Course Outcome B.A English Language and Literature

Semester 1

Core Course 1 - Reading Poetry EN 1141

- CO 1 to identify various forms and types of poetry.
- CO 2 to learn to read, analyse and appreciate poetry critically.
- CO3 to know about the diverse poetic devices and strategies employed by the poets.
- CO 4 To sensitize students to the language types and forms of poetry
- CO 5 To respond critically and creatively to the world around

No of Credits:4

No of instructional hours per week : 6

Complementary Course : History of English Literature- I EN1131

CO 1 - to gain an understanding of the social and literary background of England till the Renaissance period.

- CO 2 to internalise the link between society and literature.
- CO 3 to understand the foundations of English literature
- CO 4 to analyse the background of poetry, drama and early prose
- CO5 to understand literature as a product of history

No of Credits:3

No of instructional hours per week : 3

Semester 2

Core Course 2 - READING DRAMA: EN 1241

- CO 1 to identify the various genres and schools of drama.
- CO2 to analyse and appreciate drama and engage actively in the mechanics of performance

CO3 - to help students watch, write about and perform plays

- CO4 to write critically about and engage actively in producing drama
- CO 5 to sensitize the students to the verbal and visual language of drama

No. of credits: 4

No. of instructional hours: 6 per week

Complementary Course : History of English Literature II EN 1231

CO 1 - to gather knowledge about Restoration literature and the Romantic Age

CO2 - to get a wider perspective about the rise of modern science and modern capitalism, the French Revolution and Gothic literature

CO3 – to gain a wider understanding of how social change is reflected in literature

CO 4 – to understand the sea change in the English ethos from the Puritan age to the Romantic Revival and how it affected literature

CO 5 – to internalize the impact of the Romantic movement and how it revolutionized all the literature that followed

No of Credits:3

No of instructional hours per week : 3

Semester 3

Core Course 3 - READING FICTION: EN 1341

CO 1 - to learn to identify different fictional forms

CO 2 - to analyse and appreciate fiction and the enrich their knowledge about diverse fictional forms in prose

- CO3 to help them think and write imaginatively
- CO4 to give them an insight into other cultures
- CO5 to enable them to analyse and appreciate various fictional writings

No. of credits: 3

No. of instructional hours: 4 per week

Core Course 4 - 20th CENTURY MALAYALAM LITERATURE IN ENGLISH TRANSLATION: EN 1342

- CO 1 to get a basic understanding of Twentieth Century Malayalam writing
- CO 2 to analyse and appreciate Twentieth Century Malayalam writing
- CO 3 to introduce the theories in translation
- CO 4 to introduce students to the richness of 20th Century Malayalam writing
- CO5 to discuss the salient features of the works of major 20th century Malayalam writers

No. of credits: 4

No. of instructional hours: 5 per week

Complementary Course : History of English Literature III EN 1331

to gather a general awareness about the Victorian Age and the social milieu of early and mid twentieth century.

to understand the impact of the World Wars on society and the way it has affected literature.

Credits: Theory period of 3 hrs per week over a semester

Semester 4

Core Course 5 - READING PROSE: EN 1441

- CO 1 -to recognize different types of prose writing.
- CO 2 to understand and appreciate the basic concepts of style and literary devices in prose.
- CO3 to write creatively and critically.
- CO4 to acquaint the students with cultural diversity and divergence in perspectives.

CO5- to introduce them the concepts of style and literary devices in prose

Credits: Theory period of 4hrs per week over a semester

Foundation Course II – INFORMATICS: EN 1421

CO1-to update their knowledge in the field of informatics.

CO2-to learn to use digital knowledge resources effectively for their studies.

CO3-to equip students to utilize and understand the nature of digital knowledge society.

CO4-to update and expand basic informatics skill

CO5-to understand networking and internet in detail.

Credits: Theory period of 4hrs per week over a semester

Complementary Course : History of English Language EN 1431

CO1-familiarize themselves with the origin and development of the English language.

CO2-trace the evolution of the English language and identify the various language families.

CO3-get exposed to periods in the history of English (Old English, Middle English, Modern English)

CO4-To know about the contribution of major writers to English Language.

CO5-to get exposed to the growth of vocabulary.

Credits: Theory period of 3hrs per week over a semester

SEMESTER 5

Core Course 6 - LITERARY CRITICISM: EN 1541

No. of credits: 4

No. of instructional hours: 5 per week

CO 1 - develop a critical perspective on the historical overview of the critical practices from the classical period to the present.

CO 2 - Enable the students to read and analyse literary texts from different points of view.

CO 3 - to trace the development of critical practices from ancient times to the present

CO 4 - to know about the concept of Rasa and Pugation.

CO5 – to discover the critical concepts that emerged in different periods **Credits**: Theory period of 5hrs per week over a semester

Core Course 7 INDIAN LITERATURE IN ENGLISH: EN 1542

CO1-gain an understanding of the Indianess in Indian literature in English.

CO2-analyse the strengths and constraint of Indian English as a literary genre.

CO3-Trace the development of Indian writing in English.

CO4-Explain the indianness in Indian literature in English.

CO5-Analyse the strength and constraints of Indian English as a literary media.

Credits: Theory period of 5hrs per week over a semester

Core Course 8 FILM STUDIES: EN 1543

CO1-get a basic knowledge in the history, art and culture of motion pictures.

CO2-discover the language of cinema and understand key concepts in film studies.

CO3-explore films as texts and enable to pursue higher studies and careers in film.

CO4-To introduce to the students the key concepts in film studies.

CO5-Write critically about films.

Credits: Theory period of 3hrs per week over a semester

Core Course 9 : LINGUISTICS AND PHONETICS: EN 1544

CO1-Equip students with a thorough knowledge of the various aspects of the English language.

CO2-develop a neutral accent and improve their general standard of pronunciation.

CO3-learn and understand about linguistics, its branches, varieties of English etc.

CO4-explain the key concepts in linguistics.

CO5-Speak globally intelligible English.

Credits: Theory period of 4hrs per week over a semester

Core Course 10 : POST COLONIAL LITERATURES IN ENGLISH - EN 1545

CO1-to assess post colonial literature, life and culture.

CO2-read and appreciate the post colonial literature with insight.

CO3-Identify what is distinctly post colonial literature.

CO4-Understand post colonial culture and its varying modes of literary expression.

CO5-To broaden their aesthetic and intellectual faculties.

Credits: Theory period of 5hrs per week over a semester

Open Course I - COMMUNICATIVE APPLICATIONS IN ENGLISH: EN 1551.1

CO1-learn and understand about the four language skills.

CO2-enhance their career prospects and employability through various international English language tests.

CO3-To equip the students for competitive exams and various international English language tests.

CO4-To help the students develop their personality by fine tuning their communication and presentation skills.

CO5-Use English for international communication.

Credits: Theory period of 3hrs per week over a semester

Semester 6

Core Course 11 - WORLD CLASSICS: EN 1641

CO1-read and appreciate classical works.CO2-evaluate classical texts critically.CO3-to broaden their outlook and sensibility about their own culture and the classics.CO4-Place and assess their own culture and classics.

CO5-To introduce students to the world of the classics in literature.

Credits: Theory period of 5hrs per week over a semester

Core Course 12 - METHODOLOGY AND PERSPECTIVES OF HUMANITIES EN 1642

CO1-learn and understand the key concepts in literary theory and criticism.
CO2-read literature critically from a theoretical perspective.
CO3-develop a critical perspective in pursuing literary studies.
CO4-Make sense of literature.
CO5-Introduce students to the methodological issues specific to the humanities.

Credits: Theory period of 5hrs per week over a semester

Core Course 13 - ENGLISH FOR THE MEDIA: EN 1643

CO1-explore the nature and scope of the communication media.CO2-write headlines and articles for newspapers and magazines and design their content.CO3-design and write webs, blogs and advertisements.CO4-Produce and present scripts and programmes for radio and TV.CO5-Sensitise students to the English language used in the media.

Credits: Theory period of 5hrs per week over a semester

Core Course 14 - WOMEN'S WRITING EN 1644

CO1-build an awareness of class, race and genderCO2-to introduce the development of women's writing in various countries.CO3-acquire the skill to understand feminism as a social movement and a critical tool.CO4-To motivate the students to critically analyse literary works from a feminist perspective.CO5-To explore the plurality of female experiences.

Credits: Theory period of 3hrs per week over a semester

Elective Course - TRANSLATION STUDIES: EN 1661.1

CO1-familiar with the concepts and theories of translation.

CO2-learn and understand the art of translation.

CO3-help them to find employment as translators.

CO4-Undertake various translation works.

CO5-To read and analyse various translation works.

Credits: Theory period of 3hrs per week over a semester

DEPARTMENT OF ECONOMICS

COURSE OUTCOME

EC1141 Methodology and perspectives of social sciences (Credit 4)

•CO1 The students will be able to understand the broad contours of social sciences.

•CO2 The course will give a detailed understanding on various schools of economic though.

•CO3 The students will acquire basic understanding on research methodology and various tools.

CO4 The students will get clear picture of methodology of social sciences.

6 hours per week over a semester

EC 1241 Micro Economics I (credit 4)

- •CO1 It will enable the students to get a brief idea about the basic principles of micro economics.
- •CO2 Give an idea on consumer and producer behaviour in economics.
- •CO3 The paper covers detailed analysis on demand forecasting and demand supply analysis.
 - CO4 The paper gives an overview of production and cost analysis.

6 hours per week over a semester

EC1321 Foundation course II Informatics (credit 3)

- **CO1**It will help the students to acquire basic informatics skills.
- CO2Help students in preparing digital presentations and data analysis
- **CO3**to equip the students to effectively utilize the digital knowledge.
- CO4 Help the students in creation and manipulation of documents.
- 6 hours per week over a semester

EC1341Core III Micro Economics II (Credit 4)

- CO1 It will provide basic understanding of advanced micro economics
- CO2 Give an idea on market structures and its working.
- CO3 The course covers advanced micro economic concepts like risk and uncertainty analysis

• CO4 It will provide basic knowledge about factor pricing and distribution.

6 hours per week over a semester

EC1441 Core IV Basic tools for Economics I (credit 4)

- **CO1** It will enable the students to understand economic concepts with the aid of mathematical tools.
- **CO2** Students will be able to quantify the economic concepts with the help of differential calculus.
- **CO3** It provides basic knowledge about integral calculus
- CO4 Students will get detailed knowledge about the matrix.

5 hours per week over a semester

EC1442 Core V Macro Economics I(credit 3)

- **CO1** It will help the students to understand theoretical framework and the working of an economy as a whole
- CO2 The students will get an idea on national income calculation
- **CO3** It helps the students inbuilding theories of macroeconomics.
- CO4 It provides detailed knowledge about the Keynesian macroeconomic system4

4 hours per week over a semester

EC1541 Core V Money and modern Banking (credit 4)

- **CO1** The students will be able to know the evolution and role of money in the economy
- CO2 Commercial banking and the functioning of RBI will be thoroughly understood by the students after the completion of the course.
- **CO3** Students also get an idea about the innovative functions of banks.
- CO4 Students will get clear picture about the functioning of RBI

4 hours per week over a semester

EC1542 Core VII Macro Economics II (credit 4)

- **CO1** It will help the students to have an idea about advanced macro theories
- CO2 The students will now know the components of aggressive demand, money, price and interest rate.
- CO3 The students will know the components of aggregative demand, money, price and interest rate.
- CO4 The paper also gives an insight to the various macroeconomic policy alternatives

4 hours per week over a semester

EC1543 Core VIII Economics of growth and development (credit 2)

- **CO1** The students will be able to understand the basic concepts of development and growth
- CO2 They will be able to do country level analysis on the pace of their development.
- CO3 They will be able to measure development of various countries.
- CO4 It provides an insight into different issues and challenges on economic development.

