BOTANY

SEMESTER I

Course Numbers	Coursed Name	MARK		Credit	Exam Time	
		Mid sem	End sem		Mid Sem	End Sem
BOTA C101	Microbiology	20	80	4	1h	3h
BOTA C102	Lower Plant Diversity and Paleobotany	20	80	4	1h	3h
BOTA C103	Cell Biology and Evolution	20	80	4	1h	3h
BOTA C104	Genetics and Molecular Biology	20	80	4	1h	3h
BOTA P105	Practical	100		6	6h	

SEMESTER II

Course Numbers	Coursed Name	MARK		Credit	Exam Time	
		Mid sem	End sem		Mid Sem	End Sem
BOTA C201	Systematics of Angiosperms	20	80	4	1h	3h
BOTA C102	Plant Physiology and Metabolism	20	80	4	1h	3h
BOTA C103	Biochemistry and Biostatistics	20	80	4	1h	3h
BOTA C104	Ecology and Environment	20	80	4	1h	3h
BOTA P205	Practical	100		6	6h	
BOTA VAC206	Organic Farming	100		NC	3h	

SEMESTER III

Course Numbers	Coursed Name	MARK		Credit	Exam Time	
		Mid sem	End sem		Mid Sem	End Sem
BOTA C301	Plant Embryology and Anatomy	20	80	4	1h	3h
BOTA E302(A)	Molecular Plant Pathology and Immunology	20	80	4	1h	3h
BOTA E302(B)	Natural Resources, Conservation and Utilization	20	80	4	1h	3h
BOTA E303(A)	Computational Biology and Bioinformatics	20	80	4	1h	3h
BOTA E303(B)	Environmental Biotechnology and Waste management	20	80	4	1h	3h
BOTA P304	Practical	20	80	4	1h	3h
BOTA CT300*	Inter Disciplinary Elective#*	100		6	6h	
BOTA VAC305	Nursery and Horticulture Techniques	100		NC	3h	

SEMESTER IV

Course Numbers	Coursed Name	MARK		Credit	Exam Time	
		Mid sem	End sem		Mid Sem	End Sem
BOTA C401	Advanced Plant Biotechnology	20	80	4	1h	3h
BOTA C402	Seminar presentation and Field Study/ Scientific Visit	20	80	4	1h	3h
BOTA E403(A)	Microbial and Molecular Techniques	20	80	4	1h	3h
BOTAE403 (B)	Molecular Stress Biology and Biotechnology of Cyanobacteria	20	80	4	1h	3h

BOTA E404(A)	Phytomedicine	20	80	4	1h	3h
BOTA E404(B)	Environment Law	20	80	4	1h	3h
BOTA D405	Dissertation (Project Work)	20	80	4	1h	3h
BOTA AC406	Cultural Heritage of Ganjam	100		6	3h	

Program Outcome: M.Sc. in Botany

M.Sc. in Botany is a two years regular course. The present syllabus covers different components of theoretical and practical, as well as project work, field study and seminar presentations, which will help the students to get in depth knowledge on advanced Botany. During and after the completion of this course, students are expected to have an overall knowledge on Microbiology, different lower (Cryptogams) and higher plants (Phanerogams) diversity, their anatomy, physiology, biochemistry, biostatistics, reproductive biology, genetics, evolutionary history and Paleobotany etc. The students can learn about the origin and history of different cultivated plants, their economic importance, utilization and conservation of natural resources, different renewable and nonrenewable energy sources. The course curriculum is designed to introduce the students about sensory biology and stress physiology along with the hands on training on the theory and practical aspects of different instruments along with microbial and plant tissue culture. The course also encompasses an enriched knowledge on Ecology, environmental pollutions and different Environment laws. After completion of this course, students are expected to have practical knowledge on how to handle and operate basic instruments for their experimental purposes. They might have basic idea on experimental designing, project handling and writing their project reports, which may be beneficial for them in future and improve their capability to write notes and research articles for different scientific journals. The degree of M.Sc. Botany may open their path into academia/research career at national and international level as a scientist, as a teaching faculty or as a scholar or into different administrative positions.

Course Outcome

After successful completion of this course, students will be able to understand, the cell structures in relation to function of cells, the fundamental unit of life along with molecules present in cells, the concepts in prokaryotic, eukaryotic, and viral genetics, the central dogma of molecular biology (replication, transcription, and translation),the types of mutation, gene regulation and transposable element, the diversity of lower cryptogams (Algae, Fungi, Bacteria, and viruses),the collection and study of algae, fungi, bacteria from different natural sources, their identification up to generic level. After completion of the course the students will be familiar with various physiological aspects involved in the plant development, the role of enzymes in it and mechanism of photosynthesis, respiration, nitrogen and lipid metabolism. Identification of genus and species of locally available wild plants, preparation of botanical keys at generic level by locating key characters, knowledge of at least 10 medicinal plant species, the study of at least 20 locally available families of flowering plants and knowledge of secondary metabolites and its use in taxonomy, development of plant reproductive parts i.e. male, female gametophytes and fruits. Sterilization techniques for media as well as for explants and their culture, anther culture, pollen culture micropropagation, embryo rescue technique, somaclonal variation, isolation of plant protoplasts and their fusion techniques, tissue culture of important horticultural and medicinal plants etc. The students will also learn microbial isolation and pure culture techniques. The students will learn different aspects in Ecology, environmental problems and their mitigation rules along with different Environment laws.

General Course Framework & Structure (M. Sc. Chemistry) 2023-24

SEMESTER-I: Total Credits/Total core/electives (22/05/00): Total marks : 500

Course Numbers	Coursed Name	MARK		Credit	Exam Time	
		Mid sem	End sem		Mid Sem	End Sem
CHEM C101	Organic Chemistry-I	20	80	4	1h	3h
CHEM C102	Inorganic Chemistry-I	20	80	4	1h	3h
CHEM C103	Physical Chemistry-I	20	80	4	1h	3h
CHEM C104	Molecular Spectroscopy	20	80	4	1h	3h

CHEM P105	Physical Practical	100	6	6h

SEMESTER-II: Total Credits/Total core/electives (22/05/00): Total marks : 500

Course Numbers	Coursed Name	MARK		Credit	Exam Time	
		Mid sem	End sem		Mid Sem	End Sem
CHEM C201	Organic Chemistry-II	20	80	4	1h	3h
CHEM C202	Inorganic Chemistry-II	20	80	4	1h	3h
CHEM C203	Physical Chemistry-II	20	80	4	1h	3h
CHEM C204	Organic Spectroscopy	20	80	4	1h	3h
CHEM P205	Organic Practical	100		6	6h	
CHEM VAC1	Materials Characterization	100		NC	3h	

SEMESTER-III: Total Credits/Total core/electives (22/02/03*): Total marks : 500

Course Numbers	Coursed Name	MARK		Credit	Exam Time	
		Mid sem	End sem		Mid Sem	End Sem
CHEM C301	Physical Organic Chemistry	20	80	4	1h	3h
CHEM E302	Advance Organic Synthesis	20	80	4	1h	3h
CHEM E303	Organometalic Chemistry	20	80	4	1h	3h
CHEM E304	Analytical Chemistry	20	80	4	1h	3h
CHEM E305	Nanochemistry	20	80	4	1h	3h
CHEM CT300	Environmental Chemistry	20	80	4	1h	3h
CHEM P306	Inorganic Practical	100		6	6h	
CHEM VAC2	Chemistry and Society	100		NC	3h	

SEMESTER-IV: Total Credits/Total core/electives (22/02/03): Total marks : 500**

Course Numbers	Coursed Name	MARK		Credit	Exam Time	
		Mid sem	End sem		Mid Sem	End Sem
CHEM C401	Physical Chemistry-III	20	80	4	1h	3h
CHEM E402	Bio-Organic Chemistry	20	80	4	1h	3h
CHEM E403	Bio-inorganic & Supramolecular Chemistry	20	80	4	1h	3h
CHEM E404	Asymmetric Synthesis	20	80	4	1h	3h
CHEM E405	Polymer Chemistry	20	80	4	1h	3h
CHEM E406	Industrial Chemistry	20	80	4	1h	3h
CHEM E407	Organic Synthesis in medicines	20	80	4	1h	3h
CHEM D408	Dissertation	100		6	3h	
VAC3	Cultural Heritage of South Odisha			NC		

*****3rd semester students can opt for two elective courses out of four (CHEM E302,303,304 AND 305) AND ONE COURSE IN OTHER DEPARTMENT. Other department students can opt for CHEM CT300.

**4th semester Students can opt for three elective courses from six (CHEM E402,403,404,405,406,407).

(CHEM: Chemistry, C:Core,E:Elective; P:Practical (Core paper), VAC: Value Added Course & D: Dissertation (Core Paper).

CHEMISTRY

Programme Outcome

Berhampur University has consistently maintained its position among the top chemistry departments inworld rankings over the past decade. The department focuses on top-quality research in specific currentareas such as Synthetic Organic chemistry, chemical biology of drugs, and Nanochemistry with aparticular aim on disease control and cure. To make the department a flourishing center of excellence inteaching, curriculum development, cutting-edge research and popularizing Chemistry in society, attemptsare being made to make international collaborations for students and faculty mobility and researchcooperation. The department would like to attain

worldwide recognition in Chemistry research andteaching. Additionally, the department also strives to contribute to industry and address problems of

societal importance. The department also aims at Chemistry outreach in the form of books, onlinecourses, and other chemistry education activities that showcase the role of "Chemistry as a centralscience." The department aims to produce high-quality M. Sc. and Ph. D. students with applicationorientedskills in industry and academia.

Course Outcome: This course gives the basics of organic chemistry with an in-depth understanding of a broad range ofbasic organic reactions and rearrangements, fundamental prospective such as idea of reaction intermediates, drawingreaction mechanism, name reactions-rearrangement, stereochemistry of products. It gives an in-depth understanding of a broad range of basics of inorganic chemistry, bonding nature in the molecule and metal complex, bonding theory such as VBT, MOT; Π-acceptor ligands; Rings, Cages and Metal Clusters; Chemistryof main group elements, basic concept of the structure, behaviour of molecule and chemicalphenomena at the microscopic level, broad range of basics of molecular spectroscopy, microwave, vibrational, Raman, and photoelectron spectroscopy. In addition student willlearn the application of EPR and Mossbauer spectroscopy, practical knowledge of physical and analytical chemistry, Structure and Properties, Basics of Polymer; Polymer Characterization; to Petroleum, coal based chemicals, Oil based industries, fundamental knowledge on the applications of organic synthesis for the human society. The chapter deals with different medicines that were synthesized through organic synthesis. The student learns how to synthesize Analgesics, Anthelmintics, Muscle relaxant, Anathesia Synthesis, Tranquilizers, Respiratory, Anti-Bacterial, Anti-microbes, Anti-Biotic, Cardiotonic, Thyroid, Immuno suppressants, Antimetabolite, Nervous stimulant, Fungicide, Herbicides, Pesticides, Perfume and fragnances, Anti-virals. Stoichiometry and unit operation, Pesticides, Fertilizer, Medicine and Pharmacological industries, High energy materials and industrial hygiene with safety. The will help in inculcating entrepreneurship among students.

COMMERCE

Semester Wise Details of M.ComProgramme			
Paper Code	**Core/Elective**	**Paper Title**	**Credit**
Semester-I			
COMM C101	Core	Organisational Behavior	4
COMM C102	Core	International Business Environment	4
COMM C103	Core	Advanced Marketing Management	4
COMM C104	Core	Advanced Financial Management	4
COMM C105	Core	Business Data Analytics	4
Semester-II			
COMM C201	Core	Macro Economics	4
COMM C202	Core	Advaanced Cost & Management Accounting	4
COMM C203	Core	Fundamentals of Fin-Tech	4
COMM C204	Core	Strategic Financial Management	4
COMM C205	Core	Research Methodology and Report Writing	4
COMM VAC1	Value Added Course (Non-Credit)	Start-Ups & Entrepreneurship	--
Semester-III			
COMM CT300	CBCT	Personal Financial Planning	4
COMM C301	Core	Internship Project & Presentation	4
COMM E302	Elective (Accounting & Finance)	Advanced Accounting	4
COMM E303	Elective (Accounting & Finance)	Investment Analysis & Portfolio Management	4
COMM E304	Elective (Accounting & Finance)	Financial Derivatives and Risk Management	4
COMM E305	Elective(Banking & Institutional Finance)	Behavioural Finance	4
COMM E306	Elective(Banking & Institutional Finance)	Management of Financial Institutions	4
COMM E307	Elective(Banking & Institutional Finance)	Financial Service and Marketing	4
COMM E308	Elective(Marketing)	International Marketing	4
COMM E309	Elective(Marketing)	Supply Chain Management and Logistics	4

COMM E310	Elective(Marketing)	Consumer Behavior	4
COMM VAC2	Value Added Course(Non-Credit)	Trading in Stock Market	--
Semester-IV			
COMM C401	Core	Strategic Management & Corporate Governance	4
COMM C402	Core	Dissertation and Viva-Voce	4
COMM E403	Elective (Accounting & Finance)	IFRS and Ind AS	4
COMM E404	Elective (Accounting & Finance)	International Accounting & Corporate Reporting	4
COMM E405	Elective (Accounting & Finance)	International Finance	4
COMM E406	Elective(Banking & Institutional Finance)	Treasury, Investment and Risk Management	4
COMM E407	Elective(Banking & Institutional Finance)	International Banking	4
COMM E408	Elective(Banking & Institutional Finance)	Insurance Management	4
COMM E409	Elective(Marketing)	Digital Marketing	4
COMM E410	Elective(Marketing)	Retail Marketing Management	4
COMM E411	Elective(Marketing)	Customer Relationship Management	4
COMM AC1	Add on Course(Non-Credit)	Cultural Heritage of South Odisha	--
		Total Credit	80

Semester-I COMM C101 ORGANISATIONAL BEHAVIOUR

Course Outcomes: After completion of this course the students will be able to:

CO1: Understand the concepts of organisational behaviour.

CO2: Know the various dimensions of individual behaviour and motivation.

CO3: Learn about group dynamics, team spirit and organisational conflict.

CO4: Have a better Insight about leadership and organisation structure.

