedures of developmental biology and they can procure information of |
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| | | Embryology | experimental embryology and the control mechanism of development |
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| | ZO 1643 | Ethology, Evolution and Zoogeography | To enhance students concept of organic evolution and the physiological basis of behaviour and also acquire knowledge on the distribution of animals in the biosphere |
| | | | |
| | ZO 1651.1 | Economic Zoology- Vermiculture and Apiculture | It offers self-employment and self-reliance among students |
| | | | |
| Practical I | ZO 1442 | Animal Diversity I and Animal Diversity II | Students get familiarized with various simple dissections and mountings, emphasize the adage that seeing is believing by observing typical examples, learn the working principles of various instruments |
| Practical II | ZO 1644 | Cell Biology , Genetics and Bioinformatics | To expertise the students to carry out routine haematological and microbiological techniques, to gain broad knowledge on conventional biotechnological procedures |
| Practical III | ZO 1645 | Physiology and Biological Chemistry, Molecular Biology and Biostatistics | To demonstrate basic principles in physiology, to make the students skilful in simple biochemical laboratory procedures |
| Practical IV | ZO 1646 | Developmental Biology, Ecology, Ethology, Evolution and Zoogeography | Students get an idea about history and procedures of developmental biology, Students get basic knowledge of various physic-chemical factors influencing the ecosystem, they got an idea about different zoogeographical realms with fauna |
| Zoology Project and Field study | ZO 1647 | | To develop an aptitude for research and to inculcate proficiency to identify appropriate research topic and presentation |
| | | | |
| Complementary Zoology | | | |
| Semester I | ZO 1131 | Animal Diversity I | Provide an in-depth knowledge of Nonchordates |
| | | | |
| Semester II | ZO 1231 | Animal Diversity II | Provide knowledge about structure and habits of Chordates |

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| Semester III | ZO 1331 | Functional Zoology | To familiarize students on the physiology of their own body and urge them to take precautionary measures to safeguard their health |
| Semester IV | ZO 1431 | Applied Zoology | To introduce the methodology and perspectives of applied branches of zoology with a view of educating youngsters on the possibilities of self-employment |
| Practical I | ZO 1432 | Animal Diversity I and Animal Diversity II, Functional Zoology, Applied Zoology | To provide hands on training experience through simple dissections and mountings, emphasize the adage that seeing is believing by observing typical examples and economically important specimens |

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| Semester III | ZO 1331 | Functional Zoology | To familiarize students on the physiology of their own body and urge them to take precautionary measures to safeguard their health |
| Semester IV | ZO 1431 | Applied Zoology | To introduce the methodology and perspectives of applied branches of zoology with a view of educating youngsters on the possibilities of self-employment |
| Practical I | ZO 1432 | Animal Diversity I and Animal Diversity II, Functional Zoology, Applied Zoology | To provide hands on training experience through simple dissections and mountings, emphasize the adage that seeing is believing by observing typical examples and economically important specimens |



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Principal
Sree Narayana College
Elvargiri, Sraenivasapuram P.O.
Pin: 895145

MCOM INTERNATIONAL TRADE

PROGRAMME SPECIFIC OUTCOME AND COURSE OUTCOME

Programme Specific Outcomes (PSO) for M.com International Trade

- PSO 1-Understand the procedures of international trade and evaluate the implications of international trade
- PSO 2-Understand the legal procedure and regulations of international trade, Intellectual Property Rights, patent and copyrights
- PSO 3-Understand and recognize the importance of cross-cultural Business communication in the International Trade practices
- PSO 4-Acquire Knowledge of statistical concepts and analyze international trade related data set and Skill in the application of procedures for statistical inference
- PSO 5-Acquire the knowledge and skill required to conduct a focused research relating to international trade related problems
- PSO 6-Acquire the knowledge and skills relating to the hedging of international risks and risk management tools
- PSO7-Understand the status of the present international taxation proceedings and applications in international trade

Course Outcomes for M.com International Trade

SEMESTER I CO T 511- Course I: INTERNATIONAL BUSINESS

Course Outcomes

1. CO 1. Understand the concept of International Business and International Business Environment
2. CO 2. Understand different theories of International Business.
3. CO 3. Understand the legal procedures involved in International Business.
4. CO 4. Recognize the different types of economic integrations.
5. CO 5. Understand and analyze the operations of MNCs through real case assessment.



