RESTRUCTURED CURRICULUM AND SYLLABI FOR THE B.COM DEGREE PROGRAMME (MODEL I) UNDER THE CHOICE BASED CREDIT AND SEMESTER SYSTEM

MAHATMA GANDHI UNIVERSITY
PRIYADARSHINI HILLS P O KOTTAYAM, KERALA

2017

(Effective from 2017-18 admissions)

B.Com Degree Programme Model-I Course Structure

Semester-wise details

Semester- 1

Sl No	Course Code	Course Name	Credit	Hours per week
1		Language- English-I	4	5
2		Second Language-I	4	4
3	CO1CRT01	Dimensions and Methodology of Business Studies	2	3
4	CO1CRT02	Financial Accounting I	4	5
5	CO1CRT03	Corporate Regulations and Administration	3	4
6	CO1CMT01	Banking and Insurance	3	4
		TOTAL	20	25

Semester- 2

Sl No	Course Code	Course Name	Credit	Hours per week
1		Language- English-I	4	5
2		Second Language-I	4	4
3	CO2CRT04	Financial Accounting II	4	5
4	CO2CRT05	Business Regulatory Framework	3	4
5	CO2CRT06	Business Management	3	3
6	CO2CMT02	Principles of Business Decisions	3	4
		TOTAL	21	25

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Semester 3

Sl No	Course Code	Course Name	Credit	Hours per week
1		Language- English-I	3	3
2	CO3CRT07	Corporate Accounts I	**4**	**5**
3	CO3CRT08	Quantitative Techniques for Business- 1	**4**	**5**
4	CO3CRT09	Financial Markets and Operations	**3**	**4**
5	CO3CRT10	Marketing Management	**3**	**3**
6		Optional - 1		
	CO3OCT01	Finance and Taxation-Goods and Services Tax	**4**	**5**
	CO3OCT02	Computer Application- Information Technology for Business (Theory)	**3**	**3**
		Information Technology for Business (Practical)- ***Exam in semester 4 only***	**-**	**2**
	CO3OCT03	Co-operation- Basics of Co-operation	**4**	**5**
	CO3OCT04	Travel and Tourism - Fundamentals of Tourism	**4**	**5**
	CO3OCT05	Marketing- Customer Relationship Management	**4**	**5**
		TOTAL for streams other than Computer Applications	**21**	**25**
		TOTAL for Computer Application Stream	**20**	**25**

Semester- 4

Sl No	Course Code	Course Name	Credit	Hours per week
1		Language- English-I	3	3
2	CO4CRT11	Corporate Accounts II	**4**	**6**
3	CO4CRT12	Quantitative Techniques for Business- II	**4**	**6**
4	CO4CRT13	Entrepreneurship Development and Project Management	**4**	**5**
5	CO4	Optional - 2 -	**4**	**5**
	CO4OCT01	Finance and Taxation- Financial Services	**4**	**5**
	CO4OCT02	Computer Application- Information Technology for Office (Theory)	**3**	**3**
		Information Technology for Office (Practical)	**-**	**2**
	CO34OCP01	***Computer Application Practical Examination*** for Information Technology for Office and Information technology for Business	**2**	**NA**
	CO4OCT03	Co-operation- Management of Co-operative Enterprises	**4**	**5**
	CO4OCT04	Travel and Tourism- Travel and Tourism Infrastructure	**4**	**5**
	CO4OCT05	Marketing- Services Marketing	**4**	**5**
		TOTAL for streams other than Computer Application	**19**	**25**
		TOTAL for Computer Application Stream	**20**	**25**

Semester- 5

Sl No	Course Code	Course Name	Credit	Hours per week
1	CO5CRT14	Cost Accounting - 1	4	6
2	CO5CRT15	Environment Management and Human Rights	4	5
3	CO5CRT16	Financial Management	4	5
4		Optional - 3		
	CO5OCT01	Finance and Taxation- Income Tax- I	4	5
	CO5OCT02	Computer Application-	3	3
		Computerised Accounting(Theory)		
		Computerised Accounting (Practical)- **Examination in 6th Semester only**	-	2
	CO5OCT03	Co-operation- Co-operative Legal System	4	5
	CO5OCT04	Travel and Tourism- Hospitality Management	4	5
	CO5OCT05	Marketing- Marketing Research	4	5
5		Open Course	3	4
		TOTAL for streams other than Computer Application	**19**	**25**
		TOTAL for Computer Application stream	**18**	**25**