COMM C102 INTERNATIONAL BUSINESS ENVIRONMENT

Course Outcomes: After completion of this course the students will be able to:

CO1: Understand the international business environment.

CO2: Analyze the interaction of economic, political, legal environment.

CO3: Scan the business environment on international level & can take various business decisions.

CO4: Understand foreign investment and its mechanism.

COMM C103 ADVANCED MARKETING MANAGEMENT

Course Outcomes: After completion of this course the students will be able to:

CO1: Familiarize themselves with the fundamentals of marketing and take better marketing decisions.

CO2: Understand the nuances and complexities involved in various products and pricing decisions.

CO3: Take effective distribution decisions for products and services.

CO4: Know the recent trend in marketing and ethical issues involved in marketing.

COMM C104 ADVANCED FINANCIAL MANAGEMENT

Course Outcomes: After completion of this course the students will be able to:

CO1: Understand the foundations of financial management and role of a finance manager. **CO2**: Evaluate capital projects under different situations using appropriate capital budgeting techniques.

CO3: Determine cost of capital and examine the capital structure decisions.

CO4: Understand various issues and theories of dividend policy and management of working capital.

COMM C105 BUSINESS DATA ANALYTICS

Course Outcomes: After completion of this course the students will be able to:

CO1: Become aware of the concepts of data analytics, its various application in business decision.

CO2: Understand the concept of data, its structure and technique of data collection.

CO3: Understand the data visualisation techniques and application correlation & regression analysis

CO4: Expose to various hypothesis testing technique and machine learning tools. and visualisation tools.

COMM C201 MACRO ECONOMICS

Course Outcomes:

CO1: To develop an understanding of the concept of Macro Economics

CO2: To acquire a fair degree of proficiency in National Income accounting

CO3: To have better idea about money, credit creation and monetary policy

CO4: To know the components of Fiscal Policy and issues in Economic Development.

COMM C202 ADVANCED COST AND MANAGEMENT ACCOUNTING

Course Outcomes:

CO1: To understand the concept of standard costing and interpretation of variances

CO2: To gain the knowledge about budgeting process and preparation of budget

CO3: To explain the essential features of responsibility accounting.

CO4: To design the solutions to the contemporary issues in management accounting.

COMM C203 FUNDAMENTALS OF FIN-TECH

Course Outcomes: After completion of this course the students will be able to:

CO1: Understand the Indian financial system and the role of technology in financial system.

CO2: Gain knowledge on financial technology and its various dimensions.

CO3: Understand the payment technology in the financial system.

CO4: Get knowledge on various regulations related to Fin-Tech industry in India.

COMM C204 STRATEGIC FINANCIAL MANAGEMENT

Course Outcomes: After completion of this course the students will be able to:

CO1: Know the importance for strategic planning in financial decision making.

CO2: Assess the long-term investment projects that are subject to risk and uncertainty. **CO3:**Gain insights on managing risk associated with investment in working capital.

CO4: Ascertain the worth of business and predict the financial sickness of business.

COMM C205 RESEARCH METHODOLOGY AND REPORT WRITING

Course Outcomes: After completion of this course the students will be able to:

CO1: Describe the research process and various types of research.

CO2: Describe research design and various methods of collection& processing of data. **CO3:**Know about selection of samples and testing of hypothesis.

CO4: Use computer to analyse the data and write report on the researched topic.

COMM VAC1 START-UPS &ENTREPRENEURSHIP

Course Outcomes: After completion of this course the students will be able to:

CO1: Understand the role of entrepreneurs in economic development and factors motivating entrepreneurship.

CO2: Know the process of generating new ideas for the business and management of start-ups.

CO3: Become aware of the different sources of finance for starting a new venture.

CO4: Assess the marketing issues and challenges for the entrepreneurs.

COMM CT300 PERSONAL FINANCIAL PLANNING

Course Outcomes: After completion of this course the students will be able to:

CO1: Understand the importance and process of financial planning.

CO2: Know various investment avenues available for individuals.

CO3: Manage both personal and financial risk of individuals.

CO4: Know the tax implication on personal financial planning.

COMM C301 INTERNSHIP PROJECT & PRESENTATION

Course Outcomes: After completion of this course the students will be able to apply their academic learning in practice.

COMM E302 ADVANCED ACCOUNTING

Course Outcomes: After completion of this course the students will be able to:

CO1: Develop insights on corporate restructuring and accounting for various types of restructuring.

CO2: Present and analyze consolidated financial statements of holding and subsidiary companies.

CO3: Develop the skill of preparation of financial statements of banking companies.

CO4: Gain knowledge and competency in accounting for insurance companies.

COMM E303 INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT

Course Outcomes: After completion of this course the students will be able to:

CO1: Understand the basic concepts of investment and portfolio.

CO2: Analyze the individual security.

CO3: Construct and Manage a Portfolio.

CO4: Evaluate and revise the portfolios.

COMM E304 FINANCIAL DERIVATIVES AND RISK MANAGEMENT

Course Outcomes: After completion of this course the students will be able to:

CO1: Understand the concept of risk and derivatives.

CO2: Make option strategies.

CO3: Make futures and swap strategies.

CO4: Understand the risk hedging schemes.

COMM E305 BEHAVIOURAL FINANCE

Course Outcomes: After completion of this course the students will be able to:

CO1: Understand and model the behaviour of investors.

CO2: Recognise the factors of influencing the investors‟ behaviour.

CO3: Analyse various market hypotheses and know the level of efficiency of the market.

CO4: Identify the behavioural influence on corporate decision making.

COMM E306 MANAGEMENT OF FINANCIAL INSTITUTIONS

Course Outcomes: After completion of this course the students will be able to:

CO1: Gain knowledge on working and capital requirements of financial institutions.

CO2: Know the techniques of managing assets and liabilities of financial institutions. **CO3:** Analyse various means of managing risk financial institutions.

CO4: Know the mechanism of evaluating loan request and granting loans by financial institutions.

COMM E307 FINANCIAL SERVICES & MARKETING

Course Outcomes: After completion of this course the students will be able to:

CO1: Know the role of merchant banking and forms of venture capital financing available for business.

CO2: Understand the lease and hire-purchase as a source of finance for the business.

CO3: Aware of factoring, forfaiting and credit rating services in India.

CO4: Understand the dematerialisation of securities and the marketing strategy for financial services.

COMM E308 INTERNATIONAL MARKETING

Course Outcomes: After completion of this course the students will be able to:

CO1: Understand international marketing environment and the process of international marketing.

CO2: Understand decisions related to international product planning and pricing.

CO3: Explain methods of promoting a product in foreign markets and understand issues involved it.

CO4: Know the channels of distribution and the emerging trends in international marketing.

COMM E309 SUPPLY CHAIN MANAGEMENT AND LOGISTICS

Course Outcomes: After completion of this course the students will be able to:

CO1: Describe supply chain management and logistics concepts at macro and micro levels**.**

CO2: Understand the role of logistics in relation to procurement, transportation, and warehousing.

CO3:Understanding the role of Relationship Marketing in SCM.

CO4:Know the Challenges in Logistics and Supply Chain Management.

COMM E310 CONSUMER BEHAVIOUR

Course Outcomes: After completion of this course the students will be able to:

CO1: Understand consumer behaviour and consumer decision making process.

CO2: Describe the underlying variables resulting into differences in consumer decision making.

CO3: Know the socio-cultural factors affecting consumer decision making.

CO4: Understand the models of consumer behaviour.

COMM VAC2 TRADING IN STOCK MARKET

Course Outcomes: After completion of this course the students will be able to:

CO1: Understand the capital market at national and global level.

CO2: Know the process of public issues and listing of stock in exchanges.

CO3: Get acquainted with the trading procedure in stock markets.

CO4: Analyse different trading options available in the stock markets.

COMM C401 STRATEGIC MANAGEMENT & CORPORATE GOVERNANCE

Course Outcomes: After completion of this course the students will be able to:

CO1: Understand the concept of strategy and formulate strategy for business.

CO2: Know how the strategies are implemented and evaluated.

CO3: Know the corporate governance issues and landmark governance guidelines. **CO4**:Understandthe role of agents, institutions and government in good corporate governance.

COMM C402 DISSERTATION AND VIVA-VOCE

Course Outcomes: After completion of this course the students will be able to undertake research on their interested field and prepare a research report.

COMM E403 IFRS AND IND AS

Course Outcomes: After completion of this course the students will be able to:

CO1: Have understanding of Indian Accounting Standard and its applicability in preparation of financial statements.

CO2: Understand different types of report prepared by the corporate and concept of triple bottom line.

CO3: Prepare statement of Cash flow statement and have broad idea about PPP and inventory valuation.

CO4: Gain idea about fair value measurement and the reporting practices followed of corporate.

COMM E404 INTERNATIONAL ACCOUNTING & CORPORATE REPORTING

Course Outcomes: After completion of this course the students will be able to:

CO1: Develop Insights on the different dimensions of the international accounting.

CO2: Know the country differences and harmonization of accounting practices.

CO3: Understand the operations of foreign currency translations mechanisms & transfer pricing.

CO4: Know the corporate reporting practices in India.

COMM E405 INTERNATIONAL FINANCE

Course Outcomes: After completion of this course the students will be able to:

CO1: Acquire knowledge on international financial and monetary system.

CO2: Understand the mechanism of forex market.

CO3: Appreciate role and importance of international financial institutions in international money flow.

CO4: Know the determination of exchange rates.

COMM E406 TREASURY, INVESTMENT AND RISK MANAGEMENT

Course Outcomes: After completion of this course the students will be able to:

CO1: Acquire adequate knowledge on various types of securities available for investment. **CO2:** Gain insights on treasury management.

CO3: Know the means of liquidity management.

CO4: Understand the role of RBI and technology in treasury management.

COMM E407 INTERNATIONAL BANKING

Course Outcomes: After completion of this course the students will be able to:

CO1: Todevelop Insights about international banking operation

CO2: To know the activities of various international financial institution

CO3: To understand the treasury and risk mitigation

CO4: To develop the Skill to understand the international corporate finance

COMM E408 INSURANCE MANAGEMENT

Course Outcomes: After completion of this course the students will be able to:

CO1: Know the concept and principles of insurance contract.

CO2: Gain insights on life, fire and marine insurance.

CO3: Understand the process of claim calculation and settlement.

CO4: Comprehend the concept of re-insurance and legal & social aspects of investment by insurers.

COMM E409 DIGITAL MARKETING

Course Outcomes: After completion of this course the students will be able to:

CO1: Have an insight of the Internet in India, Search Engine Optimization, and Search Advertising.

CO2: Develop an idea on Display advertising, Web Analytics, and Consumers Online.

CO3: Gain awareness about Social Media Marketing, Social Media Analytics and mobile marketing.

CO4: Gain knowledge on Email Marketing, Internet marketing strategy and content marketing.

COMM E410 RETAIL MARKETING MANAGEMENT

Course Outcomes: After completion of this course the students will be able to:

CO1: Know about the concept of retailing and retail management decisions.

CO2: Understand the strategic retail management mechanisms.

CO3: Know the supply chain management in retailing.

CO4: Become aware of the brand management techniques.

COMM E411 CUSTOMER RELATIONSHIP MANAGEMENT

Course Outcomes: After completion of this course the students will be able to:

CO1: Understand the concept of the CRM.

CO2: Know the importance of the CRM in Marketing.

CO3: Learn how to manage and share customer data.

CO4: Develop the skill to implement CRM in a business.

ECONOMICS

Semester	Course	Name of the Paper	No. of Credits	Marks
SEMESTER-I				100(80 End Semester +20 Mid Semester)
ECON C 101	Core	Microeconomic Analysis-I	04	-do-
ECON C 102	Core	Microeconomic Analysis-I	04	-do-
ECON C 103	Core	Quantitative Methods-I	04	-do-
ECON C 104	Core	Public Economics-I	04	-do-
ECON C 105	Core	Economics of Growth and Development-I	04	-do-
Semester	Course	Name of the Paper	No. of Credits	Marks
SEMESTER-II				100(80 End Semester +20 Mid Semester)
ECON C 201	Core	Microeconomic Analysis-II	04	-do-
Econ c 202	Core	Microeconomic Analysis-II	04	-do-
ECON C 203	Core	Quantitative Methods-II	04	-do-
ECON C 204	Core	Public Economics-II	04	-do-
ECON C2005	Core	Economics of Growth and Development-II	04	-do-
ECON VAC 206	Core	Name of the Paper	No. of Credits	Marks
SEMESTER-III				100(80 End Semester +20 Mid Semester)

ECON E 301	Core	International Trade and finance-I	04	-do-
ECON C 302	Core	Enconomics of Social Sector and Environment	04	-do-
Group-A(One paper to be opted)				
ECON E 303	Elective	Mathematical Economics-I	04	-do-
ECON E 304	Elective	Industrial Economics-I	04	-do-
Group-B(One paper to be opted)				
ECON E 305	Elective	Economitrics-I	04	-do-
ECON E 306	Elective	Financial Institution and Markets-I	04	-do-
Econ e 307	Elective	Agricultural Economics-I	04	-do-
Choice Based Credit Transfer(CBCT)				
ECON CT 300	CBCT	Contemporary Indian Economy	04	100(80End Semester+20Mid Semester)
ECON VAC 308	Value added	Economic Issues and Policies in Odisha	0	Grade
Semester	Course	Name of the paper	No. of Credits	Marks
Semester-IV				100(80End Semester+20Mid Semester)
ECON C 401	Core	International Trade and Finance-II	04	-do-
ECON C 402	Core	Research Methodology	04	-do-
ECON C 403	Core	Dissertation	04	100(50-Thesis evaluation50-Viva)
GROUP-A(One paper to be opted)				
ECON E 404	Elective	Mathematical Economics-II	04	100(80 End Semester +20 Mid Semester)
ECON E 405	Elective	Dissertation	04	-do-
Group-B(One paper to be opted)				
ECON E 406	Elective	Econometrics-II	04	-do-
ECON E 407	Elective	Financial Institutions and market-II	04	-do-
ECON E 408	Elective	Agricultural Economics-II	04	_do-
ECON E 409	Non-Credit	Cultural Heritage of South Odisha	0	-

Programme Outcome:

The Master of Arts programme in Economics has been designed with the objective to develop in-depth knowledge of students in frontier areas of economic theory and methods, so that they are able to use the knowledge to study real world economic problems.