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SEMESTER I Course IV: CO T 514- FINANCIAL REPORTING STANDARDS AND ADVANCED CORPORATE ACCOUNTING

Course Outcomes

1. CO1: Understand the trade related Accounting Standards and their application
2. CO2: Understand and Recognize the convergence of IFRS and Ind AS
3. CO3: Acquire the Skill for preparing Financial Statements by applying relevant Accounting Standards CO4: Understand and Apply the knowledge in accounting for Amalgamation
4. CO5: Understand and do Accounting for Liquidation of Companies.

SEMESTER I CO T 512 - Course II: RESEARCH METHODOLOGY

Course Outcomes

1. CO 1. Understand the concept and process of research
2. CO 2. Apply the research process for preparation of research design
3. CO 3. Understand the sampling design in research
4. CO 4. Apply appropriate tools for data collection
5. CO 5. Apply statistical tools for data analysis and evaluating the results

SEMESTER I Course IV: CO T 514- FINANCIAL REPORTING STANDARDS AND ADVANCED CORPORATE ACCOUNTING

Course Outcomes

1. CO1: Understand the trade related Accounting Standards and their application
2. CO2: Understand and Recognize the convergence of IFRS and Ind AS
3. CO3: Acquire the Skill for preparing Financial Statements by applying relevant Accounting Standards CO4: Understand and Apply the knowledge in accounting for Amalgamation
4. CO5: Understand and do Accounting for Liquidation of Companies.

SEMESTER I CO T 515- Course V: ECONOMIC PRINCIPLES FOR INTERNATIONAL TRADE COURSE OUTCOMES

On completion of the course, students should be able to:

1. CO 1: Understand the basics of Macroeconomics
2. CO 2: Understand relevant trade theories
3. CO 3: Evaluate existing trade and non-trade barriers of international trade.
4. CO 4: Understand the approaches to management of balance of payment
5. CO 5: Evaluate India's foreign trade status



SEMESTER II Course I: CO T 521- E-BUSINESS & CYBER LAWS

Course Outcome

1. CO1- Understand the emerging trends in the e commerce business and its new technological challenges
2. CO2- Understand the new marketing innovations which is essentially required to conduct the e business in international level
3. CO3- Understand the supply chain management of international trade and business
4. CO 4- Understand the laws governing cyber laws and regulations in e commerce relating to international trade, patents and copy rights
5. CO5- Understand the relevant provisions of IT Act relating to cybercrimes and punishments

SEMESTER II CO T 522- Course II: INTERNATIONAL ADVERTISING

Course Outcomes

1. CO 1. Understand the concept, relevance and response structure of marketing communication.
2. CO 2. Identify an apt media for advertisement by comparing various factor related to it.
3. CO 3. Select an appropriate agency for advertisement by analyzing various factors affecting the selection process.
4. CO 4. Understand the concept of Integrated Marketing Communication and relevance of Promotion in marketing.
5. CO 5. Understand the recent trends in International Marketing.

SEMESTER II CO T 523 -Course III: CROSS- CULTURAL BUSINESS COMMUNICATION

Course Outcomes

1. CO1: Understand the fundamentals of business communication
2. CO2: Understand and recognize the basic skills needed for business communication
3. CO3: Understand the basic principles of cross-cultural communication
4. CO4: Understand and evaluate the conflicts in inter-cultural communication
5. CO5: Recognize different factors influencing intercultural communication

SEMESTER II CO T 524 -Course IV: QUANTITATIVE TECHNIQUES AND FINANCIAL ECONOMETRICS COURSE OUTCOMES

1. CO1: Understand the basic concepts of probability theory and analyze the different Probability distributions
2. CO2: Understand and apply sampling concepts and procedures
3. CO3: Apply hypothesis testing procedure and evaluate the outcome

4. CO4: Understand the basics of Econometrics
5. CO5: Understand and Acquire the skill in conducting analysis

SEMESTER II Course V: CO T 525- INTERNATIONAL FINANCIAL MANAGEMENT

Course outcomes

1. CO1: Understand the basic concepts of International Finance and recognize the international financial markets.
2. CO2: Understand the fundamentals of foreign exchange rates and their determination
3. CO3: Explain the working of foreign exchange market and the international agencies.
4. CO4: Understand the various instruments in International financial market and identify the features. CO5: Analyze the implications of global investment in the form of FDI and FII

SEMESTER III CO T 531 -COURSE I: INTERNATIONAL TAXATION

Course outcomes

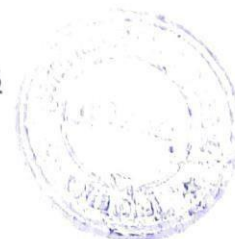
1. CO 1: Understand the provisions of transfer pricing under Income Tax Act, 1961
2. CO 2: Understand the provisions relating to international transactions and non-resident taxation under the Income Tax Act, 1961
3. CO 3: Understand the law and procedures under the Black Money (Undisclosed Foreign Income and Assets) and Imposition of Tax Act, 2015.
4. CO 4: Understand and apply the method for application of taxation of E-commerce transactions and tax treaties and to have knowledge of the methods for interpretation of tax treaties.
5. CO 5: Understand and evaluate the role of anti-avoidance provisions.
6. CO 6: Understand and analyses the tax convention models.