Semester- 6

Sl No	Course Code	Course Name	Credit	Hours per week
1	CO6CRT17	Cost Accounting - 2	4	6
2	CO6CRT18	Advertisement and Sales Management	3	4
3	CO6CRT19	Auditing and Assurance	4	5

4	CO6CRT20	Management Accounting	**4**	**5**
5	CO6OCT	Optional - 4	**4**	**5**
	CO6OCT01	Finance and Taxation- Income Tax- II	**4**	**5**
	CO6OCT02	Computer Application- Software for Business and Research (Theory)	**3**	**3**
		Software for Business and Research(Practical)	**-**	**2**
	CO56OCP01	**Computer Application-** Practical Examination – Computerised Accounting and Software for Business and Research	**2**	**NA**
	CO6OCT03	Co-operation- Accounting for Co-operative Societies	**4**	**5**
	CO6OCT04	Travel and Tourism- Tourism and Cultural Heritage of India	**4**	**5**
	CO6OCT05	Marketing- International Marketing	**4**	**5**
6	**CO6PR01**	**Project and Viva**	**1**	**-**
		TOTAL for streams other than Computer Application	**20**	**25**
		TOTAL for Computer Application	**21**	**25**

		Stream		

SEMESTER 1

Core Course -1: DIMENSIONS AND METHODOLOGY OF BUSINESS STUDIES

Instructional Hours: 54 **Credit: 2**

Objectives

- *To understand business and its role in society*
- *To have an understanding of Business ethics and CSR*
- *To comprehend the business environment and various dimensions*
- *To familiarise Technology integration in business*
- *To introduce the importance and fundamentals of business research*

Module 1

Business and Environment Business- Functions - Scope - Significance of business - Objectives of business - Business and development - Forms of business organisations- Stake holders of business- Business Environment – Definition - Features- Importance - Components of business environment-

Internal environment and external environment - Micro environment and macro environment- Global business environment **(10 Hours)**

Module 2

Business in India- Stages and developments of business in the Indian economy since independence - Role of public, private, co-operative sectors - Liberalisation, Privatisation and Globalization – Disinvestment – Outsourcing –Recent economic initiatives - Niti Ayog - Make in India initiative **(10 Hours)**

Module 3

Technology integration in business- E Commerce- Meaning- Functions - Operation of E-commerce - Types of E-Commerce -B2C-B2B-C2C- C2B- B2E- B2G- P2P- E-Commerce and E-Business – M-Commerce- Meaning- Advantages- Challenges – E-Payment systems (brief study) Debit/Credit card payment, Net banking, Digital wallet, e-cheque, e-cash – Payment gateway. **(14 Hours)**

Module 4

Business Ethics – Importance - Principles of business ethics - Factors influencing Business Ethics - Arguments in favour and against business ethics - Social responsibility of business – objectives and principles - Arguments in favour and against social responsibility. Corporate Governance – Meaning and importance – Objectives – Principles **(10 Hours)**

Module 5

Business Research – Research- Meaning and Definition- Importance of research- Quantitative and qualitative approach to research-Inductive and deductive reasoning- Major Types of Research (Pure-Applied - Exploratory- Descriptive- Empirical- Analytical) - Business Research- Elements of Business Research-Management Research- -Objectives- Research Methods vs Research Methodology -Research Process(brief outline only) –Research report **(10 Hours)**

Suggested Readings

1. **Keith Davis and William C.Frederick*: Business and Society Management, Public Policy, Ethics.***
2. Peter F. Drucker*: Management Tasks, Responsibilities, Practices.*
3. Peter F Drucker*: The Practice of Management.*
4. P.T.Joseph, S.J, *E-Commerce: An Indian Perspective , Prentice Hall of India*
5. Kamalesh K Bajaj and Debjani Nag: *E-Commerce, the Cutting Edge of Business:, Tata McGraw Hill.*
6. Schneider: *E-Commerce:, Thomson Publication*
7. CSV Murthy*, Business Ethics, Himalaya Publishing House, Mumbai*
8. C R Kothari *Research Methodology, New Age Publishers*
9. O R Krishnaswamy: *Research Methodology- Himalaya Publications*
10. N V Badi and R.V. Badi: *Business Ethics: Vrinda Publications*
11. Cherunilam, Fransis, Business environment, *Himalaya Publishing House, Mumbai.*
12. Fernando, A, C,. Business Environment, *Pearson, New Delhi*
13. Francis, Ronald & Mishra, Muktha, Business Ethics: An Indian Perspective, *Tata McGraw Hill Pvt Ltd, New Delhi*
14. Sharma, J.P., Corporate Governance, Business Ethics, and CSR, *Ane Books Pvt Ltd, New Delhi.*
15. *Ghosh, B.N., Business Ethics and Corporate Governance, Tata McGraw Hill Pvt Ltd, Delhi.*