The course has a strong focus on theoretical and quantitative skills and train students in the collection and analysis of the data using their software skills. The programme offers specialised optional courses, which allow student to pursue their studies in their area of interest. The students are required to submit report and present their findings of field-study. Besides, to hone the student's writing and analytical skills they are required to submit a term paper on current economic problem. Thus, the Masters in Economics programme seek to:

- Prepare students to develop critical thinking to carry out investigation about various socio-economic issues objectively while bridging the gap between theory and practice.

- Equip the student with skills to analyse problems, formulate an hypothesis, evaluate and validate results and draw reasonable conclusions thereof.

- Prepare students for pursuing research or careers that provide employment through entrepreneurship and innovative methods. Because today's unemployment problem can also be solved by developing the micro and small entrepreneurship

- Prepare students to develop own thinking /opinion regarding current national or international policies and issues

- Create awareness to become a rational and an enlightened citizen so that they can take the responsibility to spread the governments' initiatives/schemes to the rural areas for the upliftment of the poor or vulnerable section of the society for inclusive growth

ECON C 101: Microeconomic Analysis – I

Course Outcome: The course will equip the students with the tools of micro economic fundamentals for a sound understanding of the behaviour of micro economic units like a rational consumer and the firms in various market structures. On successful completion of the course, a student will be able to develop a sound understanding of the core microeconomic concepts that economists use to understand the process of decision-making by an economic agent(s).

ECON C 102: Macroeconomic Analysis – I

Course Outcome: This course will build the theoretical understanding of students on various macroeconomic thoughts starting from classical to contemporary Macroeconomics. It can improve the macroeconomic analytical skills from relevant policy perspective. The students will get an overview of the major developments in macroeconomic theory, with particular emphasis on the policy prescriptions of the earlier macroeconomic schools of thought. The students will learn to develop an understanding of the interrelationships among the various macroeconomic variables and the way they impact upon the working of the economy as a whole, thereby determining the course of the economy.

ECON C 103: Quantitative Methods –I

Course Outcome: This paper will enable the students to know different statistical and mathematical tools which are used to be applied by economists to solve various real-world problems.

ECON C 104: Public Economics – I

Course Outcome: This course is to familiarise the students with the concepts, principles and theories of Public economics. The students will understand about the public expenditure, public revenue, public finance, public budget and role of government, need for public provision of public goods, theory of taxation, theory of expenditure, Fiscal federal relations, fiscal policy instruments and their impact on macro economy.

ECON C 105: Economics of Growth and Development – I

Course Outcome: The course will explore the concepts and theories of Development Economics with an aim to develop the research capabilities of the students.

ECON C 201:Microeconomic Analysis – II

Course Outcome: The course will be helpful to the students to know about the managerial and behavioural theories of the firm, Theory of Distribution, General Equilibrium Analysis and welfare economics.

ECON C 202: Macroeconomic Analysis – II

Course Outcome: This course will create the theoretical understanding of students from classical to contemporary macroeconomics. It will improve the macroeconomic analytical skills from relevant policy perspectives.

ECON C 203: Quantitative Methods –II

Course Outcome: This paper will enable the students to know about different statistical and mathematical tools which are routinely being applied by economists to solve various real world problems.

ECON C 204: Public Economics – II

Course Outcome: This will help the students to understand about the role of public sector, preference revelation for public goods, rationale for public policy and fiscal federalism. The students will understand about the public expenditure, public revenue, public

finance, public budget and role of government, need for public provision of public goods, theory of taxation, theory of expenditure, Fiscal federal relations, fiscal policy instruments and their impact on macro economy.

ECON C 205: Economics of Growth and Development – II

Course Outcome: The course will explore the concepts and theories of Development Economics with an aim to develop the research capabilities of the students.

ECON VAC 206: Computer Application in Economics

Course Outcome: The students can able to understand applications of different statistical packages for Economic analysis and can conduct the statistical analysis on economic problems.

ECON C 301: International Trade and Finance – I

Course Outcome: This course will help the students to understanding of theories of international trade, gains from trade and intervention in trade. This will help the students to improve their analytical skills and they can relate with current trade situation.

ECON C 302: Economics of Social Sector and Environment

Course Outcome: This course enables the students to have an idea on resources and environmental economics, and environmental policy and regulation in India. It will help students understand the link between environment, education and health.

ECON E 303: Mathematical Economics – I

Course Outcome: The course will create an understanding of the students to know the use of mathematical principle. It will make learners to know the consumer and producer behaviour, and their application in economics.

ECON E 304: Industrial Economics-I

Course Outcome: This course will provide an introduction to current theory and empirical work in Industrial economics.

ECON E 305:Econometrics – I

Course Outcome: The course will enable the students to learn the basic tools of econometric analysis. The students will understand the methods of econometric analysis and their application in empirical research.

ECON E 306:Financial Institutions and Markets – I

Course Outcome: This course enables the students to undertake a rigorous study of the theoretical and empirical foundations of financial economics.

ECON E 307:Agricultural Economics – I

Course Outcome: This course will help the students to understand the importance of agriculture in economic development and to discuss major agricultural issues and policies.

ECON CT 300: Contemporary Indian Economy

Course Outcome: This course will enable the students to understand the status and importance of basic economic indicators of Indian Economy.

ECON VAC 308: Economic Issues and Policies of Odisha

Course Outcome: This course aims to provide an understanding of different economic issues and policies in Odisha.

ECON C 401:International Trade and Finance – II

Course Outcome: This course aims to provide an understanding of approaches for balance of payments adjustments trade policies, balance of payments, international institutions and economic integration. This help students to improve their analytical skills and they can relate with current trade situation.

ECON C 402: Research Methodology

Course Outcome: The course will help students to introduce students to quantitative and qualitative methods for conducting meaningful inquiry and research. It is expected to gain an overview of research intent and design, methodology and technique, format and presentation, research ethics and data management and analysis.

ECON E 403: Mathematical Economics – II

Course Outcome: The aim of the course is to provide the understanding of market equilibrium, game theory, Linear programming and input-output analysis. The course will generate knowledge for the students about the market equilibrium, game theory, Linear programming and input-output analysis.

ECON E 404: Industrial Economics – II

Course Outcome: The students will come to know the industrial policy and industrial development in India.

ECON E 405: Econometrics – II

Course Outcome: The students will understand the application of time series and their estimation in empirical research.

ECON E 406: Financial Institutions and Markets – II

Course Outcome: The course will create the understanding of the students to know the Non-bank Financial Intermediaries, Financial markets, securities and derivatives markets and international financial markets.

ECON E 407:Agricultural Economics – II

Course Outcome: This course enable the students to know the importance of rural finance and cooperation in India, agricultural prices, agricultural growth in India and its relation with external sector.

ECON D 408: Dissertation (Project Work)

Course Outcome:

The students will get a field exposure on relevant research issues with orientation to the entire investigative procedure involved in sample-surveys, ranging from sample drawl and execution of the questionnaire, tabulation and computation to the economic analysis of data, report preparation and presentation.

ECON VAC 409: Cultural Heritage of South Odisha

MASTER OF ARTS IN EDUCATION

FIRST YEAR – 1ST SEMESTER Courses	**Distribution of Marks**		**Total Marks**		**Credit**	
Course No.	Title	**Mid Term**		**End Term**		Pages
EDN C 101	Philosophical Foundation of Education.	20	80	100	4	9-10
EDN C 102	Sociological Foundation of Education.	20	80	100	4	11-12
EDN C 103	Psychological Foundation of Education.	20	80	100	4	13-14
EDN C 104	Measurement and Evaluation in Education	20	80	100	4	16-17
EDN C 105 (P)	**PRACTICUM:** Presentation of Four Seminar Papers on each core papers of First semester.	-	100	100	4	18
Total		**500**		**20**		

FIRST YEAR – 2ND SEMESTER Courses	**Distribution of Marks**		**Total Marks**		**Credit**	
Course No.	**Title**	**Mid Term**		**End Term**		Pages
EDN C 201	Philosophical Foundation of Education.	20	80	100	4	19-20
EDN C 202	Psychological Foundation of Education.	20	80	100	4	21-22
EDN C 203	Measurement and Evaluation in Education	20	80	100	4	23-24

EDN C 204	**Pedagogy of School Subjects** (Any One) English,Odia,SocialSciences, Math and Science.	20	80	100	4	25-37	
EDN C 205 (P)	**PRACTICUM :** **A.** Development of Instructional objectives **B**. **Lesson Plan** I. Five Practice Lessons II. Two Criticism Lessons III. One Final Lesson.	--	50 50	100	4	38	
EDN C 206	VAC	Early Childhood Care and Education	20	80	NC	NC	39-40
Total: 500							

The Master of Arts (M. A) in Education is a two-year program for students seeking a specialized exposure to the domain of education. This programmed aims to specialize students to the multidisciplinary domain of education. It further develops capabilities in advanced teaching and learning, curriculum design, educational research, teacher education, policy development and analysis in education The programme is intended to engage students in educational reform that requires good understanding and the ability to work in curricular and pedagogical areas of at least one subject. Research practice and experience has been embedded in each of the courses, ensuring that students gain a sound understanding of the nature of educational research. Besides, planning and policies of education, educational technology, special education and teacher education are included as a course of study to empower students to understand the National and International issues both from local and global perspectives.

Programme Outcomes (POs)

- Development of knowledge, comprehension and skill in educational theory and practice.
- Promote education as core and liberal discipline in higher education.
- Development of critical thinking and skill to find out solution to prevalent educational problems.
- Application of academic knowledge in practical life situation.
- Development of a conceptual understanding of educational technology, ICT and its uses in educational practices.
- Conducting research in various academic areas.
- Establishing close link between school and society.
- Providing intrinsic motivation in pursuing higher education.
- Inculcation of constitutional values among students.
- Development of a sense of equity and inclusion in higher education.
- Development of adjustment skills among students.

- Acquisition of professional ethics and social responsibility in improving the quality of education.

EDN C -101 Philosophical Foundations of Education

Courseoutcome:

 Understand the basic concept underlying both education and philosophy.

 Explain about different Western and Indian philosophical thoughts in the light of Metaphysics, Epistemology, Axiology and their educational implications.

 Compare (similarities and differences) between different philosophical thoughts in the light of above dimensions.

 Critically analyze the present educational practices in the philosophical context.

 Explain the contributions of Western and Indian thinkers in education.

EDN C – 102 SOCIOLOGICAL FOUNDATION OF EDUCATION

Courseoutcome:

 Understand sociological perspectives of education

 Familiarize with the sociological theories in the context of education

 Identify different issues related to inequality in Indian society

 Relate different social situations and practices of education.

 Explain concept of social stratification, social change and social mobility.

 Critically analyze the social phenomenon in the context of Indian society.

 Apply sociological principles in the matter of economic and cultural development.

EDN C 103 PSYCHOLOGICAL FOUNDATION OF EDUCATION

Courseoutcome:

 Explain different schools of psychology and their varied contributions to education.

 Understand the effective role of different psychological perspectives on student behavior, learning process and adjustment.

 Explain various theories of learning and their educational implications.

 Critically analyze different approaches of learning.

 Elaborate the concept of growth and development with their educational implications.

 Describe the concept, areas and causes of individual differences with their educational implications.

EDN C-104 EDUCATIONAL MEASUREMENT AND EVALUATION

Courseoutcome:

 Describe separate meaning of various concepts like Test, Measurement, Assessment a n d Evaluation.

 Get clear understanding of various tests and scales uses in students' evaluation.

 Calculate the Psychometric properties of the test.

 Explain the essential quality of good test and develop them carefully.

 Know the process of standardization and develop a standardize tools.

EDN C - 105 PRACTICUM

SECOND SEMESTER

EDN C -201 Philosophical Foundation of Education

Courseoutcome:

 Explain about different Western and Indian philosophical thoughts in the light of Metaphysics, Epistemology, Axiology and their educational implications.

 Compare (similarities and differences) between different philosophical thoughts in the light of above dimensions.

 Critically analyze the present educational practices in their philosophical context.

 Explain the contributions of Western and Indian thinkers in education.

 Explain philosophical outlook to relate and analyze the context and problems of education.

 Realize the Practical importance of Yoga and Four Purusarthas.

EDN C-202 Psychological Foundation of Education

Courseoutcome:

 Describe different theories and approaches of Psychology: learning, motivation, intelligence, creativity and personality.

 Compare among different psychological perspectives of student behavior, learning process and adjustment.

 Administer and interpret different psychological test to measure psychological traits.

 Identify and describe various levels of disability.

EDN C-203 Measurement and Evaluation in Education

Courseoutcome:

 Understand the practical importance of various Models of Evaluation.

 Prepare a list of instructional objectives in the light of taxonomy developed in different behavioral domains.

 Aware about the uses of different tools and techniques of educational measurement.

 Know about various new trends in the field of educational measurement and evaluation.

EDN C-204 PEDAGOGY OF SCHOOL SUBJECTS

(Any one)

A. METHOD OF TEACHING ENGLISH

Courseoutcome:

• Explain place of English language in India;

• Describe English as a second language in the multi lingual syllabus India;

• Explain different methods of teaching English;

• Apply different teaching skills in the classroom; and

• Develop lesson plans, micro lesson plans, TLM for teaching English as Second Language.

B.METHOD OF TEACHING ODIA

Courseoutcome:

• Explain the concept of Mother Tongue;

• Justify the importance and objectives of teaching Mother Tongue (Odia) at Secondary Stage;

• Describe various pedagogical approaches of language teaching;

• Prepare subject specific lesson plan for improvement of language skills; and

• Plan and construct test to asses language skills and content areas.

C. METHOD OF TEACHING SOCIAL SCIENCES

Courseoutcome:

 Upgrade and update his knowledge of social studies by acquainting himself with various concepts;

 Develop the ability of critical and logical thinking;

 Acquainted with principles of formulating curriculum and preparation of text books in social studies;

 Acquainted with different methods, approaches, and techniques of teaching social studies;

 Formulate lesson planning for development of concepts and subject specific skills;

 Develop co-operation/collaboration/ability to work with others ,social, economic, cultural, and political environment; and

 Develop capacity for independent critical thinking including identifying/exploring fundamental relationships, making inference predicting consequences, suggestions, alternative methods of problem solving as when necessary.