3 hours per week over a semester

EC1544 Core IX Indian Economy (credit 4)

- CO1 The students will be able to analyse the various issues of the Indian Economy
- CO2 They can now understand the problems of Indian economy.
- CO3 They will be able to understand the current issues in infrastructure development, industry and agriculture
- **CO4** Students will get a clear picture about the development of Indian economy since independence.

4 hours per week over a semester

EC1545 Core X Public Economics (credit4)

- CO1 It will enhance the understanding of the students on the scope of public economics
- CO2 They will now know the analysis on government revenue, expenditure and debt.
- CO3 Students can now technically and effectively analyse the annual budget of the government
- **CO4** Students will get a clear picture about the governmental finance and its economic impacts.

4 hours per week over a semester

EC1551 Open I Human Resource management (credit 2)

- **CO1** It will make the students to get an idea about the significance of human resource in an economy.
- **CO2** Students after the completion of the course will have an understanding on training, recruitment and other HR practices.
- CO3 Can effectively act as an HR manager.
- CO4 It also provides various aspects of human resource planning.

2 hours per week over a semester

EC1641 Core XI KeralaEconomy (credit 4)

- **CO1** It will enable the students to get an idea about the structural changes, sectoral aspects and features of the Kerala economy.
- **CO2** It will enable the students to have a basic understanding of the emerging issues and trends in the Kerala economy.
- CO3 It provides a thorough knowledge about the demographic features of the Kerala.
- CO4 It also provides an insight into state finance and planning

5 hours per week over a semester

EC1642 Core XII Financial Economics (credit 4)

- CO1 Students will be able to understand the basic concepts in financial economics
- CO2 Now they will have an idea on capital market, financial market as well as security analysis.

- **CO3** to develop comprehensive knowledge on the role of finance in the operation of an economy.
- CO4 It also enables them to know the operation of the Indian financial system.

5 hours per week over a semester

EC1643 CoreXIII Basic Tools for Economics II(credit 4)

- **CO1** It will help the students to familiarize with the statistical tools and techniques.
- CO2 with the help of correlation, regression and probability the students can know practically apply economic theory into empirical data
- **CO3** It will help the students to apply mathematical tools in economics.
- **CO4** It provides a good knowledge about index numbers.

5 hours per week over a semester

EC1644 Core XIV International Economics (credit 3)

- **CO1** It will help the students to understand the basic concepts and theories of international trade.
- CO2 They know the evolution and growth of trade.
- CO3 How and why do countries trade is no more a puzzle before the students.
- **CO4** It enables the students to have a basic understanding of the emerging trends and issues in the field of International economic system.
- 6 hours per week over a semester
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EC1661. 1 Open II Agricultural Economics (credit 2)

- CO1 It will provide a detailed treatment of issues in agricultural economics
- CO2 Students will get a thorough understanding on various agricultural models.
- 6 hours per week over a semester

EC 1661.2 Industrial economics

• CO3 It will make the students to know the various industrial location theories

- CO4 Industrial development of India and the issues they face will be studied in detail and the students will be able to critically evaluate any contemporary issues in this regard.
- 6 hours per week over a semester

EC1645 Project/Dissertation (credit 4)

- CO1 It will help the students to identify an economic problem relevant to the study of economics
- **CO2** It also help the students to analyse both primary and secondary data
- **CO3** It will also help the students to get into a conclusion about the economic problem they identified.
- 3 hours per week over a semester

EC.1131 Complementary I Foundations of economic theory (credit 2)

- CO1 It will provide a basic understanding of economic concepts and theories.
- CO2 The students will know the micro economic theories.
- **CO3** It will enable the students to analyse various market structures in the economy.
- **CO4** It provides a detailed knowledge about theory of production.

6 hours per week over a semester

EC.1231 Complementary III Money and banking (credit 3)

- **CO1** It will enable the students to get an idea about the nature and significance of money and banking.
- CO2 Will be able to differentiate between various kinds of banks.
- **CO3** It provides the basic understanding about the importance of money and banking in modern era.
- **Co4** The students will acquire knowledge about different types of inflation happening in the economy.

6 hours per week over a semester

EC 1331 Complementary V Public finance and Trade (credit 3)

- **CO1**It will help the students to analyse the basic theoretical framework of public finance and trade.
- CO2Will be able to say why nations do trade?
- CO3 It also provides the basic theoretical framework of budgetary mechanism in India.
- **CO4** It provides various aspects of international trade.

6 hours per week over a semester

EC.1431 Complementary VII Indian Economy since Independence (credit 3)

- CO1The students will be able to familiarize the various concepts of national income
- **CO2**Create awareness about the different sectors of the Indian economy.
- CO3 They will get an idea about the basic features of the Indian economy
- **CO4** They will also get a clear picture about the demographic features of India.

6 hours per week over a semester

Course Outcome of Physics

S1

PY1141 Basic Mechanics and Properties of Matter

- Students will have knowledge of kinematic and kinetic analyses and energy and momentum methods for rigid bodies, knowledge of kinematic and kinetic analyses and energy and momentum methods for particles and systems of particles. They will be able to calculate moments of inertia of various bodies.
- Develop an understanding of vibrating systems such as springs. Solve problems involving pendulums and many other vibrating bodies. Have understanding of simple harmonic motion and relate it to sinusoidal variations. Know about the acoustics of buildings.
- Knowledge of elasticity help the students to calculate the various stresses and strains for different loading conditions of structures. Able to describe the surface tension and viscosity phenomena and their daily life applications.
 2 theory hour/week
 2 practical hour /week

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S2 PY1221 Classical Mechanics

After the completion of the course the students will be able to

- Know about Kinematics and dynamics of a system of particles
- Consolidate the understanding of fundamental concepts in mechanics such as force, energy, momentum etc. more rigorously as needed for further studies in physics. Student uses the d'Alambert principle to derive the Lagrange equations.
- Compute the generalized momentum and conserved quantities without solving the equations of motion.
- Describe and understand planar motion of a rigid body, central forces, Kepler problem

2 theory hour/week 2 practical hour /week

S3

PY1341 Thermodynamics and Statistical Physics

After studying this course the student will be learned:

• The Zeroth law of thermodynamics deals with thermal equilibrium and provides a means of measuring temperature.

- The first law of thermodynamics deals with the conservation of energy and introduces the concept of internal energy.
- The second law of thermodynamics dictates the limits on the conversion of heat into work and provides the yard stick to measure the performance of various processes. It also tells whether a particular process is feasible or not and specifies the direction in which a process will proceed. As a consequence it also introduces the concept of entropy.
- The third law defines the absolute zero of entropy.
- This course develops concepts in classical laws of thermodynamics and their application, postulates of statistical mechanics, statistical interpretation of thermodynamics, micro canonical, canonical and grant canonical ensembles; the methods of statistical mechanics are used to develop the statistics for Bose-Einstein, Fermi-Dirac and photon gases
- 3 theory hour/week
- 2 practical hour /week

S4 PY1441 Electrodynamics

On completion of the course the student shall be able to:

- Formulate potential problems within electrostatics, Magnetostatics and stationary current distributions in linear, isotropic media, and also solve such problems in simple geometries.
- Determine the transient and AC response of circuits containing R, L and C components;
- Use methods of vector calculus to solve problems in electromagnetism.
- Describe and explain the relationship between the electric field and the electrostatic potential.
- Describe and explain the generation of magnetic fields by electrical currents.
- Describe and explain electrodynamics, and explain Maxwell's equations in vacuum. Understand the physical significance of Maxwell's equations and hence estimate the speed of light.
 - 3 theory hour/week
 - 2 practical hour /week

S5

PY1541 Methodology in Physics & Relativistic Mechanics

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

- Establish the non-existence of the hypothesized stationary ether through the null result of Michelson-Morley experiments with interferometer.
- Explain the true nature of Newtonian mechanics and Lorentz Transformation equations.
- Understand the concept of constant relative motion of different bodies in different frames of references.

- Use Lorentz Transformation equation to describe events and how it will be reported by different observers in different frames of references
- Determine proper time and dilated time, determine proper length and contracted length, proof the invariability of physical laws
- Understand some basic concepts of research and its methodologies
- Identify appropriate research topics and select and define appropriate research problem
- Prepare a project proposal (to undertake a project)
- Understand the statistical tools of data analysis and have knowledge of various types of errors in observation and different methods of error analysis

PY1542 Quantum Mechanics

After completion of the course the students will

- Be familiar with the main aspects of the historical development of quantum mechanics and be able to discuss and interpret experiments that reveal the wave properties of matter, as well as how this motivates replacing classical mechanics with a wave equation.
- Understand the central concepts and principles in quantum mechanics, such as the Schrödinger equation, the wave function and its statistical interpretation, the uncertainty principle, stationary and non-stationary states, time evolution of solutions, as well as the relation between quantum mechanics and linear algebra. This includes an understanding of elementary concepts in statistics, such as expectation values and variance.
- Be able to solve the Schrödinger equation for simple systems in one to three dimensions. Be able to use these solutions to calculate their time evolution, associated probabilities, expectation values, and uncertainties, as well as give concise physical interpretations and reasoning underlying the mathematical results.

PY1543 Basic Electronics

This course will make the students able to

- Understand the diode and transistor characteristics.
- Verify the rectifier circuits using diodes.
- Design the biasing circuits like self biasing.
- Design various amplifiers like CE, CB, CC
- Understand the construction, operation and characteristics of JFET and MOSFET, which can be used in the design of amplifiers.
- Understand various operations that can be performed using Operational Amplifiers.

PY1544 Atomic and Molecular Physics

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

- Understand the technique of spectroscopy.
- Identify the basic components of spectroscopic instrumentation.
- Demonstrate a working knowledge of mass spectroscopy (MS), ultraviolet-visible (UV-Vis) spectroscopy, infrared (IR) spectroscopy, and nuclear magnetic resonance (NMR) spectroscopy.
- Describe how a mass spectrometer produces its spectral patterns.
- Explain the information obtained from a UV-Vis spectrophotometer and how it can be used for analysis.
- Illustrate the mechanisms that give rise to the infrared absorption bands and identify to which functional groups each correspond.
- Demonstrate an understanding of the processes responsible for NMR chemical shifts and splitting patterns.

PY1551 Energy Physics

- Student will be able to understand:
- The concept of solar energy and their applications in different fields.
- The ways to harness energy from nonconventional energy sources like geothermal, wind and ocean.
- The ways of nuclear energy production and management of environmental problems due nuclear waste. The harmful effect of nuclear waste on air, water and living things.