Core Course -2: FINANCIAL ACCOUNTING– I

Instructional Hours: 90 **Credit: 4**

Objective: *To equip the students with the skill of preparing accounts and financial statements of various types of business units other than corporate undertakings*

Module – I

Preparation of Financial Statements –Conceptual framework- Accounting Principles - Accounting Concepts - Accounting Conventions- - Capital and Revenue Expenditure - Capital and Revenue Receipts - Capital and Revenue Losses - Deferred Revenue Expenditure–Accounting Standards- Objectives -Final Accounts of Sole Trader - Trading Account - Manufacturing Account - Profit and Loss Account - Balance Sheet - Adjusting entries - Closing Entries- Practical Problems with all Adjustments.

(26 Hours)

Module -II

Accounting of Incomplete Records - Single Entry System - Features - Advantages - Disadvantages - Distinction between Single Entry and Double Entry System- Ascertainment of Profit/loss - Statement of Affairs Method - Conversion Method - Steps for Conversion of Single Entry into Double Entry - Preparation of Trading and Profit and Loss Account and Balance Sheet.

(20 Hours)

Module - III

Royalty Accounts – Meaning – Minimum Rent – Short Working – Recovery– Journal Entries in the books of Lessor and Lessee – Preparation of Minimum Rent Account – Short Working Account – Royalty Account (Excluding Sublease)– Special Circumstances :Adjustment of Minimum Rent in the event of Strike and Lock - outs - Govt. Subsidy in case of Strikes/Lockouts

(18 Hours.)

Module - IV

Accounting for Consignment - Meaning – Important Terms – Journal Entries in the books of Consignor and Consignee – Preparation of Consignment Account – Consignee's Account – Goods Sent at Cost or Invoice Price Delcredre commission- Valuation of Stock – Normal and Abnormal Loss

(18 Hours)

Module – V

Farm Accounts- Meaning- Characteristics- Objectives and advantages- Recording of farm transactions- Preparation of farm account, crop account, dairy account, livestock account etc- Preparation of final accounts of farming activities- **(8 Hours)**

Suggested Readings

1. Jain, S.P., & Narang, K.L., Advanced Accountancy, *Kalyani Publishers*, *New Delhi*
2. Maheshwari, S.N., & Maheswari, S.K., Advanced Accountancy, *Vikas Publishing House*, *New Delhi.*
3. Shukla, M.C., & Grewal, T.S., Advanced Accountancy, *S Chand and Company (Pvt.) Ltd*, *New Delhi.*
4. Ashok, Sehgal, & Deepak Sehgal, Financial Accounting *Taxmann Allied Service (Pvt.) Ltd*, *New Delhi.*
5. MA Arulanandam and KS Raman, *Advanced Accountancy, Himalaya Publications, Mumbai.*
6. Paul, S. K., & Chandrani, Paul, Advanced Accountancy, *New Central Book Agency*, *New Delhi.*
7. Raman B S, *Financial Accounting- United Publishers*
8. The Chartered Accountant(Journal), Institute of Chartered Accountants of India, New Delhi.

SEMESTER 2

Core Course -4 FINANCIAL ACCOUNTING – II

Instructional Hours: 90 **Credit: 4**

Objective**:** *To acquaint the students with the preparation of books of accounts of various types of business activities and application of important accounting standards*

Module I

Accounting for Hire Purchase – Meaning and Features of Hire Purchase System – Hire purchase Agreement –Hire purchase and Sale - Hire Purchase and Installment – Interest Calculation – Recording Transactions in the Books of both the Parties – Default and Repossession- Complete repossession- Partial repossession- **(25 Hours)**