D. METHOD OF TEACHING MATHEMATICS

Courseoutcome:

• Explain the nature and scope of mathematics;

• Identify different types of proof in mathematics and their application to solving mathematical problems;

• Appreciate the role of mathematics in day-today life;

• Relate the mathematical concepts with other school subjects;

• Achieve the mastery over the methods, strategy and approaches for transacting the contents of mathematics;

• Create the constructivist learning environment in the classroom;

• Develop learning-centred lesson plans and prepared content-enrich teaching learning materials;

• Integrate alternative assessment techniques in teaching mathematics;

• Develop mathematics achievement test and acquire of the scoring procedure; and

• Analyse learners learning difficulties and develop remedial strategies to meets needs of slow learners and to develop enrichment materials for the advanced learners.

E. METHOD OF TEACHING SCIENCE

Courseoutcome:

• Gain insight on the meaning nature, scope and objective of science education;

• Appreciate science as a dynamic body of knowledge ;

• Appreciate the fact that every child possesses curiosity about his natural surroundings;

• Identify and relate everyday experiences with learning science;

• Appreciate various approaches of teaching learning of science;

• Employ various techniques for learning science;

• Use different activities like demonstration, laboratory experiences observation, exploration for learning of science;

• Facilitate development of scientific attitudes in learner; and

• Construct appropriate assessment tools for evaluating science learning.

EDN C-205 P A C T I C U M

EDN-VAC C - 206 Early Childhood Care and Education (ECCE)

Courseoutcome:

 Describe the concept of Early Childhood Care and Education

 Identify the common types of diseases at early childhood

 Analyse the curriculum at Pre-School stage

 Evaluate the recommendations of various organizations on ECCE.

THIRD SEMESTER

EDN - CT 300 PERSPECTIVES IN EDUCATION

Courseoutcome:

 Know the philosophical outlook of Indian education

 Understand the role of education towards social and economic progress

 Apply the psychological principles in developing a child personality.

 Identify the area of difficulties and provide necessary guidance services.

EDN C-301 Development of Education in India

Courseoutcome:

Know about the system of education during British Period

 Understand the educational reformations made during British period.

 Familiar with the recommendations of various Education Committees and Commissions.

 Update themselves with different National Educational Policies and revolutionary steps undergone during post-independence era.

EDN C-302 RESEARCH METHODOLOGY IN EDUCATION

Courseoutcome:

 Describe about the evolutionary prospective of the process of knowledge construction.

 Describe the nature, scope and needs of Educational Research.

 Explain different approaches and designs of educational research.

 Identify and formulate research problem and state hypothesis.

 Differentiate between Probability and Non probability sampling techniques.

 Select and develop different types of data collection tools.

 Prepare research proposal and report.

SPECIAL PAPER

EDN C – 303 (A) OPEN AND DISTANCE EDUCATION

Courseoutcome:

• Explain the concept and Historical Development of Distance Education;

• Understand various issues related to distance Education

• Distinguish between Correspondence Education, distance education, and open learning;

• Familiar with different emerging concepts like Andragogy, self-learning and concept mapping.

• Discuss the socio-academic relevance of distance education.

• Develop an insight and examine critically the objectives of distance education;

• Describe the nature of distance learners and distance learning process;

• Describe SQ3R techniques and adopt the same technique for their study.

• Discuss various evaluation techniques and its relevance to distance learning.

SPECIAL PAPER

EDN C - 303 (B) INCLUSIVE EDUCATION

Courseoutcome:

 Describe historical background of inclusive education.

 Summarize concept, nature, and scope of inclusive education.

 Categorize types of inclusive education.

 Illustrate the types, characteristics of physically and sensory handicapped.

 Identify characteristics, etiology and prevention of physically and sensory handicapped.

 Categorize and summarize the types, characteristics, etiology and prevention of mentally handicapped.

SPECIAL PAPER EDN C – 303 (C) TEACHER EDUCATION

Courseoutcome:

 Describe the concept, scope and importance of Teacher Education.

 Analyze various policy recommendations for Teacher Education in India

 Critically evaluate professional ethics, autonomy and accountability of teachers in their profession.

 Identify the problems in implementation of the policies for Teacher Education.

 Analyze the role and functions of different agencies of teacher education in quality development of Teacher Education.

EDN C -304 PRACTICUM

EDN C-305 EDUCATION (V.A.C) VALUE ADDED COURSE

LEARNING TECHNIQUES

Courseoutcome:

 Students will be able to know the meaning, definition and characteristics of Teaching.

 Students will be able to comprehend basic idea regarding the phases and levels of teaching.

 Students will able to know basic principles and skills of teaching.

 Students will be able to develop their level of confidence through practice of different skills of teaching.

FOURTH SEMESTER

EDN C-401 Advanced Statistics in Education

Courseoutcome:

 Describe the concept, importance and use Descriptive and Inferential statistics in Research.

 Describe the concept, assumptions and use of Parametric and Non parametric statistics.

 Differentiate between the Parametric and Non parametric statistics in terms of their use in different contexts.

 Compute and use various statistical measures of Co-efficient of correlation, Variability, Regression and Prediction.

 Demonstrate the skill of computation of various type of Parametric and Non parametric statistics by use of SPSS.

EDN C -402 EDUCATIONAL ADMINISTRATION AND MANAGEMENT

Courseoutcome:

 Understand various components of institutional management;

 State the principles of resource management, performance appraisal time management in educational institutions;

 Explain the nature and functions of educational administration and supervision;

 Describe defects of present system of supervision;

 Reflect upon specific trends in educational supervision;

 Understand the role of central, state and local agencies in educational administration.

 Describe various techniques of supervision.

 Develop a thorough idea about leadership.

EDN C-403 ADVANCED EDUCATIONAL TECHNOLOGY

Courseoutcome:

 Describe the concept and nature of Educational Technology, ICT in education and information Technology.

 Explain the models of Instructional Design.

 Explain the various application of Computer in education.

 Describe the concept and approaches of e-learning and social learning.

 Relate various Learning Theories with corresponding Instructional Strategies.

 Distinguish among different types of Instructional model.

 Apply the knowledge of Educational Technology, ICT and Instructional Technology to search information on different Open Education Resources.

 Acquaint themselves with different new trends in the field of educational technology.

SPECIAL PAPER EDN C-404(A)

GUIDANCE AND COUNSELING IN EDUCATION

Courseoutcome:

 Summarize the concept, need, principles and bases of guidance.

 Apply various tools and techniques of guidance in appropriate contexts.

 Identify the role of school in organizing different guidance programmes.

 Illustrate the concept, scope and type of counseling.

 Extract the process, tools and techniques of counseling.

 Design different types of guidance services.

SPECIAL PAPER EDN C-404(B) CURRICULUM DEVELOPMENT

Courseoutcome:

 Illustrate the concept of Curriculum Development and various stages of Curriculum Development

 Compare among different types and models of curriculum development and their importance.

 Explain the process of curriculum development and curriculum implementations.

 Critically evaluate different Models of curriculum Evaluation

 Critically analyze the Models of curriculum development a n d t h e i r practical relevance in Indian context.

 Explain various factors affecting Curriculum.

SPECIAL PAPER EDN C 404 (C) HIGHER EDUCATION IN INDIA

Courseoutcome:

 Analyze various policies and their recommendationson various aspects of higher education.

 Evaluate the functions and importance of different Higher education institutions.

 Examine the problems in implementation of the policies of higher education in India.

 Explore the problems and reforms in higher education in India.

 Analyze role of various agencies of higher education in India.

EDNC – 405PRACTCUM

DISSERTATION

VAC C-406CULTURAL HERITAGE OF SOUTHERN ODISHA

Courseoutcome:

The teaching imparted to the P.G. students of Berhampur University on the various dimensions of the literary and cultural heritage of South Odisha will help them to acquire a valuable understanding of the same. They will be inspired adequately to take the positivises learnt from the course and use them in future in their personal literary and cultural pursuits and thereby promote the literature and culture of Odisha on a global scale.

ENGLISH

SEMESTER-I

Paper Code	Title	Marks	Credits
ENGL C101	BRITISH DRAMA: Renaissance to Restoration	100	4
ENGL C102	BRITISH POETRY: 16th to 19th Century	100	4
ENGL C103	BRITISH FICTION:18th&19th Century	100	4
ENGL C104	LITERARY ESSAYS AND THEORY	100	4
ENGL C105	LINGUISTICS	100	4

SEMESTER-II

Paper Code	Title	Marks	Credits
ENGL C201	TWENTIETH CENTURY FICTION	100	4
ENGL C202	SHORT STORIES	100	4
ENGL C203	MODERN DRAMA	100	4
ENGL C204	MODERN POETRY	100	4
ENGL C205	ELT	100	4
ENG VAC 2	SOFT SKILLS	-	Non Credit

SEMESTER-III

Paper Code	Titel	Marks	Credits	Note

Under CBCT, the students of the Department of English can opt one paper offered by any other department or the parent Department				
ENGL CT 300	PROFESSIONAL AND ACADEMIC WRITING	100	4	
ENGL C 301	MODERN INDIAAN LITERATURE	100	4	
ENGL E 302	SPECIAL PAPER:AMERICAN LITERATUTE **I**: Philosophy,Poetry and Drama	100	4	**A Student is allowed to opt for any two Core ELECTIVES 302 OR 304,AND 303 OR 305**
ENGL E 303	SPECIAL PAPER:GREEN STUDIES	100	4	
ENGL E 304	SPECIAL PAPER:Translation: Vol.**I**		4	
ENGL E 305	SPECIAL PAPER:Creative Writing: Vol.**I**		4	
ENGL E 306	WOMEN POETS	100	4	
ENGL VAC	FILM	-	Non	
	APPRECIATION		Credit	

SEMESTER-IV

Paper Code	Title	Marks	Credits	
ENGL C 401	RACE AND GENDER	100	4	
ENGL C 402	RESCARCH METHODS AND DISSERTATION	100	4	
ENGL C 403	COMMONWEALTYH LITERATURE	100	4	**A Student is allowed to opt for two core Electives Individually 404 or 407 and 405 or 408**
ENGL E 404	SPECIAL PAPER: AMERICAN LITERATURE **II**:Novel	100	4	
ENGL E 405	SPECIAL PAPER: ECOLINGUISTICS	100	4	
ENGL E 407	SPECIAL PAPER :TranslationVol.**II**	100	4	
ENGL E 408	SPECIAL PAPER :Creative Writing Vol.**II**	100	4	
ENGL AC 406	Cultural Hrritage of South Odisha	-	Non Credit	

ENGLISH

The two-year Master of Arts (English) programme shall comprise FOUR Semesters. Semester I and Semester II shall be taught in the first year, while Semester III and Semester IV shall be taught in the second year of the M. A. Programme. Each semester shall consist of FIVE papers.

Objective:

i. The course is meant for advanced readers in the field of English Literature in particular and World Literature in general with an interdisciplinary approach and a view to helping them acquire the following:

a) Greater flexibility in understanding the cultures of different parts of the world through their literature

b) Ability to develop a diachronic understanding of how the English language has been differently handled in different generations as well as different continents and cultures.

c) Greater ability to use the English language both professionally and personally at different phases of human experience.

d) Greater ability to understand and develop competence in English Linguistics and technicalities of ELT.

e) Ability to understand ecology, sustainability and empathize with the world around

Visualized outcome of the Programme

a) With an enhanced worldview through literatures in English, the students can shape into great ambassadors of literary as well as cultural exchange on a global scale.

b) The course will help promote humanistic ideals while emphasizing the need for sustainability, global peace and ecological well-being.

c) The course will help the students find employment in different sectors with expertise in English language and enlarged worldview.

Syllabi-2023-24

HISTORY

SEMESTER-I

Course Name & Number	Course Title	Credits	Mark
HIST C101	World Civilization	4	100
HIST C 102	Ancient History of India-I	4	100
HIST C 103	Medieval Indian History (1206-1523AD)-I	4	100
HIST C 104	History of Modern India-I	4	100
HIST C 105	History of Odisha (Form Early Times to C.E. 1568AD)	4	100
	SEMESTER-II		
HIST C 201	Ancient Indian History-II	4	100
HIST C 202	Medieval Indian History (1526-1800)-II	4	100
HIST C 203	History of Modern India-II	4	100
HIST C 204	Modern World History	4	100
HIST C 205	History Odisha (Form 1569-c.e.1948)-II	4	100
HIST VAC C 206	Indian Monuments (Non-Credit Course)		
	SEMESTER-III		
HIST CT 300	Cultural History Of India (CBCT)	4	100
HIST C 301	History of Science and Technology in India	4	100
HIST C 302	Historiography	4	100
HIST C 303	A-Socio-cultural History Of Ancient India RO D-Studies of Early Medieval India 750-1206AD OR C-History of Constitutional and Administrative Development	4	100
HIST E 304	A-Socio-Cultural History of Early Odisha A- OR B-Medieval Odisha History:Society and culture OR C-History of Progressive Modern Odisha	4	100
HIST VAC C 305	General Studies for Civil Services and Othr Competitive Examinations(Non-Credit Course)		
	SEMESTER-IV		
HIST C 401	Research Methodology	4	100
HIST C 402	Women's History of India	4	100
HIST E 403	A-History of Ancient India from 550-1200AD OR B-Cultural History Of Medieval India OR C-History of Modern Education in India	4	100
HIST E 404	A-Economic History of Ancient India OR B-Socio,Economic and Religious Studies of Medieval India OR C-Socio-cultural History of Modern India	4	100
HIST C 405	Dissertation	4	100
Add-on 406	Cultural Heritage of South Odisha(Non-Credit Course)		

HISTORY

Objective and brief description on course and expectations: This course is designed to provide knowledge about the ancient civilization, ancient history, history of the world. Through this subject logical and analytical information on the development of human civilizations will be inculcated into the students mind. The rise and progress of the social, economic and political structures in the ancient world is an important subject to study and for better understanding of the present society.