SEMESTER III CO T 532: Course II: - INTERNATIONAL TRADE AND DOCUMENTATION COURSE **OUTCOMES**

On completion of the course, students should be able to:

1. CO 1: Understand the concept of financial risk and the role of derivatives in risk management
2. CO 2: Understand various theories in Exchange Rate fixation
3. CO 3: Evaluate different types of currency derivatives
4. CO 4: Understand the different types of forex risk and recognize various risk management avenues CO 5: Understand the basics of forex risk management in India
5. CO 6: Analyse the foreign investment management in the changed scenario

SEMESTER III Course III: CO T 533- MANAGEMENT OF INTELLECTUAL PROPERTY RIGHTS



Course Outcomes

1. CO1-Understand the historical perspectives of IPR law, World Intellectual Property organization, TRIPS and TRIMS
2. CO 2- Understand in detail the forms of IPR and their relative importance in International trade
3. CO3- Understand the IPR regulations and legislations in India
4. CO-4 Understand the procedure of registrations of IPR in India
5. CO5- Understand the procedure of commercialization of IPR
6. CO6- Understand the procedure of intellectual property valuation and audit

SEMESTER III CO T 534- Course IV: FOREX MANAGEMENT COURSE OUTCOMES

On completion of the course, students should be able to:

1. CO 1: Understand the concept of financial risk and the role of derivatives in risk management
2. CO 2: Understand various theories in Exchange Rate fixation
3. CO 3: Evaluate different types of currency derivatives
4. CO 4: Understand the different types of forex risk and recognize various risk management avenues
- CO 5: Understand the basics of forex risk management in India
5. CO 6: Analyse the foreign investment management in the changed scenario

SEMESTER IV Course I: CO T 541- LOGISTICS AND SUPPLY CHAIN MANAGEMENT COURSE OUTCOMES

On completion of the course, students should be able to:

1. CO1: Explain the international supply chain and various types of logistics in Global trade.
2. CO2: Understand significance of transportation and transportation management.
3. CO3: Understand and Recognize the need and types of inventory control.
4. CO4: Understand and Recognize the need of warehousing
5. CO5: Understand the need and importance of material handling.
6. CO6: Understand the relevance of order processing and its factors.

SEMESTER IV Course II: CO T 542- GLOBAL STRATEGIC MANAGEMENT

Course Outcomes

1. CO1- Understand the strategic management approaches of MNC's in the world



2. CO2- Understand the concept of International Product Life Cycle
3. CO3- Understand the different types of strategies to manage a global enterprise
4. CO4- Apply the skill and knowledge of strategic management to face the international competition CO5- Understand and evaluate the process of strategy implementation and control in global business
5. CO6- Understand the process of Strategy evaluations and integration of subsidiaries

SEMESTER IV CO T 543- Course III: LEGAL FRAMEWORK FOR INTERNATIONAL TRADE

Course Outcomes

1. CO1-Understand the origin and source of international law
2. CO2- Understand and apply the arbitration rules and regulations
3. CO3-Understand obligations of the buyer& seller, common provisions and rules concerning damages CO4- Understand the provisions of patent applications and further formalities
4. CO5- Understand and evaluate the trade and merchandise regulations including the licensing of trademarks
5. CO6- Understand and evaluate the Functions of RBI over transactions in foreign exchange and Restriction on capital account and current account transactions

SEMESTER IV Course IV: CO T 544- MANAGEMENT OPTIMIZATION TECHNIQUES

Course Outcomes

1. CO1: Understand the nature and importance of modeling techniques in business
2. CO2: Apply Programming models and Evaluate the outcomes
3. CO3: Solve the transportation and assignment problems
4. CO4: Apply Decision making models and Evaluate the outcome
5. CO5: Apply Project Scheduling techniques for Optimal scheduling of Projects
6. CO6: Apply Replacement models for Decision making regarding equipment's



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