19 theory hour /week

6 practical hour/week

S6

PY1641 Solid State Physics

Students should gain basic knowledge of solid state physics. This implies that the student will:

- Be able to account for interatomic forces and bonds
- Have a basic knowledge of crystal systems and spatial symmetries
- Be able to account for how crystalline materials are studied using diffraction, including concepts like the Ewald sphere, form factor, structure factor, and scattering amplitude.
- Be able to perform structure determination of simple structures

- Understand the concept of reciprocal space and be able to use it as a tool Know the significance of Brillouin zones
- Be able to calculate thermal and electrical properties in the free-electron model
- Know Bloch's theorem and what energy bands are
- Know the fundamental principles of semiconductors, including pn-junctions, and be able to estimate the charge carrier mobility and density.
- Be able to account for what the Fermi surface is and how it can be measured
- Be able to outline the importance of solid state physics in the modern society.

PY1642 Nuclear & Particle Physics

Upon completion of this course, the student should be able to:

- Identify basic nuclear properties and outline their theoretical descriptions
- Understand various aspects of radioactivity
- Study about particle accelerator and nuclear detectors
- Know nuclear fusion, fission and nuclear reactors
- Calculate Q-values for alpha and beta decays and for nuclear reactions
- Apply conservation laws to nuclear reactions

PY 1643 Classical and Modern Optics

On completion of the course students are expected to

- Explain and calculate the properties of light including propagation, interference, diffraction and polarization, by using the theory of waves
- Describe the basic laser physics, working of lasers, holography and principle of propagation of light in optical fibers.

PY1644 Computer Science

Course Outcomes

- Have a thorough understanding of the fundamental concepts and techniques used in digital electronics. Understand and examine the structure of various number systems and its application in digital design.
- Ability to understand, analyze and design various combinational and sequential circuits.
- Develop fundamental programming skill using C programmes.

• Apply numerical computing, to find several iterative solution for problems.

PY1651 Elective Course- Nano Science and Technology

On completion of the course the student shall be able to:

- Explain general arguments and phenomena on the nanoscale and combine these in its future use within the academic sector and/or interdisciplinary areas.
- Summarise the changes of different properties as materials transfer to low dimensional.
- Suggest and creatively evaluate new material combinations on the basis of known properties.
- Compare and test some of the tools that are used in production/synthesis and research/analysis of nanostructured materials.

19 theory hour /week 6practical hour/week

PRACTICALS

PY1442- MECHANICS, PROPERTIES OF MATTER, HEAT AND ACOUSTICS PY1645-OPTICS, ELECTRICITY AND MAGNETISM PY1646—ELECTRNICS AND COMPUTER SCIENCE

- Able to analyze the physical principle involved in the various instruments, also relate the principle to new application.
- The various **experiments** in the areas of optics, mechanics, thermal and computational **physics** will nurture the students in all branches of physics.
- Develop an understanding of the scientific method and an ability to apply the scientific method in practice.
- Possess an ability to accurately record, analyze, interpret and critically evaluate your lab findings.

Course Outcomes of Zoology Core Courses

ZO1141 Animal Diversity I

CO 1: Provides students with an in-depth knowledge of the diversity in form, structure and habits of invertebrates.

CO 1: Learn basics of systematics and understand hierarchy of different categories.

CO 2: Learn diagnostic characteristics of different phyla through brief studies of examples.

CO 3: Obtain overview of economically important invertebrates.

CO 4: Classify all the invertebrate phyla up to class.

Credits: 3 credits

3 Theory periods of one hour over a semester

1 Practical period of one hour over a semester

ZO1241 Animal Diversity II

CO1: Provides students with an in-depth knowledge of the diversity in form, structure and habits of vertebrates

CO2: Learn general characters and classification of different classes of vertebrates.

CO3: Understand the vertebrate evolutionary tree.

CO4: Obtain overview of economically important vertebrates.

Credits: 3 credits

3 Theory periods of one hour over a semester

1 Practical period of one hour over a semester

ZO1341 Methodology and Perspectives of Zoology

CO1: Introduce the methodology and perspectives of science in general so as to enable the students to systematically peruse Zoology in relation to other disciplines that come under the rubric of science.

CO2: Learn fundamental characteristics of science as a human enterprise.

CO3: Understand how science works.

CO4 : Study the application of scientific methods.

Credits: 3 credits

3 Theory periods of one hour over a semester

ZO1441 Cell Biology

CO 1: Knowledge regarding the fundamental structure, biochemistry and function of the cell.

CO2: Understanding ultra structure of prokaryotic and eukaryotic cells.

CO3: Understanding the Structure and functions of all the organelles in the cells.

CO4: Studying the mechanism and complications of cell division.

CO 5: Knowledge regarding biology of cancer.

Credits: 3 credits

3 Theory periods of one hour over a semester

ZO1541 Genetics and Biotechnology

CO1: Study the under lying genetic mechanism operating in man and state.

CO2: Learn the mechanism of crossing over and inheritance pattern in man.

CO3: Understand the principles and techniques involved in DNA technology.

CO4: Get an overview of modern techniques like PCR, Hybirodoma technology, gene therapy and human cloning.

Credits: 4 credits

4 Theory periods of one hour over a semester

ZO1542 Immunology and Microbiology

CO1: Understand the principles and mechanism of immunology.

CO2: Learn malfunctioning and disorders of immune system.

CO3: Gain a broad understanding of microbes and their economic importance.

CO4: Understanding the scope and importance of clinical immunology and creating an awareness about the inherent dangers of microbes.

Credits: 4 credits

4 Theory periods of one hour over a semester

ZO1543 Physiology and Biological Chemistry

CO1: Form a perspective of health and biology through the study of human physiology.

CO2: Study different systems and their inherent disorders and deficiencies.

CO3: Learn the structure and functions of bio-molecules and their role in metabolism.

CO4: Learn mechanism of enzyme action and other related information.

Credits: 4 credits

5 Theory periods of one hour over a semester

ZO1544 Practical I - Methodology and Perspectives of Zoology, Animal Diversity I and II

CO1: Training experience in anatomy through simple dissection and mounting.

CO2: Familiarization with conventional organ system in different animals.

CO3: Identify and study preserved specimens of various economically important animals.

CO4: Prepare solutions of various normality and morality.

Credits: 4 credits

1 Practical period of two hours over a semester

ZO1621 General Informatics, Bioinformatics and Molecular Biology

CO1: Review basic concepts and functional knowledge in the field of informatics.

CO2: Get awareness about the nature of the emerging digital knowledge society.

CO3: Get awareness about social issues and concerns in the use of digital technology.

CO4: Learn the nature, application and scope of Bioinformatics.

Credits: 4 credits

5 Theory periods of one hour over a semester

ZO1641 Developmental Biology and Experimental Embryology

CO1: Study various stages involved in the developing embryo.

CO2: Study initial developmental procedures involved in Amphioxus, Frog and Chick.

CO3: Understand[the experimental procedures of embryology.

CO4: Understand the teratogenic effects of various drugs and chemicals.

Credits: 4 credits

4 Theory periods of one hour over a semester

ZO1642 Ecology, Ethology, Evolution and Zoogeography

CO1: Knowledge regarding principles, applications and management of environmental science.

CO2: Study the inherent morphological and physiological bases of behavioral pattern exhibited by vertebrates.

CO3: Knowledge of organic evolution with special reference to man.

CO4: Enhance the concept of nature and her resources and appreciating the process and product of organic evolution.

Credits: 3 credits

4 Theory periods of one hour over a semester

ZO1643 Practical II - Biotechnology, Immunology and Microbiology

CO1: Prepare and observe chromosomal arrangements during cell division.

CO2: Study chromosomal aberrations in man.

CO3: Gain of broad knowledge of conventional biotechnological procedures.

CO4: Perform routine blood analysis.

Credits: 4 credits

1 Practical period of two hours over a semester

ZO1644 Practical III – Physiology and Biological Chemistry, Molecular Biology and Bioinformatics

- CO1: Understand basic principles in physiology.
- CO2: Learn clinical procedures for blood and urine analysis.
- CO3: Skill in simple biochemical laboratory procedures.

Credits: 3 credits

1 Practical period of two hours over a semester

ZO1645 Practical IV – Developmental Biology, Ecology, Ethology and Zoogeography

CO1: Identify various stages of embryological development of Amphioxus, frog and chick through slides and models.

- CO2: Estimate various water quality parameters for aquaculture.
- CO3: Extract and study soil organisms using Berlese funnel.
- CO4: Study and identify different zoogeographical realms with fauna.

Credits: 3 credits

1 Practical period of two hours over a semester

Course Outcomes of Elective Course in Zoology

ZO1651.2 Ornamental Fresh Water Fish Production

- CO1: Learn scientific method of setting an aquarium.
- CO2: Learn culture breeding and marketing techniques of common indigenous fishes.
- CO3: Understand the procedures of trading of ornamental fish.
- CO4: Various Fish diseases, their prevention and treatment.

Credits: 2 credits

3 Theory periods of one hour over a semester

Course Outcomes of Open Course in Zoology

Open Course – ZO1551.1 Public Health and Hygiene

- CO1: Learn principles of nutrition and dietetics.
- \CO2: Understand the ill effects of modern lifestyle.
- CO3: Study the advantages of being hygienic.
- CO4: Understand various aspects of mental wellbeing.

Credits: 2 credits

3 Theory periods of one hour over a semester

Course Outcomes of Zoology Complementary Courses

ZO1131 – Animal Diversity I – Non Chordata

- CO1: Understand the fascinating world of invertebrates
- \CO2: Understand the evolution, hierarchy and classification of invertebrate phyla
- CO3: Study the basic systematic of various groups
- CO4: Understand the economic importance of invertebrates

Credits: 2 credits

- 2 Theory periods of one hour over a semester
- 1 Practical period of two hour over a semester

ZO1231 – Animal Diversity 2 – Chordata

- CO1: Understand the nature and bionomics of vertebrates
- CO2: Understand the evolution, hierarchy and classification of different classes of chordates
- CO3: Get an idea on the morphology and physiology of various organisms
- CO4: Study the adaptations and economic importance of specific vertebrates

Credits: 2 credits

2 Theory periods of one hour over a semester

1 Practical period of two hour over a semester

ZO1331 – Functional Zoology

CO1: Familiarize the physiology of human body and to take precautionary measures to safe guard own health.

CO2: Study the structure and function of different systems in human body

CO3: Understand the etiology of common physiological disorders, syndromes and diseases

Credits: 3 credits

3 Theory periods of one hour over a semester

ZO1431 – Applied Zoology

CO1: Get an idea of the applied branches of zoology with a view of educating youngsters on the possibilities of self employment

CO2: Study the culture and breeding of common edible and ornamental fishes of Kerala and art of aquarium keeping

CO3: Understand the human genomics and reproductive biology

CO4: Understand the stem cell research and pre-natal diagnostics techniques

Credits: 3 credits

3 Theory periods of one hour over a semester

ZO1432 - Practical I Animal Diversity I &II, Functional Zoology and Applied Zoology

CO 1: provide an hands- on training experience in anatomy through simple dissections and mountings

CO 2: familiarize with conventional organ system in common, easily available animals

CO 3: study and carry out routine clinical analysis of blood and urine

CO 4: emphasize the adage that 'seeing is believing' typical examples and economically important specimen (preserved) to be studied

Credits: 4 credits

1 Practical period of two hours over a semester

PROGRAMME - BA MALAYALAM LANGUAGE AND LITERATURE

Cos of the course മലയാളകവിത (credit 3)

4 hour per week over a semester

CO1 മലയാള കവിതയെ സംബന്ധിച്ച സാമാന്യജ്ഞാനം നൽകുന്നു.