Outcomes: Basic ideas and concept on human civilizations and progress and helpful for all competitive examinations and research for higher study and job. Help for all competitive examinations, entrance examinations and research.

M.A HOME SCIENCE

(2023-24)

FRIST SEMESTER						
Course Code	Titel of the paper	Credit	Core/Elective	Internal	External	Mark
HOME C101	EXTENSION	4	Core	20	80	100
HOME C102	EDUCATION	4	Core	20	80	100
HOME C103	FOODS AND NUTRITION	4	Core	20	80	100
HOME C104	FAMILY SOCIOLOGY	4	Core	20	80	100
HOME C105	PRACTICAL	4	Core	20 (Record)	80	100
	Total	20	-	100	400	500
SECOND SEMESTER						
Course Code	Title of the paper	Credit	Core/Elective	Internal	External	Mark
HOME C201	FAMILY RESOURCE MAHANEMENT	4	Core	20	80	100
HOME C202	TEXTILES AND CLOTHING	4	Core	20	80	100
HOME C203	COMMUNITY HEALTH	4	Core	20	80	100
HOME C204	COUNSELING AND GUIDANCE	4	Core	20	80	100
HOME C205	PRACTICAL	4	Core	20 (Record)	80	100
HOME VAC-206	NURSERY TEACHER TRAINING(NTT)			NONCREDIT COURSE		Grade
	Total	20	-	100	400	500
THIRD SEMESTER						
Course Code	**Title of the paper**	**Credit**	**Core/Elective**	**Internal**	**External**	**mark**
HOME C-301	RESEARCH METHODOLOGY	4	Core	20	80	100
HOME C-302	MENTAL HEALTH ANDLIFE STYLE	4	Core	20	80	100
HOME E-303	EXTENSION AND COMMUNICATION TECHNOLOGIES	4	Elective	20	80	100
HOME E-304	COMMUNICATION IN RURAL DEVELOPMENT	4	Elective	20	80	100
HOME E-305	EARLY CHILDHOOD CARE AND EDUCATION	4	Elective	20	80	100
HOME E-306	EXCEPTIONNAL CHILDREN	4	Elective	20	80	100
HOME E-307	FOOD SERVICE MANAGEMENT	4	Core	20	80	100
HOME E-308	CLINICAL NURITION AND DIETETICS	4	Core	20	80	100
HOME E-309	FAMILY AND COMMUNITY SCIENCE	4	CBCT	20	80	100
HOMME VAC-309	YOGA AND HEALTH	NON-CREDIT				Grade
	Total	4		100	400	500
FOURTH SEMSTER						
Course Code	Title of the	Credit	Core/Elective	Internal	External	Mark

	paper					
HOME C-401	CHILD STUDY AND FAMILY RELATIONS	4	Core	20	80	100
HOME C-402	NUTRITION THROUGHLIFE CYCLE	4	Core	20	80	100
HOME C-403	POPULATION STUDIES AND CONSUMER EDUCATION	4	Core	20	80	100
HOME E-404	EXTENSION TRAINING AND ADMINISTRATION	4	Elective	20	80	100
HOME E-405	THEORIES OF CHILD DEVELOPMENT	4	Elective	20	80	100
HOME E-406	FOOD SCIENCE	4	Elective	20	80	100
HOME E-407	DISSERTATION/INTERNSHIP (Extension Education)	4	Elective	20	80	100
HOME E-408	DISSERTATION /INTERNSHIP (Human Development)	4	Elective	20	80	100
HOME E-409	DISSERTATION/INTERNSHIP (Food and Nutrition)	4	Elective	20	80	100
HOME AC-410	CULTURAL HERITAGE OF SOUTH ODISHA	NON-CREDIT COURSE				
	Total	20	-	100	400	500
	Grand Total	80		400	1600	2000

Choice of any one Specialization Compirses of the following papers in 3rd and 4th semester in addition the core (Compulsory) papers.

- A Student can opt for HOME (E-303,E-304 E-404 & E-407)

HOME SCIENCE

PROGRAMME OUTCOME

The syllabus is designed on Choice Based Credit system in accordance with the guidelines provided by the University grand Commission. The syllabus of Master of Home Science is full time two years programme with four semesters. The uniform nature of credits specified for the master's programme describes the equitable weightages of various courses of the programme the number of credits along with grade points that a student's satisfactorily completed, measures the performance of the students. Satisfactory progress and completion and completion of course are subject to a student's maintaining of a minimum Cumulative Grade Point Average (CGPA) as well as minimum grades in different subjects of the programme description and a lay out of Credit Distribution for the course programme is detailed below.

HOME C-101 EXTENSIONEDUCATION

Course out comes

 To learn the basic objectives of the extension education in overall development of the rural people & helps in studying and solving the rural problems

 To bring about desirable changes in the human behaviour, which includes change in knowledge, skill and attitude through communication technologies

HOME C- 102 FOOD AND NUTRITION

Course out comes:

 To gain knowledge on importance of nutrition and its nutritive value

 To learn the nutrition related deficiencies.

 To learn the food quality control assessment, food laws, prevention method, storage method etc.

HOME C-103 HUMAN DEVELOPMENT

Course out comes:

 To learn and gain the basic principle of human development

 To learn the overall developmental process in different stages of life

HOME C- 104 FAMILY SOCIOLOGY AND WOMEN STUDIES

Course out comes:

 To understand society, individual, physical growth and mental health.

 To explain development for individual, family and community by different human development theories.

HOME C- 105 PRACTICAL

Course out comes:

 To learn the assessment of nutritional status.

 To understand the different developmental process by interview, case study and survey.

 To learn the importance of education in women empowerment and gender equality in the society

SECOND SEMESTER

HOME C-201

Course out comes:

 To learn the important process of home management to manage the family

 To learn the use of both human and non-human resources to achieve the family goals.

HOME C-202 TEXTILE AND CLOTHING

Course out comes:

 To learn the process of identification of different textile materials like fiber, yarn and fabric.

 To know the fabric construction by different weaving methods.

 To understand the different finishing process, printing methods of fabric

HOME C-203 COMMUNITY HEALTH

Course out comes:

 To learn about public health in different communities.

 To know about the different community health problems such as respiratory

infection, intestinal infection, arthropod-borne infection and sexually transmitted diseases etc.

HOME C-204 COUNSELLING AND GUIDANCE

Course out comes:

 To know about the concept of counselling and guidance

 To learn the different types of counselling techniques and the need of counselling in different areas such as family, marriage counselling, etc.

 To learn the guidance in educational institutions.

***HOME VAC- 206**

NURSERY TEACHER TRAINING (NTT)

Course objectives:

1. To enable the students to have good health.
2. To motivate the students to learn how to lead stress free life.
3. To Practice asanas and meditation.

Course out comes:

1. To obtain Physical & Mental fitness.
2. Inculcating creativity among the students
3. Developing positive & wholesome attitude towards life.

THIRD SEMESTER

HOME C- 301 RESEARCH METHODOLOGY

Course out comes:

 Students can learn principles of research and types of research which helps them to report writing.

 Students can develop the ability to apply the methodology on research and project works**.**

HOME C-302 MENTAL HEALTH AND LIFE STYLE

Course out comes:

 To learn mental health and factors affecting mental health.

 To know the common mental health problems among children, adolescents and adults

HOME E-303 EXTENSION AND COMMUNICATION TECHNOLOGY

Course out comes:

 To develop Extension communication in both formal and non-formal education

 To develop teaching and learning process through different techniques

HOME E-304 COMMUNICATION IN RURAL DEVELOPMENT

Course out comes:

 To gain useful information related to their problems and measure taken for the improvement to all segments of rural population

 Students learn about the Innovation and Adoption, develop leadership qualities through different training method provided by teacher, trainer etc.

HOME E-305 EARLY CHILDHOOD CARE AND EDUCATION

Course out comes:

 To gain knowledge related to the importance of early childhood care and their education

 To learn the different method and practices use to develop early childhood care and their education which helps in socialization process

HOME E-306

EXPECTIONAL CHILDREN

Course out comes:

 To learn about the different types of health issues related to physical and mental health.

 To understand the different challenges faced by the Exceptional children.

 To aware about the programme and policies for Disabled children.

HOME E-307 FOOD SERVICE MANAGEMENT

Course out comes:

 To learn the resource management in food service management.

 To get the idea how to management space, storage space, service area, selection of equipment.

 To develop the different management process such as food, financial and personnel management.

HOME E-308 CLINICAL NUTRITION AND DEICTICS

Course out comes:

 To learn therapeutic diets for patients suffering from different diseases.

 To learn the role of dietitians and diet planning.

HSCT-300 FAMILY AND COMMUNITY HEALTH (CBCT)

Course out comes:

 . To learn by the students of different depts other than home science students.

 To learn the process and period of human development and its significance.

HOME VAC -310 YOGA AND HEALTH

Course Objective-

1. To enable the students to have good health.
2. To motivate the students to learn how to lead stress free life.
3. To Practice asanas and meditation.

Course out comes:

1. To obtain Physical & Mental fitness.
2. Inculcating creativity among the students
3. Developing positive & wholesome attitude towards life.

FOURTH SEMESTER

HOME C-401 **CHILD STUDY AND FAMILY RELATION**

Course out comes:

 To learn the importance of child study and their developmental process.

 To learn the different techniques used in child study.

 To learn the changing family relationship throughout the lifecycle,

HOME C-402 NUTRITION THROUGH LIFE CYCLE

Course out comes:

 To learn the nutritional need for the different stages of life.

 To gain knowledge about the nutritional need during different stages of life**.**

HOME C403 POPULATION STUDIES AND CONSUMER EDUCATION

Course out comes:

- To learn the demography, fertility, structure and need for study of population structure
- To learn the consumer behavior, Laws protecting Consumer and Consumer Awareness programme .

HOME E-404 EXTENSION TRAINING AND ADMINISTRATION

Course out comes:

- To learn training and development programme in administration.
- To learn the Training evaluation methods by use of technology.

HOME E-405 DISSERTATION/ INTERNSHIP

Course outcome: -.

- To develop the ability to analyze the health systems in the community level.
- To design, write and develop skill to prepare their project

HOME E- 406 THEORIES OF CHILD DEVELOPMENT

Course out comes:

- To learn the developmental theory developed by different theorist in human development process
- Students gain knowledge of Cognitive Development, Psychoanalytic theory, social learning theory etc

HOME E- 407

DISSERTATION/ INTERNSHIP

Course outcome: -.

- Students visit the different health care center, understand and prepare the internship report, prepare dissertation which can boost their moral value and depth knowledge

HOME E 408 FOOD SCIENCE

Course out comes:

- To Learn the nutritional biochemistry
- To learn the analysis of food quality assessment through different test

HOME E-409 DISSERTATION / INTERNSHIP

Course outcome: -.

- Students visit the different health care center, understand and prepare the internship report, prepare dissertation which can boost their moral value and depth knowledge

HOME AC -410 CULTURAL HERITAGE OF SOUTH ODISHA

First Semester			
Subject Title	**Internal**	**External**	**Credits**
PARTIAL DIFFERENTIAL EQUATIONS AND ITS APPLICATION	20	80	4
TOPOLOGY	20	80	4
ALGEBRA-I	20	80	4
ELEMENTARY COMPLEX ANALYSIS	20	80	4
NUMERICAL ANALYSIS AND ITS APPLICATIONS	20	80	4

Second Semester			
ABSTRACT MEASURE	20	80	4
ADVANCED CALCULUS	20	80	4
ALGEBRA-II	20	80	4
ADVANCED COMPLEX ANASYSIS	20	80	4
GRAPH THEORY	20	80	4
AN INTRODUCTION TO MATLAB		Grade	Non-Credits
Third Semester			
FUNCTIONAL ANALYSIS-I	20	80	4
NUMBER THEORETIC CRYPTOGRAPHY-I	20	80	4
A Student is allowed to opt any two papers			
OPTIMIZATION TECHNIQUES-I	20	80	4
ORDINARY DIFFERNTIAL EQUATIONS-I	20	80	4
MATRIX TRANSFORMATIONS IN SWQUENCE SPACES-I	20	80	4
FLUID DYNAMICS-I	20	80	4
ABSTRACT MEASURE AND PROBALILITY-I	20	80	4
FUZZY SETS AND FUZZY LOGIC	20	80	4
MATHEMATICAL STATISTICS	20	80	4
AN INTRODUCTION TO LATEX	Grade	Non-Credits	
Other Department students will opt this paper			
MATHEMATICAL METHODS	20	80	4
Fourth Semester			
FUNCTIONAL ANALYSIS-II	20	80	4
NUMBER THEORETIC CRYPTOGRAPHY-II	20	80	4
A Student is allowed to opt any two papers			
OPTIMIZATION TECHNIQUES-II	20	80	4
ORDINARY DIFFERENTIAL EQUATIONS-II	20	80	4
MATRIX TRANSFORMATIONS IN SEQUENCE SPACES-II	20	80	4
FLUID DYNAMICS-II	20	80	4
ABSTRACT MEASURE AND PROBABLITY-II	20	80	4
CULTURAL HERITAGE OF SOUTH ODISHA		Grade	Non-Credits
Total		**2000**	**80**

MATHAMETICS

Programme Outcome:

A two years regular course M.A./M.Sc. in Mathematics will develop a breadth of understanding in Calculus, Complex analysis, Measure theory, Numerical analysis, Topology, Differential equations, Functional analysis, Optimization techniques, Number theoretic Cryptography, Graph theory and Statistics along with a depth of knowledge in algebra and analysis. The course is designed to make the students competent to solve ordinary and partial differential equations using Laplace transform and Fourier transform techniques, Eigen value problems, systems of linear differential equations, problems concerning topological spaces, continuous

functions, product topologies, and quotient topologies, extension fields, roots of polynomials, complex integrals, elliptic functions. The course also includes the initial value problems by using single step methods, multi step methods, problems on interpolation, numerical differentiation and integration, measurable sets, measurable functions, problems on Green, Gauss and Stokes theorems, problems on probability distributions and generating functions, problems on Hahn-Banach theorems, problems on primitive roots, quadratic residues, and quadratic non-residues, cryptography, zero knowledge protocol and oblivious transfer, the rho method, the continued fraction method. After completion of this course the students will be capable in different competitive examinations like, TIFR, IISc, HRI, CSIR (NET & JRF), GATE, Civil services and pursue research in any national and international institutes of high repute. This course also makes the students cognizant on various features of teaching, learning, and research. Students after completion of this course are expected to operate the mathematical projects and magnify their skills in writing va

Sub. Code: MATH C101 Partial Differential Equations and its Applications

Course Outcome:

- To solve the Cauchy problems and wave equations with homogeneous and Nonhomogeneous equations.
- To solve Eigen value Problems and Special Functions, Boundary Value Problems of partial differential equations.
- To solve partial differential equations by applying Fourier Transforms and Laplace Transforms.

Sub. Code: MATH C102 Topology

Course Outcome:

- To learn about different Topological spaces, Open sets, Closed sets, Connected Sets and Compact sets.
- To understand the Metric spaces, Regular and Normal Spaces.

Sub. Code: MATH C103 Algebra-I

Course Outcome:

- To study p- Sylow's Subgroups of a finite Group.
- To construct the maximal Ideals by using irreducible polynomials.
- To learn about finite extension field, Algebraic element and transcendental numbers.

Sub. Code: MATH C104 Elementary Complex Analysis

Course Outcome:

- To find an analytic functions when its real or imaginary part is known.
- To establish a linear transformation through cross ratio.
- To compute the complex integrations

Sub. Code: MATH C105 Numerical Analysis and its Applications

Course Outcome:

- To obtain the interpolating polynomial by using different methods.
- To solve numerical integration by using various numerical methods.
- To solve the ordinary differential equations (IVP) by single and multi step methods.

Sub. Code: MATH C201 Abstract Measure

Course Outcome:

- To identify the measurable sets and measurable functions.
- To learn about Lebesgue Integrable functions.

Sub. Code: MATH C202 Advanced Calculus

Course Outcome:

- To understand the derivatives for functions of several variables, Differentiations of transformations and Inverse of transformations.

- To exhibit the set function, transformation of multiple integrals.

Sub. Code: MATH C203 Algebra-II

Course Outcome:

 To understand the basic knowledge of Golois Group and solvability by radicals.

 To gain the knowledge about the triangular, Nilpotent and Jordan Form of the linear transformation.

 To know the Application of Hermitian, Unitary and normal Transformations.

Sub. Code: MATH C204 Advanced Complex Analysis

Course Outcome:

 To learn about various types of power series expansions and some special functions.

Sub. Code: MATH C205 Graph Theory

Course Outcome:

- To learn about various types of graphs and trees.
- To understand the colouring of graphs.

Sub. Code: MATH VAC206 An Introduction to MATLAB

Course Outcome:

 To analyze and design systems.

Sub. Code: MATH C301 Functional Analysis-I

Course Outcome:

 To learn about Normed spaces and Banach spaces

 To acquire the knowledge of Application of Uniform Boundedness Principle, Closed Graph and Open Mapping Theorem.

Sub. Code: MATH C302 Number Theoretic Cryptography-I

Course Outcome:

 To able time estimates for doing arithmetic, Divisibility and Euclidean algorithm.

 To able the factoring large number, to find the quadratic residues in Finite fields.

Sub. Code: MATH E303 Optimization Techniques-I

Course Outcome:

 To solve the integer programming problems by applying different type of methods.

 To solve the game theory problems by using linear programming, graphical methods and dominance principal.

Sub. Code: MATH E304 Ordinary Differential Equations-I

Course Outcome:

 To solve the linear differential equations of higher order with variable coefficients and constant coefficients.

 To learn the existence and uniqueness of solutions of first order ordinary differential equations with initial conditions and systems of first order ordinary differential equations with constant coefficients.

Sub. Code: MATH E305 Matrix Transformations in Sequence Spaces-I

Course Outcome:

 To learn about different types of limitation methods for matrix transformations.

 To understand various matrices such as Norlund and Riesz Musos, Scbur Matrices, Cesaro and Holder Matrices, etc.

Sub. Code: MATH E306 Fluid Dynamics-I

Course Outcome:

 To study different types of fluids and various governing equations of it.

 To solve equations of the flow of viscous compressible and incompressible fluids.

Sub. Code: MATH E307 Abstract Measure and Probability-I

Course Outcome:

 To introduce the Measures on Boolean semi-Algebra and -algebra.

 To understand the several Distributions such as Binomial Distribution, Poisson Distribution and Normal Distribution and several Approximations to such Distribution.

Sub. Code: MATH E308 Fuzzy Sets and Fuzzy Logic

Course Outcome:

 To introduce Fuzzy sets versus crisp sets, types of Fuzzy set.

 To learn about Fuzzy Arithmetic, Fuzzy numbers, Fuzzy Relation.

Sub. Code: MATH E309 Mathematical Statistics

Course Outcome:

 To solve the probability problems of discrete and continuous random variables.

 To solve the probability problems of probability distribution and generating functions.

Sub. Code: MATH VAC310 An Introduction to LATEX

Course Outcome:

 To be capable to write a research article in LaTeX.

Sub. Code: MATH CT300 Mathematical Methods

Course Outcome:

 To solve functions using limit, differentiation.

 To solve numerical integration by using various numerical methods.

Sub. Code: MATH C401 Functional Analysis-II

Course Outcome:

 To learn the Weak and Weak *convergence Reflexivity.

 To Normal, Unitary and Self-Adjoint Operators.

Sub. Code: MATH C402 Number Theoretic Cryptography-II

Course Outcome:

 To solve the Discrete log problems by using Silver-Pihlog-Samir method and Knapsack problems.

- To find the factors of large numbers.

Sub. Code: MATH D408 Dissertation

Course Outcome:

 To acquire knowledge for writing research proposal for pursuing higher studies in mathematics.

Sub. Code: MATH E403 Optimization Techniques-II

Course Outcome:

 To solve the quadratic programs by using Wolfe's algorithm, Beales Algorithm, Fletchers method.

 To solve the non linear programs by using Frank-Wolfe's method, Reduced gradient method and Kelley’s cutting method.

Sub. Code: MATH E404 Ordinary Differential Equations -II

Course Outcome:

 To analyze the stability of Nonlinear Systems of first order ordinary differential equations.

 To explain the oscillatory solutions of Nonlinear Differential Equations.

Sub. Code: MATH E405 Matrix Transformations in Sequence Spaces -II

Course Outcome:

 To demonstrate the universal Tauberian Theorem, some special types of matrices.

 To understand the summability theory.

Sub. Code: MATH E406 Fluid Dynamics-II

Course Outcome:

 To understand nonlinear Navier-Stokes equations of motion and its solutions.

 To learn about the various types of flow of fluid through different mediums.

Sub. Code: MATH E407 Abstract Measure and Probability -II

Course Outcome:

 To know about Riemann and Lebesgue Integrals of different functions and probability measure on Rn.

- To understand the convulation theory on LP spaces.

Sub. Code: MATH AC409 Cultural Heritage of South Odisha

Course Outcome:

 To acquire a valuable understanding of the literary and cultural heritage of South Odisha.

 To promote the literature and culture of Odisha on a global scale.

PHYSICS

III	PHY-C301	Relativistic Quantum Mechanics & Field Theor	4	4	3	20	80	100

1	**Course**	**Course title**	**Hrs per Week**	**Credit**	**Exam Hrs**	**Mark**		**Total**
						Mid Sem	**End Sem**	
I	PHY-C 101	Mathematical Methods in Physics	4	4	3	20	80	100
	PHY-C 102	CLASSICAL Mechanics	4	4	3	20	80	100
	PHY-C 103	Computer Programming And Numerical Analysis	4	4	3	20	80	100
	PHY-C 104	Quantum Mechanics-I	4	4	3	20	80	100
	PHY-C 105	Computer Programming In Physics(Practical)	12	6	6	20	80	100
		Total	**28**	**22**				**500**
II	PHY-C201	Classical Electrodynamics	4	4	3	20	80	100
	PHY-C202	Statistical Mechanics	4	4	3	20	80	100
	PHY-C203	Basic Solid-State Physics	4	4	3	20	80	100
	PHY-C204	Quantum Mechanice-II	4	4	3	20	80	100
	PHY-C205	Optic(Practical)	12	4	4	20	80	100
	PHY-VAC206	Material Characterization Technique OR DFT and Materials Modeling						
		Total	**28**	**22**				**500**

	PHY-E302	Electronics	4	4	3	20	80	100

	PHY-E303 A OR PHY-E303B	Condensed Matter & Materials Physics-I Or Nuclear Science-1 (N.P.)	4	4	3	20	80	100
			4	4	3	20	80	100
	PHY-EP304	Modern Physics(Practical)	12	6	4	20	80	100
	PHY-VAC305	Optical Fiber Sensor Or Fiber Optics Or Atomic And Molecular Spectra						
	PHY-CT300	Fiber Optics And Optoelectronics	04	04	30	20	80	100
		Total	**28**	**22**				**500**
IV	PHY-E401A OR PHY-E401B	Elementary Particle Physics Or GTR	4	4	3	20	80	100
	PHY-C402	Basic Nuclear Physics	4	4	3	20	80	100
	PHY-CE403	Project And Seminar	4	4			50 50	100
	PHY-CE404A OR PHY-CE404B	Condensed Matter & Materials Physics II OR Nuclear Science-II	4	4	3	20	80	100
			12	6	4	20	80	100
	PHY-CE405A OR PHY-CE405B	CONDENSED Matter & Materials Physics(Practical) Or Nuclear Science(Practical)	12	6	4	20	80	100
	PHY-AC406	Cultural Heritage Of South Odisha.						
		Total	**28**	**22**				**500**
		Grand Total	**112**	**88**				**2000**

PHYSICS

ProgrammeOutcome:

- Instill among the students an attitude of being inquisitive so that they are capableof independentandcritical thinking.
- Trainupthestudentsinsuchawaythattheycanobjectivelycarryoutinvestigations,scientificand /orotherwise,withoutbeingbiasedorwithouthavingany preconceived notions.
- Equip the students with such skills to make them understand the mysteries ofnature atdifferentscalesofspaceandtime, from subnuclearto cosmological.
- Enable the students to analyze problems starting from first principles, evaluateandvalidateexperimentalresults, anddrawlogicalconclusions.
- Prepare the students to pursue research careers, careers in academics, industriesinPhysicalScienceandalliedfields.
- As technology exploits the rules of Physics, students properly trained in Physicscanbe goodresearchers inthe Fieldof technologytoo.
- Imbibe effective scientific and/or technical communication abilities among thestudents.

SubCode: PHY- C101MathematicalMethodsinPhysics

Courseoutcome:

- ✓ Tolearnaboutvarious mathematicaltools employedto study physicsproblems.
- ✓ Togetgoodexperienceinusingandunderstandingareaslike complexvariables,Tensoranalysis, GroupTheory and specialfunctions.
- ✓ Tostrengthenthestudent'sanalyticalabilitiesandhelpthem formulatedifferent relationshipsinmechanicsandphysicscompactly.

Sub.Code:PHY-C102 ClassicalMechanics

Courseoutcomes:

- ✓ Tounderstanddegrees of freedomanddynamicsof arigid bodymotion.
- ✓ Tounderstandcomplexkind ofgyroscopicmotionas likeheavysymmetrictop.
- ✓ TomakeoutacleardistinctionofLagrangianandHamiltoniandynamics.
- ✓ TounderstandHamiltonian dynamicsandevolutionofquantummechanics.
- ✓ Tounderstandsmalloscillationoccurringinmicroandmacro-systems

SubCode:PHY-C103 ComputerProgrammingandNumericalAnalysis

Courseoutcomes:

- ✓ Tounderstand the importanceofcomputerapplication inScienceandengineering.
- ✓ Tolearnand understandbasic computerlanguageFORTRAN77.
- ✓ Tocomputeand developalgorithmsforsolutionofscienceandengineering problems.

SubCode:PHY-C104 QuantumMechanics-1

CourseOutcomes:

- ✓ To apply quantum mechanics to the dynamics of single particle in one-,,two andthree-dimensionalpotential fields
- ✓ Tostrengthentheanalyticalabilitiesofthestudentandhelpthemtoapplyitin differentbranchesof physics compactly.

SubCode:PHY- P105 ComputerProgrammingandNumericalAnalysis (Laboratory work)

CourseOutcomes:

- ✓ Tolearnand practicebasiccomputer languageFORTRAN77.
- ✓ ToprogramdifferentmethodsassociatewithPhysicsandEngineering

SubCode: PHY- C201: ClassicalElectrodynamics

CourseOutcomes:

- ✓ Toemphasizeelectric andmagneticradiationfieldphenomenaandBremsstrahlungradiationin aCoulomb field and Cherenkovradiation,
- ✓ ElectromagneticScattering**.**

SubCode:PHY-C202 StatisticalMechanics

CourseOutcomes:

- ✓ *To*developaworkingknowledgeofstatistical mechanics.
- ✓ To learn statistical interpretation of various phenomena like ensembles, ideal systems,photon gas, Low temperature physics and their applications, Bose Einstein condensation,phasetransition.
- ✓ Toexploreitsapplicationsinotherbranchesofphysicslikematerialscienceandthe physicsofcondensedmatter.

Sub.Code:PHY-C203 BasicSolidStatePhysics

CourseOutcomes:

- ✓ Tounderstanddifferentbondmechanism.
- ✓ Tounderstandevolutionofphononanditsimportanceinelectricaland thermalproperties
- ✓ TounderstandF.E.M.andNFEM.
- ✓ Tounderstanddifferentclassofsolids.

Sub.Code:PHY-C204 QUANTUMMECHANICS-II

CourseOutcomes:

- ✓ To learn the properties of molecules and atoms and their constituents—electrons,protons, neutrons, and other moreesoteric particles such as quarksandgluons.

SubCode:PHY- P205 Optics(Laboratorywork)

CourseOutcomes: Toapplytheprincipleofopticsinexperiments.

CourseNo.PHY-VAC206A Materials Characterization

Course Outcome: The course aims to give the theory and hands-on-training of theinstruments facilities available at Berhampur University. This will help the students tounderstandthespectroscopictechniquesrequiredforcharacterizationofmaterialssynthesizedin laboratory.