CO2 പഠിതാക്കളിൽ കവ്യഭിരുചി വളർത്തുന്നു.

CO3 കാവ്യാസ്വാദനത്തിന് വിദ്യാർത്ഥികളെ സജ്ജരാക്കുന്നു.

CO4 കാവ്യരചനയ്ക്ക് വിദ്യാർത്ഥികളെ പ്രാപ്തരാക്കുന്നു.

Cos of the course നോവൽ: ചരിത്രവും പാഠവും (credit 4)

6 hour per week over a semester

co1 മലയാള നോവലുകളുടെ പ്രാരംഭ ചരിത്രം.

co2 മലയാള നോവലുകളുടെ ആവിർഭാവത്തിനിടയാക്കിയ സാഹചര്യങ്ങൾ.

cos നോവലിന്റെ ആദ്യകാലരൂപമാത്യകകൾ, ഇതിവ്യത്തം.

co4 കേരളത്തിലെ മാറിയ സാമൂഹിക സാഹചര്യം, പാശ്ചാത്യസാഹിത്യവുമായി എഴുത്തുകാർക്ക് ഉണ്ടായിരുന്ന സമ്പർക്കം എന്നിവയെക്കുറിച്ചുള്ള അവബോധം.

cos 'ആധുനികത' എന്ത് എന്ന് മനസ്സിലാക്കികൊടുക്കുന്നു.

co6 ഭാഷയിലും ആഖ്യാനത്തിലും സംഭവിച്ചുകൊണ്ടിരിക്കുന്ന മാറ്റം.

Cos of the course കേരളസംസ്കാരം - ഭാഗം1 (credit 4)

3 hour per week over a semester

co1 കേരളത്തിന്റെ സാംസ്കാരിക പശ്ചാത്തലം

co2 ഭാഷ,കലാരൂപങ്ങൾ എന്നിവയുടെ വികാസത്തിന് കാരണമായവസ്തുതകൾ.

cos വിമർശനാത്മകചിന്ത വളർത്തുന്നതിനു സഹായിക്കുന്നു.

co4 വിദ്യാർത്ഥികളിൽ മികച്ച പൗരത്വം വികസിപ്പിച്ചെടുക്കുന്നു.

COs of the course ഗദ്യസാഹിത്യം (credit 3)

4 hour per week over a semester

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co1 മലയാള ഗദ്യസാഹിത്യ മാതൃകകൾ പരിചയപ്പെടുത്തുന്നു.
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coz മലയാളഗദ്യം ഉത്ഭവം, വികാസം, പരിണാമം ഇവയെപ്പറ്റിയുള്ള സാമാന്യബോധം

cos മലയാള സാഹിത്യവികാസപരിണാമങ്ങളെപ്പറ്റി സാമാന്യജ്ഞാനം.

co4 സാഹിത്യവും സാഹിത്യേതരവുമായ വിഷയങ്ങളെ സംബന്ധിക്കുന്ന വിവരങ്ങൾ.

COs of the course നാടകം:ചരിത്രം,പാഠo, പ്രയോഗം (credit 4)

6 hour per week over a semester

co1 നാടകം എന്ന കലാരൂപത്തെ സമഗ്രമായി പരിചയപ്പെടുത്തുക.

co2 നാടകകലയുടെ ഉത്ഭവവികാസപരിണാമചരിത്രം മനസ്സിലക്കികൊടുക്കുക.

cos അരങ്ങു സങ്കല്പങ്ങൾ, ആശയസങ്കൽപ്പത്തിൽ വന്ന വ്യതിയാനങ്ങൾ.

co4 ക്ലാസ്സിക്,വിനോദ,അനുഷ്ഠാന നാടകങ്ങളെക്കുറിച്ച് സാമാന്യജ്ഞാനം.

cos നാടകകലയുടെ വിവിധതലങ്ങളിലുള്ള ആധുനികീകരണത്തെക്കുറിച്ച് സാമാന്യ ബോധം.

cos ഓരോ കാലഘട്ടത്തിലെയും പ്രധാന നാടകങ്ങളെയും നാടകക്യത്തുക്കളേയും പരിചയപ്പെടുത്തുന്നു.

COs of the course കേരളസംസ്കാരം ഭാഗം 2 (credit 3)

3 hour per week over a semester

co1 ഭൂതകാലസംസ്കാരത്തെപ്പറ്റിയും ചുറ്റുപാടുകളെപ്പറ്റിയും മനസ്സിലാക്കുന്നു. co2 സാമൂഹിക സാമ്പത്തിക സാംസ്കാരിക രംഗങ്ങളിൽ ഉണ്ടായ മാറ്റത്തെക്കുറിച്ച് അറിവുനൽകുന്നു. cos സാമൂഹിക പരിഷ്കരണപ്രസ്ഥാനങ്ങളെക്കുറിച്ച് അറിവുനൽകുന്നു. co4 കേരളചരിത്രത്തെ സമഗ്രമായ് മനസ്സിലാക്കുന്നു.

Co₅ of the course ദൃശ്യകലാസാഹിത്യം (credit 4)

5 hour per week over a semester

co1 ദൃശ്യകലാസംസ്കാര സമ്പന്നതയെക്കുറിച്ച് സാമാന്യമായ അറിവ്. co2 കഥകളി,തുള്ളൽ,നാടകം,സിനിമ എന്നീ ദൃശ്യകലകൾ,അവയ്ക്ക് ആധാരമായ സാഹിത്യ പാഠങ്ങളെയും പരിചയപ്പെടുത്തുന്നു. co3 ആട്ടക്കഥാ സാഹിത്യത്തെക്കുറിച്ച് സാമാന്യജ്ഞാനം നൽകുന്നു. co4 തിരക്കഥാസാഹിത്യത്തെക്കുറിച്ച് സാമാന്യജ്ഞാനം നൽകുന്നു. co5 അരങ്ങുസാഹിത്യം പരിചയപ്പെടുത്തുന്നു.

cos പ്രകടനാത്മകത,പ്രത്യയശാസ്ത്രം ഇവ മനസ്സിലാക്കുന്നു.

Co₅ of the courseആധുനിക സാങ്കേതികവിദ്യയും മലയാള ഭാഷാപഠനവും. (credit 3)

4 hour per week over a semester

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co1 വിവരസാങ്കേതികവിദ്യയെക്കുറിച്ച് സാമാന്യജ്ഞാനം നൽകുന്നു.
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coz മലയാളം കമ്പ്യൂട്ടിംഗ് പഠിക്കുന്നു.
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cos ആധുനിക സാങ്കേതിക വിദ്യയുടെ സാദ്ധ്യതകൾ പ്രയോജനപ്പെടുത്തി
മലയാള ഭാഷയും സാഹിത്യവും പഠിപ്പിക്കുന്നു.
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co4 സൈബർഭാഷാവ്യവഹാരമാത്യകകളും അവയുടെ സാധ്യതകളും
മനസ്സിലാക്കുന്നു.
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cos മലയാളത്തിലെ സൈബർസാഹിത്യത്തെക്കുറിച്ച് സമന്യപരിചയം
നൽകുന്നു.
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coഞ ഇ-വായന, ബ്ലോഗ് ഇവ മനസ്സിലാക്കിക്കൊടുക്കുന്നു.

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cor ഇ-മെയിൽ വിലാസം തുടങ്ങുന്നത് മനസ്സിലാക്കുന്നു.
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cos കമ്പ്യൂട്ടറിൽ പ്രായോഗിക പരിശീലനം നൽകുന്നു.
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Cos of the course സാഹിത്യസിദ്ധാന്തങ്ങൾ- പൗരസ്ത്യവുംപാശ്ചാത്യവും (credit 4)

5 hour per week over a semester

co1 പൗരസ്ത്യ പാശ്ചാത്യ കാവ്യശാസ്ത്ര സിദ്ധാന്തങ്ങളെ സാമാന്യമായി മനസ്സിലാക്കുന്നു.

coz കാവ്യാസ്ഥാദനശേഷിയും നിരൂപണസിദ്ധിയും വർദ്ധിപ്പിക്കുവാൻ പ്രാപ്തരാക്കുന്നു.

cos സിദ്ധാന്ത പഠനത്തോടൊപ്പം പ്രായോഗികജ്ഞാനം.

co4 പ്രധാന പ്രസ്ഥാനങ്ങളെയും സിദ്ധാന്തങ്ങളെയും കുറിച്ചുള്ള അവബോധം.

cosകാവ്യശാസ്ത്ര തത്വങ്ങൾ മനസ്സിലാക്കുന്നു.

COs of the course പരിസ്ഥിതി സിദ്ധാന്തവും ആവിഷ്കാരവും (credit 3)

3 hour per week over a semester

co1 പരിസ്ഥിതി ദർശനവുമായി ബന്ധപ്പെട്ട ആശയങ്ങൾ, തത്വങ്ങൾ എന്നിവയെക്കുറിച്ചുള്ള അറിവ് .

coz പ്രകൃതി സ്രോതസ്സുകളെയും അവയുമായി ബന്ധപ്പെട്ട പ്രശ്നങ്ങളെയും മനസ്സിലാക്കുന്നു.

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cos ഭൂമിയിൽ ജീവൻ നിലനിർത്തുന്നതിന് ആവശ്യമായ
സാഹചര്യങ്ങളെക്കുറിച്ച് സാമാന്യജ്ഞാനം നൽകുന്നു.
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co4 സർഗ്ഗാത്മകതലത്തിൽ പരിസ്ഥിതിദർശനം മനസ്സിലാക്കി കലയെയും സാഹിത്യ ത്തെയും വിലയിരുത്തുവാനുള്ള മനോഭാവം.

cos പാരിസ്ഥിതിക മാർക്സിസത്തെക്കുറിച്ച് സാമാന്യ അറിവുനൽകുന്നു.

Co₅ of the course വിനിമയം, സർഗ്ഗാത്മകരചന,ഭാഷാവബോധം (credit 4)

5 hour per week over a semester

co1 ആശയവിനിമയ പ്രക്രിയകളും ഘടകങ്ങളും പരിചയപ്പെടുത്തുന്നു.

coz ആശയവിനിമയ സിദ്ധാന്തങ്ങളെക്കുറിച്ചും മാതൃകകളെക്കുറിച്ചും അവബോധം .

cos ഭരണകാര്യങ്ങൾ മാത്യഭാഷയിലൂടെ നിർവഹിക്കപ്പെടണം എന്ന ജ്ഞാനം.

co4 ഭരണഭാഷ മലയാളം- പ്രശ്നങ്ങൾ ഇവ ബോധ്യപ്പെടുത്തുന്നു.

cos ഭരണഭാഷ മലയാളം-വ്യാപനത്തിന് സജ്ജരാക്കുന്നു.

cos വിവർത്തനത്തിൽ പ്രായോഗിക പരിശീലനം നൽകുന്നു.