Sub Code: PHY-VAC206B DFTandMaterials Modelling

CourseOutcomes:

1. Tounderstandasingle atomanditsbehaviourindependently.
2. Tounderstandevolutionofdifferentpropertiesdependentondensityfunctional.
3. To understand different approximations leading to better exchangecorrelation.
4. Tounderstandimplementationof DFTonQuantum Expressoandcodes

Toevaluatenumericallydifferentphysicalproperties.

SubCode:PHY-C301 RelativisticQuantumMechanics&Field theory

CourseOutcomes:

- ✓ Tostudytheeffectofrelativityonquantummechanicsandtodevelopthe formulationforRelativisticsystems along with thequantizationprinciple.
- ✓ Tointroducebasicconceptof Quantumfieldtheorytounderstandthedynamicsof relativisticsystemsthroughcreationandannihilationoperators

Sub Code: PHY-C302 Electronics

CourseOutcomes:

- ✓ Tomake thestudent familiarwith basicanalogganddigital electroniccomponents.
- ✓ UnderstandD.C.analysisandA.C.modelsofsemiconductordevices
- ✓ Applyconcepts for thedesign ofAmplifier
- ✓ Understand number representation and conversion between differentrepresentationsin digital electroniccircuits
- ✓ Analyze logic processes and implement logical operations using combinational logiccircuits.

Sub Code: PHY-C303A CondensedMatterandMaterialPhysics

CourseOutcomes:

- ✓ Toprovidean introductiontothephysicsofcondensedMatters
- ✓ To make them acquainted with the areas like quantization of lattice vibrations,electron–electroninteraction,superconductivityandAdvancedSuperconductivity.

SubCode:PHY-E303B NuclearScience-I

CourseOutcomes:

- ✓ Tounderstandthe advanceof NuclearPhysics

SubCode:PHY- P306 Modern Physics(Laboratorywork)

Courseoutcomes:

TodesignandanalyzeexperimentsinModernPhysics

SubCode:PHY-E301 FiberOpticsandOptoelectronics

Courseoutcomes:

- ✓ Theobjective ofthiscourseistofamiliarize studentsthe roleoffiber opticsindaytodayapplications.
- ✓ Toprovidebasicknowledgefordesigningsimple experimentusing L.E.D.,FiberandDetector

SubCode:PHY-VAC305A AtomicandMolecularSpectra

Courseoutcomes:

- ✓ Tounderstanddifferentatomicmodelsandtheirdevelopments
- ✓ Tolearnbehaviorof atomandmoleculesinthepresenceofelectricandmagneticfieldand molecular vibration.
- ✓ Tounderstandatomicandmolecularspectra

SubCode:PHY-VAC305B ASTRONOMYAND ASTROPHYSICS

Courseoutcomes:

1. **Tounderstand ToolsofAstronomyandcelestialmechanics**
2. **Tointroducebasicastronomicalprinciplesinthestudyoftheplanets,starsandgalaxies.**

SubCode:PHY-VAC305C OPTICALFIBRESENSOR

Courseoutcomes:

1. Identify different types of optical sensors and their performance characteristics - Analyze agivensensingrequirementanddesignanappropriatesensor-Realizeandimplementanoptimalsensing solutionforagiven requirement

Sub Code: PHY-E401A ElementaryParticlePhysics

CourseOutcomes:

- ✓ Themain goalofparticlephysicsis tolearn aboutthe universearoundus.
- ✓ Overthepast half century, particle physicists haveformulated theStandard Model,a beautifulframeworkthatexplainsthevisible universefromthesmallestto thelargestscales.

Sub Code: PHY-E401 B GeneralTheoryofRelativity(G.T.R.)

Courseoutcomes:

- ✓ Tolearnabouttheadvances inGeneralTheoryofRelativity.
- ✓ It will give the basic knowledge of Gravity as a geometry of space-time, gravitationalwavesand theformationof astrophysicalobjects**.**

Sub Code: PHY-C402 BasicNuclearPhysics

CourseOutcomes:

- ✓ Tounderstandthebasic propertiesofNucleusandNuclearmatter**.**
- ✓ Tolearnandunderstand aboutDeuteron,Scattering,NuclearenergyandNuclearModel.
- ✓ TounderstandtheapplicationofQuantummechanicsinNuclearphysics anditscorrelationwith Atomic and Particle Physics

Sub Code: PHY-E403 ProjectandSeminar

Courseoutcomes:

- ✓ Themainobjectiveofthis courseis towork inaminiproject ,learn abouthowtopreparearesearchreport and present beforeanaudience.

Sub Code: PHY-E404ACondensedMatterandMaterialsPhysics

Objectives:

Themainobjective ofthiscourse istolearnaboutopticalandmagnetic propertiesofmaterialsand theirresponseto internaland externalstimuli

Sub Code: PHY-E404BNuclearScience-2(FieldTheoryandParticlePhysics)

Courseoutcomes:

- ✓ Tolearnthefieldtheoretictechniquesasapplicabletotheinteractingelementaryparticlesandto be conversant withthe currentstatus ofparticlephysics.
- ✓ Tolearnthefundamentalconceptofspontaneousbreakingonthebasisof weakinteractionalong with decay widthcalculation.

Sub Code: PHY-E405A CONDENSEDMATTER&MATERIALSPHYSICS

(Laboratorywork)

Courseoutcomes:

Todesignandanalyze principles inCondensed Matterand MaterialsPhysics.

Sub Code: PHY-P405B NuclearScience(Laboratorywork)

Courseoutcomes:

- ✓ TodesignandanalyzeexperimentsinNuclearScience

SubCode:-VAC406 CulturalHeritageof SouthOdisha

Courseoutcomes:

- ✓ The teaching imparted to P.G students of Berhampur university on the variousdimensionsoftheliteraryandculturalheritageof SouthOdishawillhelpthemtoacquirethe valuableunderstanding of thesame.
- ✓ They will be inspired adequately to takethe positivelearnt from the course and usethem in future in their personal literary and cultural pursuits and their by promote theliteratureandcultureof theodishaon aGlobal Scale

M.A POLITICAL SCIENCE
Course Structure (2022-23)

Semester-I						
Paper Code	**Paper**	**Credits**	**Core/Elective**	**Int. Marks**	**Ext Mark**	**Mark**
PSC C 101	Political Theory	4	Core	20	80	100
PSC C 102	Indian Government and Politics	4	Core	20	80	100
PSC C 103	Theories of International Relation	4	Core	20	80	100
PSC C 104	Public Administration	4	Core	20	80	100
PSC C 105	Western Political Thought-I	4	Core	20	80	100
		20				**50**
Semester-II						
Paper Code	**Paper**	**Credits**	**Core/Elective**	**Int. Marks**	**Ext Mark**	**Mark**
PSC C 201	Political Sociology	4	Core	20	80	100
PSC C 202	Comparative Political Analysis	4	Core	20	80	100
PSC C 203	Contemporary Issues in International Relations	4	Core	20	80	100
PSC C 204	Administrative Theory	4	Core	20	80	100
PSC C 205	Western Political Thought-II	4	Core	20	80	100
PSC VAC-206	Human Right in India: Concept and Practice	--	Non-Credit	20		Grade
	Total	**20**	**20**			**500**
Semester-III						
Paper Code	**Paper**	**Credits**	**Core/Elective**	**Int. Marks**	**Ext Mark**	**Mark**
PSC E-301(A)	Indian Political Thought	4	Elective	20	80	100
PSC E-301(B)	Political Processes in India	4	Elective	20	80	100
PSC E-302(A)	Indian's Foreign Policy	4	Elective	20	80	100
PSC E-302(B)	International Relations Of South Asia	4	Elective	20	80	100
PSC E-303(A)	Public Policy and Governance	4	Elective	20	80	100
PSC E-303(B)	Social Exclusion and Inclusive Policy	4	Elective	20	80	100
PSC E-304(A)	Political Ideologies	4	Elective	20	80	100
PSC E-304(B)	Critical Traditions in Political Theory	4	Elective	20	80	100
PSC CT-300	Indian Political System(CBCT)	4	CBCT	20	80	100
PSC VAC-305	Feminism: Theories and Practices	--	Non-Credit	--	--	Grade
		20	--	100	400	500
Semester-IV						
Paper Code	**Paper**	**Credits**	**Core/Elective**	**Int. Marks**	**Ext Mark**	**Mark**
PSC E 401(A)	New Social and Political Movements in India	4	Elective	20	80	100
PSC E-401(B)	Local Government and Politics in India	4	Elective	20	80	100
PSC E-402(A)	Foreign Policy of Major Powers	4	Elective	20	80	100
PSC E-402(B)	India and Regional Organizations		Elective	20	80	100

PSC E-403(A)	State Politics in Odisha	4	Elective	20	80	100
PSC E-403(B)	Political Economy and Development Administration in Odisha	4	Elective	20	80	100
PSC C-404	Research Methodology	4	Core	20	80	100
PSC C-405	Dissertation and Viva-Voice	4	Core	20	80	100
PSC406AC	Cultural Heritage of South Odisha	--	Non-Credit	--	--	Grade
				100	400	500
rand Total		--	--	400	1600	2000

POLITICAL SCIENCE

PROGRAAMMEE OUTCOME: M.A. in Political Science is a two years regular course. It follows an interdisciplinary approach to the study politics as it draws concepts and ideas from other disciplines like history, sociology, psychology, economics, anthropology and biology. Thus, the purpose of this course is to help the students to have an understanding of various interdisciplinary concepts, theories, ideological discourses, perspectives, political behavior, policy issues, and structures of government within societies and among nations. It equips students with the knowledge of different political systems and institutions in the world and to make them aware of different administrative principles and the paradigm shift in Public Administration. The study of political values, ideas and philosophy enshrined in the constitution of India will help them develop their political orientation which in turn will make them an active, obedient and responsive citizen. Students will also be made conscious of the social, cultural, economic and political environment that affects politics in India, at both national as well as regional level. Students will be equipped with the fundamental understanding of political philosophy as theorised by different thinkers. Students will be able to understand what power is, its different dimensions as well as its location in social and political context, know various issues of international and domestic politics; analyze political and policy problems; demonstrate critical thinking including the ability to form an argument, to detect fallacies; deliver thoughtful and well articulated presentations of research findings. This course also makes the students aware on various aspects of teaching, learning, research and plagiarism. In its broader perspective this course emphasises on contemporary issues and problems to make the subject more socially relevant and very near to the realities of public life.

SEMESTER –I

PSC C 101: POLITICAL THEORY

PSC C 102: INDIAN GOVERNMENT AND POLITICS

PSC C- 103: THEORY OF INTERNATIONAL RELATIONS

Course Outcome

By the end of this course Students are able to:

i. Conceptualize various perspectives to international relations.

ii. Appreciate various philosophies relating to international relations and conceptualize various foundational theories in International Relations.

iii. Analyze dynamics of contemporary and alternative theories relating to International Relations.

PSC C -104: PUBLIC ADMINISTRATION

Course Outcome

By the end of the course students will have a conceptual clarity on

- The essence of Public Administration
- The Historical context of Public administration
- The recent developments particularly the emergence of New Public Administration

PSC C- 105: WESTERN POLITICAL THOUGHT-I

Course Outcome

By the end of the course students will have a conceptual clarity on Historical and philosophical perspectives to understand the universality of the enterprise of political theorizing. The legacy of the thinkers with the view to establish the continuity and change within the Western political tradition.

Semester-II

PSC C 201: POLITICAL SOCIOLOGY

Course Outcome

On completion of this course, students are expected to have acquired a familiarity with major features of contemporary societies that are relevant to politics. Acquire an understanding of recent social and political science explanations of political processes and events. Acquire, more generally, a grasp of the competing approaches in the field Comprehend different opportunities to influence political decisions by average citizens.

PSC C -202: COMPARATIVE POLITICAL ANALYSIS

Course Outcome

By the end of this course Students will able to know:

- the diversity of key aspects of political systems around the world and how they affect important outcomes
- differences across countries such as social movements, political culture, political parties, party systems, regimes, states and policy-making processes
- The meaning of fundamental concepts in comparative political analysis, including: the state, nations and society, regimes, markets, development, multi-level governance.
- The meaning of fundamental institutions of democratic regimes: Constitutionalism, legislatures and the executive and Political systems, elections, interest groups.

PSC C-203: CONTEMPORARY ISSUES IN INTERNATIONAL RELATIONS

Course Outcome

By the end of this course Students are able to:

1. Know about the various theatres of international conflicts and the role of major powers in them.
2. Appreciate various aspects of global politics following the end of the Cold war and acquaint themselves with global issues of recent times.
3. Develop an understanding about the changing role of the UN and the reason behind the strengthening of regional international organisations.

PSC C- 204: ADMINISTRATIVE THEORY

Course Outcome

By the end of the course students will have a conceptual clarity on: Broad intellectual traditions in administration that has decisively shaped the contours of Administrative system as we understand it today. Continuity and change in the different ideological standpoints and the need to the continuing relevance of these concepts today.

PSC C-205: WESTERN POLITICAL THOUGHT-II

Course Outcome

By the end of the course students will have a conceptual clarity on Nature and significance of western political thought Continuing significance of the study of the classics and indicates its shortcomings by underlining the need to incorporate new perspectives that have arisen in recent past.

***PSC VAC-206: HUMAN RIGHTS IN INDIA: CONCEPT AND PRACTICE (Non-Credit)**

Course Outcome

The programme enables students to take an analytic and critical stance and deal with questions of how human rights affect social and political processes. At the end of the programme you will be able to

- search for, identify and assess primary sources as well scholarly literature about human rights
- identify, contextualise and use information about the human rights situation in a given country,
- critically appraise source material, including cases from human rights committees and tribunals and reports and summary records from treaty bodies
- analyse a country‘s situation or an international situation in terms of human rights and formulate human rights-based initiatives and policies
- promote human rights through legal as well as non-legal means
- participate in legal, political and other debates involving human rights in a knowledgeable and constructive way

Semester-III

PSC E-301 (A): INDIAN POLITICAL THOUGHT

Course Outcome

By the end of the course students will have a conceptual clarity on Indian philosophical systems of thought on social and political ideas. The political ideas of various political and social leaders and thinkers of India.