Co₅ of th e course മലയാള കവിത - പൂർവ്വഘട്ടം (credit 4)

5 hour per week over a semester

co1 മലയാളത്തിലെ കാവ്യശാഖയുടെ ആവിർഭാവദശ മുതലുള്ള വ്യത്യസ്ത കാവ്യസമ്പ്രദായങ്ങൾ .

coz പ്രാചീന മധ്യകാലഘട്ടങ്ങളിലെ കാവ്യപ്രസ്ഥാനങ്ങളെ പരിചയപ്പെടുത്തുന്നു.

cos മലയാള ഭാഷയ്ക്കും സാഹിത്യത്തിനും സംഭവിച്ച പരിണാമ വിധങ്ങളെക്കുറിച്ച് സാമാന്യജ്ഞാനം നൽകുന്നു.

co4 താളം,വൃത്തം,അലങ്കാരം ഇവയെക്കുറിച്ച് അറിവുപകരുന്നു.

cos കാവ്യാസ്ഥാദനത്തിനും കാവ്യഭാഷാ പരിണാമപഠനത്തിനും വഴിയൊരുക്കുന്നു.

COs of the course മലയാളസാഹിത്യനിരൂപണം (credit 3)

4 hour per week over a semester

co1 മലയാളസാഹിത്യനിരൂപണ തുടക്കത്തെക്കുറിച്ച് സാമാന്യജ്ഞാനം നൽകുന്നു.

co2 സാഹിത്യനിരൂപകരെക്കുറിച്ചു പഠിക്കുന്നതിനു വഴിയൊരുക്കുന്നു.

cos ആധുനികനിരൂപണത്തെക്കുറിച്ചുള്ള അവബോധം നൽകുന്നു.

co4 പ്രമുഖ നിരൂപകരുടെ നിരൂപണങ്ങൾ വായിക്കുവാൻ പ്രാപ്തരാക്കുന്നു. cos മൂല്യനിർണയം,വിശകലനം തുടങ്ങിയ ശേഷികൾ വികസിപ്പിക്കുന്നു.

Co₅ of the course ദളിതെഴുത്ത്, പെണ്ണെഴുത്ത്-സിദ്ധാന്തവും ആവിഷ്ക്കാരവും. (credit 3)

3 hour per week over a semester

co1 ദളിതെഴുത്തിനും പെണ്ണെഴുത്തിനും ആസ്പദമായ അവസ്ഥകൾ സിദ്ധാന്തങ്ങൾ.

co2 ആവിഷ്ക്കാരതലത്തിൽ ദളിതെഴുത്ത് പെണ്ണെഴുത്ത് മാതൃകകൾ.

cos ദളിത് എന്ന പദനിഷ്പത്തിയെക്കുറിച്ച് അറിവുനൽകുന്നു.

co4 മലയാളത്തിലെ ഫെമിനിസ്റ്റ് എഴുത്തുകാരെ സാമാന്യമായി പരിചയപ്പെടുത്തുന്നു.

Cos of the course ഭാഷാശാസ്ത്രം ഭാഷാചരിത്രം (credit 4)

4 hour per week over a semester

co1 ഭാഷയുടെ ശാസ്ത്രീയപഠനങ്ങളെക്കുറിച്ച് അറിവുനൽകുന്നു.

coz ഭാഷാസ്വരൂപം അപഗ്രഥിച്ചു ഭാഷാനിയമം രൂപവത്ക്കരിക്കുന്നതിൽ പ്രാപ്തരാക്കുന്നു.

cos ഭാഷാശാസ്ത്രസംബന്ധമായ സിദ്ധാന്തങ്ങൾ മനസ്സിലാക്കികൊടുക്കുന്നു.

co4 ഭാഷയുടെ സവിശേഷതകളെക്കുറിച്ച് അവബോധം നൽകുന്നു.

cos ഭാഷയുടെ ഉല്പത്തിവികാസചരിത്രം മനസ്സിലാക്കുന്നു.

cos ഭാഷ ,ഭാഷാഭേദം,സമകാലീക ഭാഷാഭേദം ഇവ മനസ്സിലാക്കുന്നു.

Cos of the course ചെറുകഥാപഠനം (credit 4)

4 hour per week over a semester

co1 ചെറുകഥയുടെ ചരിത്രത്തെക്കുറിച്ച് മനസ്സിലാക്കിക്കൊടുക്കുന്നു.
co2 ആദ്യകാലമലയാളചെറുകഥകളുടെ വിവരണാത്മകമായ അവതരണം.

cos ലോകചെറുകഥകളെ പരിചയപ്പെടുത്തുന്നു.

co4 അസ്തിത്വദർശനം, അന്യവത്ക്കരണം എന്നിവയെക്കുറിച്ചുള്ള അറിവ്.

cos ചെറുകഥകൾ ആസ്വദിക്കാനും വിശകലനം ചെയ്യാനുമുള്ള അറിവു നേടുന്നു.

COs of the course നാടോടിവിജ്ഞാനീയം (credit 2)

3 hour per week over a semester

co1 കേരളസംസ്കൃതിയും പറമ്പര്യവുമായി ബന്ധപ്പെട്ട നാടോടി വിജ്ഞാനീയ ത്തെക്കുറിച്ചുള്ള അറിവ്.

co2 നാടോടിവിജ്ഞാനീയം എന്ന പഠനശാഖയെ നൂതനാർത്ഥത്തിൽ അറിയാനുള്ള അവസരം.

cos നാട്ടറിവുകളുടെ വ്യത്യസ്ത ജനുസ്സുകളും താരതമ്യഭേദങ്ങളും.

co4 സൗന്ദര്യശാസ്ത്രപരവും സാംസ്കാരികവുമായ ഘടകങ്ങൾ.

cos ഫോക് ലോർ ശേഖരണത്തിനുള്ള ശാസ്ത്രീയമായ പ്രയോഗവൈദഗ്ദ്ധ്യം.

COs of the course ജീവചരിത്രം, ആത്മകഥ,യാത്രാനുഭവം (credit 4)

4 hour per week over a semester

co1 ആത്മകഥ,ജീവചരിത്രം എന്നിവയെക്കുറിച്ച് സാമാന്യജ്ഞാനം നൽകുന്നു.

```
co2 പില്ക്കാലജീവചരിത്രകൃതികൾ പരിചയപ്പെടുത്തുന്നു.
```

cos ആത്മകഥകളിലെ പുതിയപ്രവണതകളെ മനസ്സിലാക്കിക്കൊടുക്കുന്നു.

co4 ജീവചരിത്രനോവലുകളെക്കുറിച്ച് അവബോധം നൽകുന്നു.

cos പ്രശസ്തവ്യക്തികളുടെ ജീവചരിത്രം,ആത്മകഥ എന്നിവ.

cos യാത്രാനുഭവസാഹിത്യം പരിചയപ്പെടുത്തി വിവിധസ്ഥലങ്ങൾ ജീവിതരീതികൾ, സംസ്കാരം ഇവ മനസ്സിലാക്കുന്നു.

co7 യാത്രാനുഭവം എഴുതാൻ പ്രാപ്തരാക്കുന്നു.

Co₅ of the course ചലച്ചിത്രപഠനം (credit 4)

4 hour per week over a semester

co1 ചലച്ചിത്രകലയെക്കുറിച്ച് അറിവുനൽകുന്നു.

co2 തിരക്കഥയെക്കുറിച്ച് സാമാന്യജ്ഞാനം നൽകുന്നു.

cos ഡോക്യൂമെന്റെറികളുടെ പ്രത്യേകതകളെക്കുറിച്ച് അറിവുനൽകുന്നു.

co4 വൃത്യസ്തമായ പ്രമേയങ്ങൾ അവലംബമാക്കി ലഘുചിത്രങ്ങൾക്കുവേണ്ടി തിരക്കഥരചിക്കുന്നു.

cos കഥകൾ തിരക്കഥകളാകുമ്പോൾ സംഭവിക്കുന്ന മാറ്റം.

```
cos ലോകസിനിമകൾ സാമാന്യമായി പരിചയപ്പെടുത്തുന്നു.
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cor സിനിമ എന്ന മാധ്യമത്തെ സമഗ്രമായി മനസ്സിലാക്കുന്നു.

cos മാറ്റങ്ങളുടെ മൗലികത മനസ്സിലാക്കുന്നു.

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CO₅ of the course കേരളീയകലകൾ (credit 2)

3 hour per week over a semester

co1 കലകളുടെ വിശാലമായ ലോകത്തേക്ക് നയിക്കുന്നു. co2 കലാസ്വാദനത്തിലൂടെ മാനസികമായവികാസം സാധ്യമാക്കുന്നു. co3 ശരീരകേന്ദ്രിതകലകളെക്കുറിച്ച് അറിവു നൽകുന്നു. co4 വാസ്തുകേന്ദ്രിത കലകളെക്കുറിച്ച് അറിവുനൽകുന്നു. co5 കലകളുടെ വ്യത്യസ്തധാരകൾ മനസ്സിലാക്കികൊടുക്കുന്നു.

Cos of the course തിരക്കഥാരചന: തത്വവും പ്രയോഗവും (credit 2)

3 hour per week over a semester

co1 തിരക്കഥയുടെ വിവിധഘട്ടങ്ങളെക്കുറിച്ച് സാമാന്യജ്ഞാനം നൽകുന്നു. co2 തിരക്കഥാരചനയെക്കുറിച്ച് അറിവുനൽകുന്നു.

```
cos തിരക്കഥയുടെ പൊതുസ്വഭാവത്തെക്കുറിച്ച് മനസ്സിലാക്കികൊടുക്കുന്നു.
co4 തിരക്കഥാകൃത്തുക്കളെ പരിചയപ്പെടുത്തുന്നു.
```

cos സ്വന്തമായി തിരക്കഥാരചന നടത്താനുള്ള ശേഷി വർദ്ധിപ്പിക്കുന്നു.

Cos of the course മലയാളപത്രപ്രവർത്തനം (credit 2)

3 hour per week over a semester

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co1 പത്രപ്രവർത്തന പ്രാധാന്യം മനസ്സിലാക്കികൊടുക്കുന്നു.
```

coz ആദ്യകാലപത്രങ്ങൾ ഉദ്ധരിച്ചുവിവരണം നൽകുന്നു.

co3 പത്രനിർമ്മാണ രീതിയുടെ വിവിധ ഘട്ടങ്ങൾ മനസ്സിലാക്കികൊടുക്കുന്നു. co4 വാർത്താപ്രാധാന്യത്തെക്കുറിച്ച് അവബോധം നൽകുന്നു.