PSC E -301 (B): POLITICAL PROCESSES IN INDIA (Core elective-Optional)

Course Outcome

By the end of the course students will have a conceptual clarity on The political processes and the actual functioning of the political system. The major contradictions of the Indian political process along with an assessment of its relative success and failures

PSC E-302 (A): INDIA'S FOREIGN POLICY (Elective)

Course Outcome

On completion of this course, students are expected to Understand the basic features of Indian foreign policy that have evolved over seven decades of nationhood. Understand processes of policy making and appreciate the complexities involved in it. Appreciate the role of various Prime Ministers in the foreign policy making. Know the challenges that India faces in its neighbourhood and the reasons behind the policy stances. Gain an understanding of the history and current India's policy with regards to our relations with important world players and regional powers. Understand India's stand on Nuclear Weapons and the restructuring of the UN.

PSC E 303 (A): PUBLIC POLICY AND GOVERNANCE (Elective)

Course Outcome

By the end of the course students will have a conceptual clarity on

- The philosophical basis of the ideologies with special emphasis on key thinkers and their theoretical formulations.
- The legacy of all the major ideologies.

PSC E-303 (B): SOCIAL EXCLUSION AND INCLUSIVE POLICY (Elective)

Course Outcome

1. The course provides an insight into the historical background of the concept social exclusion
2. The students will see how the concept is related to various theoretical concepts of inequality, poverty and discrimination
3. It discusses different modes of social exclusion with case studies from India and elsewhere
4. It discusses case studies relating to social exclusion with a specific focus on poverty, discrimination, deprivation and inequality

PSC CE-304 (A): POLITICAL IDEOLOGIES (Elective)

Course Outcome

By the end of the course students will have a conceptual clarity on The philosophical basis of the ideologies with special emphasis on key thinkers and their theoretical formulations. The legacy of all the major ideologies.

PSC E-304 (B) CRITICAL TRADITIONS IN POLITICAL THEORY (Elective)

Course Outcome

By the end of the course students will have a conceptual clarity on-

- Necessary and mainstream bedrock of political theory, ancient and modern,
- The primary challenges to mainstream liberal theory.

PSC CT-300: INDIAN POLITICAL SYSTEM (CBCT)

Course Outcome

By the end of the course students will have a conceptual clarity on

- The key institutions and processes of governance in India.
- Historical legacies and foundations of Indian state and democracy with reference to the making of the Indian Constitution.

***PSC-VAC 305: FEMINISM: THEORIES AND PRACTICES**

Course Outcome

After reading this course the students will

- Identify major trends and theorists in Women‘s and Gender Studies
- Become familiar with key concepts in feminist theories and the debates associated with them.
- Become familiar with significant writings in feminist theories both in India and elsewhere
- Learn how to identify arguments from key texts, present them orally and in writing through assessments.

Semester –IV

Course Outcome

PSC E 401-(A) NEW SOCIAL AND POLITICAL MOVEMENTS IN INDIA (Elective)

After reading this course the students will:

- Know the importance of a study of social movements in understanding politics.
- Know the difference between riot and social movement.
- Know the common elements of different definitions of social movement.
- Know the main components of social movements.
- Know the difference between _social‘ and _political‘ movements.

PSC E 401(B) LOCAL GOVERNMENT AND POLITICS IN INDIA (Core elective-Optional)

Course Outcome

After reading thus paper the students will able

- To know the objective and to help them to take voluntary interest in the elections of these institutions.
- To know the local politics, policy, administration and public management by the local institutions viz., Panchayati Raj and Urban Governments.

PSC CE—402 (A): FOREIGN POLICY OF MAJOR POWERS (Elective)

Course Outcome

By the end of this course Students will able to know:

i. The factors and mechanisms that guide foreign policy objectives of the major powers.

ii. Understand the nature and orientation of Foreign Policy from the Cold war days and its evolution through the Post-Cold War world order to today.
iii. The various challenges these powers posed before the world countries and what others must learn from them.

PSC E-402(B): INDIA AND REGIONAL ORGANISATIONS (Core elective-Optional)

Course Outcome

This course will enable students to:
 Develop an in-depth examination of the issues and problems associated with increasing world interdependence.
 Develop theoretical orientation to understand the causes of problems and possible solutions within international security architecture.
 To comprehend major issues of global concern and international responses hitherto.

PSC E 403 (A): GOVERNMENT & POLITICS IN ODISHA (Elective)

Course Outcome

By the end of the course students will have a conceptual clarity on Political culture, institutional governance and variation in Internal Political Pattern within the state of Odisha. The political history of the state of Odisha.

PSC E 403(B): POLITICAL ECONOMY AND DEVELOPMENT ADMINISTRATION IN ODISHA (Elective)

Course Outcome

to provide students with basic conceptual tools and frameworks for analyzing economic development issues; to give students a basic understanding of the economic development process in several regions of the world, and to give students a chance to practice academic debate on complex economic issues. The evaluation of the course will be based on two exams, a group project, homework assignments, and class participation. What do we mean by saying that economic outcomes are shaped by political constraints or politics? Do individuals behave the same or differently in economic models and political models? What are the fundamental questions in studying political economy?

PSC C-404: RESEARCH METHODOLOGY

Course Outcome

After end of their M.A programme the students will be:
 Familiar with the basic concepts of research methodology.
 Acquainted with the basics of research methods, techniques and approaches of research.
 Identify the research problem and formulate research questions and hypothesis.
 The process of writing various academic and popular writings.
 Fundamentals of research ethics.

PSC C-405: PROJECT WORK (REPORT IN FORM OF DISSERTATION & VIVA)

Course Outcome

 Identify an area of interest, able to explore the research area and use the appropriate research tools.

 It will enhance the critical analytical and research skills of a student. On successful completion of the course students will be able to:

 Demonstrate a sound technical knowledge of their selected project topic.

 Undertake problem identification, formulation and solution.

 Demonstrate the knowledge, skills and attitudes of a professional researcher.

PSC AC: CULTURAL HERITAGE OF SOUTH ODISHA

The teaching imparted to the P.G. students of Berhampur University on the various dimensions of the literary and cultural heritage of South Odisha will help them to acquire a valuable understanding of the same. They will be inspired adequately to take the positives learnt from the course and use them in future in their personal literary and cultural pursuits and thereby promote the literature and culture of Odisha on a global scale.

M.Sc. Zoology General Course Framework &Structure S.No	**Paper No**	**Title**	**Credits**	**Proposed Marks**
SEMESTER ONE				
1	**ZOOL C 101**	**Biology of Non-Chordates**	**04**	**100**
2	**ZOOL C 102**	**Cytology and Inheritance Biology**	**04**	**100**
3	**ZOOL C 103**	**Biosystematics, Conservation Biology, Evolution and Ecology**	**04**	**100**
4	**ZOOL C 104**	**Biochemistry**	**04**	**100**
5	**ZOOL P 105**	**Laboratory Course Work-I**	**06**	**100**
TOTAL	**22**		**500**	
SEMESTER TWO				
1	**ZOOL C 201**	**Biology of Chordates**	**04**	**100**
2	**ZOOL C 202**	**Molecular Biology**	**04**	**100**
3	**ZOOL C 203**	**Physiology, Endocrinology and Histology**	**04**	**100**
4	**ZOOL C 204**	**Ethology, Applied Ecology and Microbiology**	**04**	**100**
5	**ZOOL P 205**	**Laboratory Course Work-II**	**06**	**100**
6	**ZOOL VAC 206**	Bioinformatics, Biosafety and Bioethics	**NC**	**NC**
TOTAL	**22**		**500**	
SEMESTER THREE				
1	**ZOOL C 301**	**Immunology and Histochemistry**	**04**	**100**
2	**ZOOL E 302**	**Entomology**	**04**	**100**
3	**ZOOL E 303**	**Bioinstrumentation**	**04**	**100**

		and Biostatistics		
4	**ZOOL P 305**	**Laboratory Course Work-III**	**06**	**100**
5	**ZOOL CT 300**	**Conservation Biology ***	**04**	**100**
6	**ZOOL VAC 306**	**Human Nutrition**	**NC**	**NC**
TOTAL	**22**		**500**	
SEMESTER FOUR				
1	**ZOOL C 401**	**Cytogenetics and Stress Physiology**	**04**	**100**
2	**ZOOL E 402**	**Epigenetics and Cancer Biology**	**04**	**100**
3	**ZOOL E 403**	**Applied Biology**	**04**	**100**
4	**ZOOL E 404**	**Developmental Biology and Radiation Biology**	**04**	**100**
5	**ZOOL D 405**	**Project, Dissertation and Viva-Voce**	**06**	**100**
6	**ZOOL AC 406**	**Cultural Heritage of South Odisha**	**NC**	**50**
TOTAL	**22**		**500**	
TOTALCREDITS				

ZOOLOGY

ZOOL C 101 Biology of Non-Chordates

CourseOutcomes: Students after completion of this course are expected to know about the non-chordate diversity, evolutionary relationship, and some basic aspects parasitism.

ZOOL C 102 Cytology and Inheritance Biology

CourseOutcomes: Students after completion of this course are expected to know different cellular organelles and their functions, cell cycle regulations, basic inheritance pattern and basic gene mapping techniques.

ZOOL C 103 Biosystematics, Conservation Biology, Evolution, and Ecology

CourseOutcomes: Students after completion of this course are expected to get a holistic understanding of taxonomy, inculcate the value of natural environment and develop compassion toward bio-resources. Students are also expected to know the principle of evolutionary process and its application.

ZOOL C 104 Biochemistry

CourseOutcomes: Students after completion of this course are expected to know different bio-molecules, their biological functions and role of enzymes in cellular metabolism

ZOOL P 105 Laboratory Course Work-I

CourseOutcomes: Students will be able to know about collection, preservation, identification and drawing phylogenetic tree of organisms.

ZOOL C 201 Biology of Chordates

CourseOutcomes: Students after completion of this course are expected to know the chordate diversity and some of the important features with respect to their evolutionary relationship.

ZOOL C 202 Molecular Biology

CourseOutcomes: Students after attending the course will understand role of bio-molecule involved in control and expression of genetic information and gene regulation at the level of transcription and translation in a better way.

ZOOL C 203 Physiology, Endocrinology and Histology

CourseOutcomes: Students after completion of this course are expected to learn basic histological features of important organ, the role of physiological processes and hormones involved in maintaining homeostasis.

ZOOL C 204 Ethology, Applied Ecology, and Microbiology

CourseOutcomes: Students after completion of this course are expected to learn social organisation and their impotence in animals, pollution and its causative agents, bacterial and viral diversity, their genetics and their implication.

ZOOL P 205 Laboratory Course Work-II

CourseOutcomes: On completion of this course, students are expected to learn collection, preservation, identification of vertebrates, blood physiology, histological details of important organs, experience animal behavior, physicochemical analysis of water and soil, media preparation for microbial growth and basic staining methods.

ZOOL VAC 206 Bioinformatics, Biosafety and Bioethics

CourseOutcomes: Student should be able to develop an understanding of basic theory of these computational tools; to gain working knowledge of these computational tools and methods; appreciate their relevance for investigating specific contemporary biological questions and to critically analyse and interpret results of their study. Students should be able to appreciate relevance of microorganisms from industrial context; to carry out stoichiometric calculations and specify models of their growth; to give an account of design and operations of various fermenters; to calculate yield and production rates in a biological production process, and also interpret data etc.

ZOOL C 301 Immunology and Histochemistry

CourseOutcomes: Students after completion of this course are expected to know in details about human immune system and mechanism of immunity. The histochemical technique shall help the students in development of their research skills.

ZOOL E 302 Entomology

CourseOutcomes: After the completion of the course the students will be acquainted with the different vectors, their characteristics and process of transmission and infection. The students will also learn about the management techniques of different vectors. Further, the students will also be acquainted with the different means of insect-pest management. They will also learn about the different application techniques of insecticides, and its management.

ZOOL E 303 Bioinstrumentation and Biostatistics

CourseOutcomes: Students after completion of this course are expected to handle and operate basic instruments fortheir experimental purposes. The students also have clear understanding of data and its analysis that will help them in persuing higher studies.

ZOOL P 305 Laboratory course work-III

CourseOutcomes: Students are expected to learn instrumentation and their operation, stastical analysis of data, identification of various stages of chick embryo and blood grouping

ZOOL CT 300 Conservation Biology*

CourseOutcomes: Students after completion of this course are expected to get a holistic understanding on biodiversity and its importance, phylogeny, inculcate the value of bio-resources and develop compassion toward bio-resources.

ZOOL VAC 306 Human Nutrition

Course Outcomes: Students, after completion of this course, are expected to know about different essential nutrients, their role in human health and abnormalities associated with their deficiencies.

ZOOL C 401 Cytogenetics, Stress Physiology and Metabolic disorders

CourseOutcomes: Students are expected to learn differences aspects of genomic analysis, meiotic abnormalities, different sex linked diseases and in situ techniques. Also, the course will help students in understanding the physiology of stress and various metabolic disorders.

ZOOL E 402 Epigenetics and Cancer Biology

CourseOutcomes: The students are expected to learn epigenetic related disorders and their consequences, differences aspects of cell transformation from normal to cancer cells, different proteins and genes involved in different types of cancers, and treatment

ZOOL E 403 Applied Biology

CourseOutcomes: Students after reading this course are expected to have knowledge orient towards industrial microbiology for selfentrepreneurship development and application of nano-science in biological research. Further, it will enhance the students ability in various ecotechnological enterprenuership skills and advance molecular tools techniques.

ZOOL E 404 Developmental Biology and Radiation Biology

CourseOutcomes: Students are expected to lean the basic principle and process of developmental biology and Radiation Biology and able to make themselves aware to deleterious effects radiation too

ZOOL D 405 Project, Dissertation and Viva-Voce

CourseOutcomes: Students are expected to gain the basic skill in project handling and writing of their project report.

ZOOL AC 406 Cultural Heritageof South Odisha

CourseOutcomes: The teaching imparted to the P.G. students of Berhampur University on the various dimensions of the literary and cultural heritage of South Odisha will help them to acquire a valuable understanding of the same. They will be inspiredadequately to take the positives learnt from the course and use them in future in their personal literary and cultural pursuits and thereby promote the literature and culture of Odisha on a global scale.