COs of the course ചലച്ചിത്രപഠനം (credit 2)

3 hour per week over a semester

```
co1 സിനിമയുടെ പ്രാധാന്യവും സ്വാധീനവും മനസ്സിലാക്കികൊടുക്കുന്നു.
co2 വർണ്ണചിത്രങ്ങളുടെ പ്രത്യേകതകളെക്കുറിച്ച് സാമാന്യജ്ഞാനം നൽകുന്നു.
co3 ചലച്ചിത്ര ഭാഷയെക്കുറിച്ച് അവബോധം നൽകുന്നു.
co4 തിരക്കഥയുടെ സിദ്ധാന്തതലങ്ങളെക്കുറിച്ച് മനസ്സിലാക്കികൊടുക്കുന്നു.
```

COs of the course മാധ്യമലോകം (credit 4)

5 hour per week over a semester

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co1 അച്ചടിയുടെ കണ്ടുപിടുത്തത്തെക്കുറിച്ച് അറിവു നൽകുന്നു.
```

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co2 നവോത്ഥാനവും അച്ചടിയും തമ്മിലുള്ള ബന്ധം മനസ്സിലാക്കികൊടുക്കുന്നു.
```

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cos വിവരസാങ്കേതികവിദ്യയിൽ അറിവു നൽകുന്നു.
```

```
co4 മാധ്യമങ്ങളുടെ ഗുണദോഷങ്ങളെക്കുറിച്ച് അറിവുനൽകുന്നു.
```

COs of the course മലയാളവ്യാകരണം (credit 4)

5 hour per week over a semester

co1 അക്ഷരമാലയെക്കുറിച്ച് അറിവുനൽകുന്നു.

co2 വ്യാകരണ പ്രത്യേകതകൾ മനസ്സിലാക്കികൊടുക്കുന്നു.

cos ഭാഷാവബോധം നൽകുന്നു.

co4 നാമം,ക്രിയ എന്നിവയിൽ സാമാന്യജ്ഞാനം നൽകുന്നു.

cos ശരിയായ ഭാഷോച്ചാരണം സാധ്യമാക്കുന്നു.

Cos of the course മലയാളകവിത - ഉത്തരഘട്ടം (credit 4)

5 hour per week over a semester

co1 കാൽപനികകവിതയെക്കുറിച്ച് സാമാന്യജ്ഞാനം നൽകുന്നു.

co2 വിദ്യാർത്ഥികളിൽ കാവ്യാഭിരുചി വളർത്തുന്നു.

co3 ആധുനികകവിതയുടെ സവിശേഷതകൾ മനസ്സിലാക്കികൊടുക്കുന്നു.

co4 കവിത ആസ്വദിക്കുന്നതിന് സജ്ജരാക്കുന്നു.

Cos of the course വിവർത്തനം- സിദ്ധാന്തവും പ്രയോഗവും (credit 3)

4 hour per week over a semester

co1 മാധ്യമമെന്നനിലയിൽ വിവർത്തനത്തിന്റെ പങ്ക് മനസ്സിലാക്കുന്നു.

co2 ആധുനികകാലത്തെ വിവത്തന സാധ്യതകൾ.

cos വിവർത്തനസിദ്ധാന്തങ്ങൾ പരിചയപ്പെടുത്തുന്നു.

co4 പത്രപരസ്യം, വാർത്ത എന്നിവയുടെ വിവർത്തനപ്രത്യേകതകൾ.

cos വിവത്തനം ചെയ്യാൻ വിദ്യാർത്ഥികളെ പ്രാപ്തരാക്കുന്നു.

ELECTIVE

Cos of the course താരതമ്യസാഹിത്യം (credit 2)

3 hour per week over a semester

co1 താരതമ്യസഹിത്യത്തിന്റെ ഉദ്ഭവത്തെക്കുറിച്ച് അറിയുന്നു.

co2 ദേശീയസാഹിത്യത്തെ പരിചയപ്പെടുന്നു.

cos താരതമ്യസാഹിത്യം സംസ്കാരപഠനം ആകുന്നത്.

co4 കൃതികൾ താരതമ്യം ചെയ്തു മനസ്സിലാക്കുന്നു.

Cos of the course തിരക്കഥാരചന: തത്വവും പ്രയോഗവും (credit 2)

3 hour per week over a semester

co1 തിരക്കഥയുടെ വിവിധഘട്ടങ്ങളെക്കുറിച്ച് സാമാന്യജ്ഞാനം നൽകുന്നു. co2 തിരക്കഥാരചനയെക്കുറിച്ച് അറിവുനൽകുന്നു.

cos തിരക്കഥയുടെ പൊതുസ്വഭാവത്തെക്കുറിച്ച് മനസ്സിലാക്കികൊടുക്കുന്നു.

co4 തിരക്കഥാകൃത്തുക്കളെ പരിചയപ്പെടുത്തുന്നു.

cos സ്വന്തമായി തിരക്കഥാരചന നടത്താനുള്ള ശേഷി വർദ്ധിപ്പിക്കുന്നു.

BCom

COs of the course നോവൽ, നാടകം, സഞ്ചാരസാഹിത്യം (credit 4)

4 hour per week over a semester

co1 നോവലുകളുടെ ആദ്യകാല ചരിത്രത്തെക്കുറിച്ച് അവബോധം നൽകുന്നു.

co2 നോവൽ-നാടക വിവർത്തനങ്ങളെക്കുറിച്ച് സാമാന്യജ്ഞാനം നൽകുന്നു.

cos യാത്രാവിവരണങ്ങളെക്കുറിച്ചുള്ള അവബോധം നൽകുന്നു.

co4 ഇതിഹാസപുരാണ പുനർവായനകൾ.

cos പാശ്ചാത്യനാടകങ്ങളുടെ സവിശേഷതകൾ.

COs of the course കവിത, കഥ, ഉപന്യാസം, വിവർത്തനo (credit 4)

4 hour per week over a semester

co1 മലയാള കവിതയുടെ വികാസപരിണാമഘട്ടങ്ങൾ മനസ്സിലാക്കുന്നു.

coz മലയാള ചെറുകഥയുടെ വിവിധഘട്ടങ്ങളെക്കുറിച്ചുള്ള അറിവുനൽകുന്നു.

cos ഉപന്യാസങ്ങളുടെ ആവിർഭാവത്തെക്കുറിച്ചുള്ള അവബോധം നൽകുന്നു.

co4 കവിത,ശൈലികൾ, പദങ്ങൾ എന്നിവ വിവർത്തനം ചെയ്യുന്നു.

cos ഗദ്യാവിഷ്ക്കരണത്തിലെ പ്രത്യേകതകൾ.

coട് ഉപന്യാസരചനയ്ക്കുള്ള ശേഷി വളർത്തുന്നു.

SANSKRIT

COs of the course – POETRY AND GRAMMAR I(credit 2)

3 hour per week over a semester

co1 സംസ്കൃതകാവ്യങ്ങളെ ക്കുറിച്ച് കുട്ടികൾക്ക് അറിവുനൽകുന്നു.

co2 ഭാഷാവബോധം വളർത്തുന്നു.

cos സംസ്കൃതഭാഷ ഉചിതമായി കൈകാര്യം ചെയ്യാനും,പദസമ്പത്ത് വർദ്ധിപ്പിക്കാനും.

co4 സംസ്കൃതകവികളെയും, പണ്ഡിതന്മാരെയും കുറിച്ചുള്ള അറിവ്.

COs of the course –POETRY AND GRAMMER II (credit 2)

3 hour per week over a semester

co1 സംസ്കൃതസാഹിത്യചരിത്രത്തെക്കുറിച്ചും പ്രധാനപ്പെട്ട രചനകളെക്കുറിച്ചുള്ള അറിവ്. co2 സംസ്കൃത മഹാകവ്യങ്ങളെക്കുറിച്ച് അറിവുനൽകുന്നു. co3 സംസ്കൃതം-മലയാളം ബന്ധത്തെക്കുറിച്ച് അറിവുനൽകുന്നു. co4 ഇതിഹാസങ്ങളെയും പുരാണങ്ങളെയും കുറിച്ച് അറിവുനൽകുന്നു. $CO_{\rm S}\,$ of the course – DRAMA AND GRAMMAR $\,$ (credit 2)

3 hour per week over a semester

co1 സംസ്കൃതനാടകങ്ങളെക്കുറിച്ചും നാടകരചയിതാക്കളെക്കുറിച്ചുള്ള അറിവ്.

co2 സംസ്കൃതനാടക ഉത്ഭവം,വികാസം.

co3 സംസ്ക്യത സംഭാഷണത്തിന് പ്രാപ്തരാക്കുന്നു.

co4 ഭാഷാവബോധം വളർത്തുന്നു.

$CO_{\rm S}\,$ of the course -LYRIC POEM, FABLES AND $\,$ TRANSALATION (credit 2) $\,$

3 hour per week over a semester

co1 സംസ്കൃതമഹാകാവ്യങ്ങൾ ,മഹാകവികൾ.

co2 കാളിദാസനും അദ്ധേഹത്തിന്റെ മഹാകാവ്യങ്ങളും.

cos പാരമ്പര്യസംസ്കൃതത്തെക്കുറിച്ചുള്ള ബോധം.

co4 സംസ്ക്യതഭാഷ സംസാരിക്കാനും എഴുതാനും പ്രാപ്തരാക്കുന്നു.

Semster I

PLANT ANATOMY

BO1141

- Understand basic anatomical features of monocot and dicot plants
- Able to identify different types of tissues and tissue systems in plants
- Know the basic concepts in reproductive botany and palynology
- Develop skills in specimen preparation for microscopic observation(light microscopy)
- Outline and describe the process of woody secondary growth in stems.

Number of contact Hours

Theory :2

Practical -2

Semester II

METHODOLOGY AND PERSPECTIVES IN PLANT SCIENCE

BO 1221

- Learn methods of data analysis for experimental data.
- To interpret scientific data using basic statistical methods
- Enable the student to systematically pursue his particular discipline in science in relation to other disciplines that come under the rubric of science

Number of contact Hours

Theory- 2

Practical -2

Semester III

MICROBIOLOGY, PHYCOLOGY, MYCOLOGY AND PLANT PATHOLOGY

- Understand different forms of bacteria
- Able to perform gram staining
- Could identify major classes of algae and fungi
- Preparation and identification of macro and micro preparations of vegetative and reproductive structures of algae and fungi mentioned in the syllabus
- Able to identify algal and fungal specimens up to generic level
- Could understand economic importance ,structure ,reproduction and life cycle of algae fungi and lichens mentioned in the syllabus
- Could identify the disease mentioned in the syllabus with respect to causal organism and symptoms
 Number of contact Hours
 Theory -3
 Practical -2

SEMSTER IV

BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND PALEOBOTANY

- Able to understand the life cycle of bryophytes pteridophytes and gymnosperms mentioned in the syllabus
- Identify the external and internal features of bryophytes pteridophytes and gymnosperms mentioned in the syllabus
- Number of contact Hours
- Theory -3
- Practical -2

SEMESTER V

ANGIOSPERM MORPHOLOGY, SYSTEMATIC BOTANY, ECONOMIC BOTANY, ETHANOBOTANY, AND PHARMACOGNOSY.

BO1541

After completion of this course, the student will demonstrate basic knowledge in each of the

following :

- Know the vegetative characteristics of the plant.
- Learn about the reproductive characteristics of the plant.
- Understand the plant morphology.
- Understand the diversity of angiosperms.
- Understand the comparative account among the families of angiosperms.
- Know the economic importance of the angiosperm plants.
- Understand the distinguishing features of angiosperm families

Number of contact Hours Theory -4 Practical -3

ENVIRONMENTAL STUDIES AND PHYTOGEOGRAPHY

- Familiarize the concept of natural resources, advantage problems they face and conservation
- Understand the role of individuals in conservation of natural resources, sustainable life styles and practice them
- Understand concept ,definition, structure and function of different ecosystems
- To familiarize biodiversity ,its conservation and global initiatives in conservation

- Understand environmental pollution ,legislation and various environmental organization and apply the concept to rectify the problems
- Understand the concept of phytogeography, definition and identify various phytogeographical regions of India

Number of contact Hours Theory -5 Practical -2

CELL BIOLOGY, GENETICS AND EVOLUTIONARY BIOLOGY

BO1542

- List the fundamental features of prokaryotic and eukaryotic cells and methods used to examine them.
- Describe the structure, composition and role of eukaryotic cell membranes.
- Recognise and give roles for the major cell organelles.
- Identify and give roles for components of the extracellular matrix.
- Recall types of cell-cell junctions.
- List the basic tissues and define their specialised structures and embryological origins.
- Name specific processes and proteins involved in membrane transport.
- State the major stages of the cell cycle.
- Relate various parameters important in the control of membrane potential.
- Give examples of intercellular chemical messengers.
- Understand receptor subclasses and their possible uses in cell signalling.
- Give mechanisms by which different messenger-receptor interactions bring about long or short-term changes in cell state.

Number of contact Hours Theory -4 Practical -2

SEMESTER VI

PLANT PHYSIOLOGY AND BIOCHEMISTRY

BO 1641

- Demonstrate and explain research equipments to compare plant response to a changing environment.
- Understand the major effects and physiological mechanisms of growth regulators in plant
- Ability to handle materials safely and analyse various data's in the laboratory.
- Students will be able to determine stomatal index, water absorption and transpirational ratio.
- Understand developmetal patterns and processes of plant.
- Able to demonstrate an understanding of fundamental biochemical principles, structure and function of biomolecules
 Number of contact Hours
 Theory -5
 Practical -2

MOLECULAR BIOLOGY, GENERAL INFORMATICS AND BIOINFORMATICS

- Describe the flow and regulation of biological information.
- Describe the techniques used to collect sequence and expression data.
- Identify appropriate biological data bases for specific analyses.
- Manipulate on-line resources appropriately.
- Analyse gene expression and interpret its significance.
- Manage bioinformatics tools.
- Apply appropriate statistical methods to determine sequence similarities.
- Understand the chemical and molecular processes that occur in and between cells.
- Gain insight into the most significant molecular and cell-based methods used today to expand their understanding of biology.

Number of contact Hours Theory -4 Practical -2

HORTICULTURE, PLANT BREEDING AND RESEARCH METHODOLOGY

BO 1643

- Understand and describe various methods used in plant breeding
- Judge which methods are appropriate for specific objectives and situation
- Able to carry out emasculation and hybridization
- Apply horticultural concepts to select, manage and improve plants
- Able to do horticultural methods like cutting, layering, grafting and budding
- Familiarize garden tools and implements
- Understand and apply research approaches techniques and strategies in appropriate manner

Number of contact Hours Theory -4 Practical -2

MUSHROOM CULTIVATION AND MARKETING

Open course BO1551.2

- is able to distinguish the principal differences of mushroom cultivation from the cultivation of plants and animals
- can determine the most important species of cultivated mushrooms and knows the basic ways of the cultivation of each of them
- knows the most important kinds of substrata for mushroom cultivation
- understand the methods of cultivation of commonly cultivated mushrooms in our country

Number of contact Hours Theory -3

BIOTECHNOLOGY

BO1651

- Will be able to identify ,analyze and understand problems related to biotechnology
- Will be able to decide and apply appropriate tools and techniques in biotechnology
- In genetic engineering programmes, it is possible to map the whole genome of an organism in order to find out the function of genes, and transfer of desirable genes to another organism to create a genetically modified organism.
- Gene bank and DNA clone bank have been constructed to make available different types of genes of its known function.
- Cell culture and protoplast fusion technique have resulted in hybrid plants through inter generic crosses which are not possible through conventional methods.
- Through cell culture technique industrial production of essential oils, alkaloids, pigments etc. have been boosted up.

Number of contact Hours Theory -3

Course Outcome for General English

Listening, Speaking and Reading

Common for B.A/BSc [EN1111.1], B.Com [EN1111.2] &2(a) [EN 1111.3]

CO 1. Gain an overall understanding of the four skills of language learning and their development

CO 2. Study the difference between hearing and listening and the major barriers to listening as well as ways to improve listening

CO 3. Gain an understanding of phonetics and the various phonetic symbols

CO 4. Are provided with rudimentary idea of phonetic transcription thus improving their pronunciation as well

CO 5. Understand the process of reading and its different aspects

CO 6. the learners to face situations with confidence and to seek employment in the modern globalized world

CO 7. enhances the student's general standard of spoken English

No. of Credits: 4

No. of instructional hours: 5 per week

WRITINGS ON CONTEMPORARY ISSUES: EN 1121

Foundation Course I for BA/BSc

CO 1. have an overall understanding of some of the major issues in the contemporary world.

CO2. respond empathetically to the issues of the society.

- CO3. read literary texts critically.
- CO 4. Become sensitive to the major issues in the society and the world
- CO 5. Learn how to analyse texts at different levels of meaning
- CO 6. Become better prepared to adapt to the changing world

No. of credits: 2

No. of instructional hours: 4 per week

Second Semester

ENVIRONMENTAL STUDIES

Common for B.A/B Sc [EN1211.1] & 2(a) [CG1271]

 ${\rm CO}\ 1.$ Gain a sound understanding about the ecosystems, natural resources, and the need for conservation

- CO 2. Understand the impact of human actions on the environment
- CO 3. Study aspects like population, role of information technology in environment and human health
- CO 4. Internalize the individual's role in environmental conservation
- CO 5. Learn to do a local study of an environmentally fragile zone located nearby
- CO 6. Understand the representation of the environment and its problems in literature

No. of Credits: 4

No. of instructional hours: 6 per week

MODERN ENGLISH GRAMMAR AND USAGE

Common for BA/BSc: EN 1212.1, BCom: 1211.2

- CO 1. are enabled to produce grammatically and idiomatically correct language
- CO 2. acquire an appreciable understanding of English grammar
- CO 3. improves verbal communication skills
- CO 4. minimises mother tongue influence
- CO 5. helps to produce grammatically and idiomatically correct spoken and written discourse
- CO 6. are enabled to spot language errors and correct them

No. of credits: 3

No. of instructional hours: 4 per week

Third Semester

WRITING AND PRESENTATION SKILLS

Common for B. A, B. Sc EN: 1311.1

- CO 1. understand the mechanism of general and academic writing.
- CO 2. recognize the different modes of writing.

CO 3. improve their reference skills, take notes, refer and document data and materials.

CO 4. prepare and present seminar papers and project reports effectively.

CO 5. familiarize students with different modes of general and academic writing.

CO 6. to help them master writing techniques to meet academic and professional needs.

CO 7. to introduce them to the basics of academic presentation

CO 8. to sharpen their accuracy in writing.

No. of credits: 4

No. of instructional hours: 5 per week

Fourth Semester

READINGS IN LITERATURE

Common for BA/BSc: EN 1411.1

CO1. To sensitize students to the aesthetic, cultural and social aspects of literature.

CO2. To help them analyze and appreciate literary texts.

CO3. understand and appreciate literary discourse.

CO4. look at the best pieces of literary writing critically.

CO 5. analyze literature as a cultural and interactive phenomenon.

Department of Chemistry

CH1141 Inorganic Chemistry I (Credit 4)

- **CO1** The students acquire basic knowledge about the structure and properties of elements in relation to electronic configuration.
- **CO2** They also get familiarized with the principles of chemical analysis and environmental chemistry.
- **CO3** The students get the ability to appreciate the relation of the inner structures of elements to their chemical properties.
- **CO4** Basic laboratory skills for chemical analysis, data collection and analysis are also imparted to the student community.

2 Theory period of 2 hour per week over a semester

CH1221 Methodology and Perspectives of Science and General Informatics (Credit 3)

- **CO1** The students get a better understanding about science and the importance of science in the development of culture.
- **CO2** They also get fundamental knowledge to do self-directed experimentation work and elementary aspects of research in chemistry.
- **CO3** The students get the ability to apply computer based knowledge in analysis and presentation of data.

2 Theory period of 2 hour per week over a semester

CH1341 Inorganic Chemistry II (Credit 3)

- **CO1** The students get familiarized with various theories of chemical bonding and also geometry of different molecules.
- CO2 They also get the idea of different interactions and their effects on properties of molecules.
- **CO3** The students acquire fundamental knowledge of different instrumental techniques for chemical analysis.

3 Theory period of 3 hour per week over a semester

CH1441 Organic Chemistry I (Credit3)

- CO1 The students get introduced in to the reactions in organic chemistry.
- **CO2** The students get benefited with the concept of reaction mechanism and stereochemical aspects.
- **CO3** The course imparts the behavior of both aliphatic and aromatic compounds.
 - 3 Theory period of 3 hour per week over a semester

CH1541 Physical Chemistry I (Credit 4)

- **CO1** After completing the course, the students get an excellent exposure and practice in the areas of physical chemistry.
- **CO2** Get familiarized with properties of solid, liquid and gas.
- CO3 The students get benefited with the concepts of thermodynamics, and group theory.

3Theory period of 3 hour per week over a semester

CH1542 Inorganic Chemistry III (Credit 4)

- **CO1** The students acquire exposure on both *d* and *f*-block elements.
- **CO2** They also get an overview of various theories of co-ordination compounds and isomerism in metal complexes.
- **CO3** The course imparts the students the classification, properties and applications of organometallics.

4 Theory period of 4 hour per week over a semester

CH1543 Physical Chemistry II (Credit 4)

- **CO1** The students get familiarized with the application of various concepts of thermodynamics, quantum mechanics and spectroscopy to chemical, physical and biological systems.
- **CO2** They also develop the ability to derive essential mathematical relationships in thermodynamics, quantum chemistry and spectroscopy.

4 Theory period of 4 hour per week over a semester

CH1641 Organic Chemistry II (Credit 4)

CO1 The students get familiarized with the preparation, properties and reaction mechanism of many organic conversions.

3 Theory period of 3 hour per week over a semester

CH1642 Organic Chemistry III (Credit 4)

- **CO1** The students acquire the fundamental knowledge of polymerization.
- CO2 Understand the applications and importance of organic spectroscopy in detail.

4 Theory period of 4 hour per week over a semester

CH1643 Physical Chemistry III (Credit 4)

CO1 The course imparts the basics of electrochemistry and its importance in modern industry and technology.

- **CO2** The students get introduced in to various types of reaction and the different factors that determine the rate of chemical changes.
- CO3 They also get elementary ideas of photochemistry.4 Theory period of 4 hour per week over a semester

CH1661.3 Elective Course-Polymer Chemistry (Credit 2)

- CO1 The students get a detailed study of polymers and polymerization processes.
- **CO2** They also get benefited with various experimental methods involved in polymer chemistry.

3 Theory period of 3 hour per week over a semester

CH 1141, CH 1341 Lab Course-1

- CO1 The course imparts skills on qualitative analysis of mixture of inorganic ions.
- CO2 The students get practice on microscale methods of analysis.2 Practical period of 2 hour per week over a semester

CH 1544 Lab Course-2 (Credit 3)

- CO1 The course conveys the knowledge on inorganic volumetric analysis.
- **CO2** The students get practice on keen observation and recording.

5 Practical period of 5 hour per week over a semester

CH 1545 Lab Course-3 (Credit 2)

- **CO1** The course imparts skills on physical chemistry experiments.
- **CO2** The students get familiarized with various techniques and instruments associated with the physical chemistry experiments.

4 Practical period of 4 hour per week over a semester

CH 1644 Lab Course-3(Credit 3)

- **CO1** The students acquire knowledge about the microscale qualitative analysis of organic compounds.
- **CO2** A deep practical skill on the preparation of various organic compounds is inculcated to the students.

5 Practical period of 5 hour per week over a semester

CH 1645 Lab Course-4(Credit 2)

CO1 The students get familiarized with the quantitative gravimetric analysis.3 Practical period of 3 hour per week over a semester

How to explore New Vistas of Career in Economics?

RAJEESH P

Asst.Professor

PG Dept of Economics, VTM NSS College, Dhanuvachapuram Economics is prestigious subject of enquiry.
P.A. Samuelson:

"Economics is oldest in art and newest in science, queen of Social Science"

- Economics is the only social science discipline which awarded Nobel Prize, funded by Bank of Sweden (1968).
- Economics is considered as ever green subject due to its high utility and huge demand in the job market.
- Well-trained Economists are in huge demand not only in India but also across the world for rapidly globalizing economic scenario. They are hired as Economic analysts, Researchers and Consultants.

Various Branches of Economics.

- I. Fisheries Economics
- 2. Agricultural Economics
- 3. Labor Economics
- 4. Industrial Economics
- 5. Business Economics
- 6. Banking Economics
- 7. Developmental Economics
- 8. Rural Economics
- 9. Rural Development

- 10. Mathematical economics
- II. Statistical economics
- 12. Monetary economics
- **13.** International Economics
- **14. Econometrics**
- **I5.** Public finance
- **16.** Environmental Economics
- **17. Economic policy making**
- **18.** Financial Economics
- **19.** Behavioural Economics

At P.G Level

MA (Analytical & Applied Economics) MA (Applied Economics) MA (Business Economics) MA (Corporation and Applied Economics) MA (Econometrics) MA (Economics) MA (Indian Economics) MA (Quantitative Economics) MBA(Business Economics) M.Sc. (Applied Economics) M.Sc. (Mathematical Economics) MBE(Master of Business Economics)

At M.Phil. and Ph.D. Levels

M.Phil. (Applied Economics)M.Phil. (Economics)M.Phil.(Applied Econometrics)Ph.D. (Business Economics)Ph.D.(Economics)

Diploma Courses in Economics

Post Graduate Diploma (Applied Economics) Post Graduate Diploma (Econometrics)

Institutions offering Programme

There are many institutes, colleges and universities who have economics in its MA, M.Phil and Ph.D. level Programme.

- Central University of Kerala, Kasaragod
- I. M.A Economics
- Calicut University (Dr.John Mathaai Centre, Thrissur)
- I. M.A Economics
- 2. M.A Financial Economics
- 3. M.A Development Economics
- 4. Master of Business Economics(MBE)

- KUFOS(Kerala University of Fisheries and Ocean Studies),Kochi
- I. M.F.Sc in Fisheries Economics
- Thunchath Ezhuthachan Malayalam University, Tirur
- I. M.A.Local Development Studies
- 2. M.A.Environmental Studies

- Kannur University
- I. M.A. Applied Economics
- 2. M.A. Economics
- University of Kerala
- I. M.A. Business Economics
- 2. M.A Economics
- Mahatma Gandhi University
- I. M.A. Economics
- Centre for Development Studies
 M.A Applied Economics
 M.Phil Applied Economics
 P.hD

OUTSIDE KERALA

Here are the lists of institutions who are offering economics. You can easily see other information related with the respective universities/colleges/institutes with their given website. Delhi School of Economics-www.econdse.org Jawaharlal Nehru University-www.jnu.ac.in Presidency College Kolkata-www.presiuniv.ac.in University of Delhi, South Campus-www.south.du.ac.in St. Stephen College, Delhi University-www.ststephens.edu University of Bombay-www.mu.ac.in Indian Statistical Institute Kolkata-www. isical.ac.in Sri Ram College of Commerce-www.srcc.edu University of Agriculture Science-www.uasbangalore.edu.in Ravenshaw University, Cuttack-www. ravenshawuniversity.ac.in Gokhale Institute of Economics & Politic-www.gipe.ac.in Symbiosis School of Economics-www.sse.ac.in Madras School of Economics-www.mse.ac.in IIT kanpur-www.iitk.ac.in Banaras Hindu University – www.bhu.ac.in For world recognized institution in the field of economics, everybody wish to join

London School of Economics

JOB OPPORTUNITIES

- The various fields are offering better job opportunity after passing BA or MA in economics
- Some of the high demand sectors are given below where job prospects are huge.

Possible avenues

- Public Sector
- Private Sector
- NGOs(Non-Governmental Organization)
- International /Aid/Agencies

Public Sector

- Ministry of economics affairs
- Indian Economic Services
- Reserve Bank of India
- National Sample Survey Organization
- NITI Aayog
- Research Institutes
- Colleges and Universities
- Schools

IES

- Direct recruitment to the IES is on the basis of an all india open competitive examination, called the IES Examination conducted by the UPSC
- Between 21 years and 30 years
- A candidate must possess Post Graduate Degree in Economics/ Applied Economics/Business Economics/ Econometrics from a recognized University.

RBI

Department of Economic and policy Research

The RBI has a rich tradition of economic research. Its department of Economic and policy Research

Research Officer in Grade B

Specialist Adviser in Grade F

Age limit-35-50

Minimum qualification- a first class post graduation

Ph.D in Economics

NSSO

- The NSSO has Four Divisions
- Survey design and research
- Field operations Division
- Data Processing
- Economic analysis
- Field investigator
- Age limit- minimum 21 and maximum 40
- Selection process-Written examination, Computer application test, Interview Merit List
NITI AAYOG

Divisions

- Research Centre
- HRD Division
- Project Appraisal and management Division
- Financial Resources Division
- Social Welfare and social Justice Division

Research Associates and Research Assistant

- I. Essential Qualification: Master Degree in Engineering/Computer Science/Economics/Statistics/Mathematics/MBA
- 2. Strong analytical writing, Communication and presentation Skill.
- 3. Knowledge of Computer Application

RESEARCH INSTITUTE

- Institute for Social and Economic Changes(ISEC)Bengalure, Karnataka
- Madras Institute of Development Studies(MIDS), Madras.
- Centre for Development Studies(CDS), Thiruvananthapuram.
- Gokhale Institute of Politics and Economics(GIPE), Pune, Maharashtra.
- The Centre for Economic and Social Studies(CESS), Hyderabad
- Institute of Economics Growth(IEG),
- Indian Institute of Population Studies(IIPS), Mumbai, Maharashtra.

COLLEGES AND UNIVERSITIES

Assistant Professor

Educational qualification

- Minimum of 55% in P.G. Programme
- NET/SLET/SET
- Ph.D

TEACHERS IN SCHOOLS

Minimum Qualification

- I. Master Degree Programme
- **2.** B.Ed

Other Criteria

- I. Employment Registration
- 2. Appear for written test
- 3. TRB
- 4. Teaching Experience

INTERNATIONAL /AID/AGENCIES

- The firms like
- World Bank,
- Asian Development Bank,
- IMF, and other Development Banks,
- Aid agencies,
- Financial Consultancy firms are hiring the economic graduates for its various positions.

OTHER COMPETITIVE EXAMINATION

- UPSC
- RRB
- SSC
- IBPS

• TNPSC

PRIVATE SECTOR JOB POSITION

- Economist
- Economic advisor
- Analysts
- 1. Financial Analysts
- 2. Business Analysts
- 3. Economic research Analyst
- 4. Media Analysts
- 5. Quantitative analyst
- 6. Forecast analyst
- 7. Financial Research Analyst
- Economic Developer
- Banking and Finance
- Insurance Investment

- Management
- Manufacturing
- Advertising
- Communication
- Actuarial
- Education and Research
- Retailing
- System Analysis
- Stock Broker

EXAM TIPS

REFRESH YOURSELF THROUGH UPDATION ie to Explore New Terminologies in Economics Eg:-Flower pot law No cash on the table principle Home Economics Low hanging fruit etc,.

ALWAYS Start with Quotes:- CASHLESS ECONOMY

PM. Modi "Cashless economy is secure, it is a clean, you have a leadership role to play in taking India towards an increasingly digital economy"

WORKING WITH GRAPHICAL ILLUSTRATION

Eg:- Green revolution **Production Function** Demographic Transition Theories PRACTICE ON OLD EXAM University Question Papers GETS SOME GOOD NOTES National Digital Library of India NPTEL

USE MATHEMATICAL EXPLANATION

- Q=f(L,K,N)
- C=f(Y)

ora-et-labora

FIRST DEGREE PROGRAMME

ADDITIONAL LANGUAGE – HINDI (BA / B Sc)

Course Outcome

SEMESTER - I

Prose, Commercial Hindi and Letter Writing (HN 1111.1)

- CO1 Sensitize the student to the aesthetic and cultural aspects of literary appreciation and analysis
- CO2 Introduce modern Hindi prose to the students
- CO3 Understand the cultural, social and moral values of modern Hindi prose
- CO4 Understand the theory and practice of Hindi Grammar.

Instructional hours per week: 4

No of credits - 4

SEMESTER - II

Fiction, Creative Writing and Communication Skills (HN 1211.1)

- CO1 Guide the students to the world of Hindi Fiction (Novel & Short Story).
- CO2 Develop the capacity of creative process
- CO3 Develop the capacity of communication skills.

Instructional hours per week: 4

No of credits -3

SEMESTER - III

Drama, One Act Plays and Translation (HN 1311.1)

- CO1 Learn and understand the literary and stylistic elements of Hindi Drama and One Act Plays.
- CO2 Understand the distinct features of Hindi Drama
- CO3 Develop communicative skills in Hindi and English through the Translation.

Instructional hours per week: 5

No of credits - 4

SEMESTER - IV

Poetry, Long Poems and Culture (HN 1411.1)

- CO1 Introduce the student to the world of Hindi poetry Ancient and Modern
- CO2 To sensitize the student to the aesthetic aspects of literary appreciation and analysis.
- CO3 Introduce the specialties of Indian culture and Kerala Culture.

Instructional hours per week: 5

No of credits – 4

FIRST DEGREE PROGRAMME

ADDITIONAL LANGUAGE – HINDI (B Com) Course Outcome

SEMESTER – I

Prose, Commercial Hindi and Letter Writing (HN 1111.2)

- CO1 Understand and appreciate Hindi prose.
- CO2 Enrich the knowledge of commercial letter writing.
- CO3 The form and style of other letters

Instructional hours per week: 4

No of credits - 4

SEMESTER – II

Poetry, Translation, Technical Terminology and Communication (HN 1211.2)

CO1 Sensitize the student to the aesthetic aspects of literary appreciation and to introduce Hindi poetry.

- CO2 Develop communicative skills in Hindi and English through the Translation.
- CO3 Familiarize the Technical terms used in offices.
- CO4 Enrich the developments of communication medias.

Instructional hours per week: 4

No of credits - 4