Module II

Branch Accounts – Objectives- Features – Types – Accounting for Branches keeping full system of accounting – Debtors System – Stock and Debtors System – Independent Branches and Incorporation of Branch Accounts in the Books of H.O – Cash in Transit and Goods in Transit – Consolidated Balance Sheet.(accounting for foreign branches excluded) **(20 Hours)**

Module III

Departmental Accounts – Meaning – Objectives – Advantages – Distinction between branch and department- Accounting Procedure – Allocation of Expenses and Income- Inter Departmental Transfers – Provision for Unrealized Profits. **(10 Hours)**

Module IV

Accounting for Dissolution of partnership firm- Dissolution of a firm- Settlement of Accounts on dissolution- - Insolvency of a partner-Application of decision of Garner Vs Murray Case - Settlement of accounts when all partners are insolvent- Piecemeal distribution- Highest Relative Capital Method- Maximum Possible Loss method **(25 Hours)**

Module V

Accounting Standards- Importance- Accounting Standards Board- Applicability of Accounting Standards – Brief learning of AS1, AS2, AS9, AS10 and AS 19(Theory only) **(10 Hours)**

Suggested Readings

1. Jain S.P & Narang K.L., Advanced Accountancy, *Kalyani Publishers*, *New Delhi*
2. Maheshwari, S.N., & Maheswari, S.K., Advanced Accountancy, *Vikas Publishing House*, *New Delhi.*
3. Shukla, M.C., & Grewal, T.S., Advanced Accountancy, *S Chand and Company Pvt.Ltd*, *New Delhi.*
4. Ashok Sehgal & Deepak Sehgal, Financial Accounting *Taxmann Allied Service (Pvt) Ltd*, *New Delhi.*
5. Paul, S. K., & Chandrani Paul, Advanced Accountancy, *New Central Book Agency*, *New Delhi.*
6. MA Arulanandam and KS Raman*, Advanced Accountancy,Himalaya Publications, Mumbai.*
7. Raman B S*, Financial Accounting United Publishers*
8. The Chartered Accountant (Journal), Institute of Chartered Accountants of India, New Delhi.

SEMESTER 3

Core Course 10: MARKETING MANAGEMENT

Instructional Hours:54 **Credit: 3**

Objective: *The objective of this course is to provide a sound understanding of the basic principles of marketing management and their applications in the business and industry.*

Module I

Marketing Management–Market and Marketing- Meaning- Definition of marketing- Marketing Concepts – Marketing environment- Functions of marketing-Marketing Management- Marketing Mix- 4Ps and 4Cs- Importance of marketing mix- Factors affecting marketing mix- Market Segmentation – Concept – Need – Basis-benefits- Market Targeting- Market Positioning- differentiated and undifferentiated marketing **(12 Hours)**

Module II

Product Mix- Product – Meaning- Classification of products- -Product Line and Product Mix-New Product development- Steps- Reasons for failure of new products- - Product Life Cycle- – Branding- Types of brand- Brand Equity- Brand Loyalty- Trade Mark- Packaging-Role of packaging- Essentials of good packaging- Product Labelling- Marketing of services- Pricing of Products- Factors Influencing Pricing- Pricing Policies and Strategies -Types of Pricing

(12 Hours)

Module III

Price Mix – Pricing-Factors affecting pricing decision- Role of pricing in marketing strategy- Steps in formulating pricing- Pricing methods and strategies- Pricing of a new product- Resale Price Maintenance

(12 Hours)

Module IV

Physical Distribution Mix- - Logistic and Supply Chain Management – Elements- Channels of Distribution –Types- Factors Affecting the Choice of a Channel of Distribution-Functions of various Intermediaries – retailing- Types of retailing- Direct Marketing- Merits and demerits **(12 Hours)**

Module V

Recent Trends in Marketing (Overview Only)-Relationship Marketing - Social Marketing -Online Marketing- -Green Marketing-Tele Marketing -Viral Marketing- Relationship Marketing-De-marketing- Remarketing- Guerilla marketing – Ambush Marketing. **(6 Hours)**

Suggested Readings

1. Kotler, Philip & Keller, Kevin Lane, Koshy, Abraham, & Mithileshwar Jha, Marketing Management, A South Asian Perspective, *Pearson Education.*
2. Armstrong, Gary, and Kotler, Philip, The Essentials of Marketing, *Pearson Education, New Delhi*
3. Majaro, Simon, The Essence of Marketing, *Prentice Hall, New Delhi.*
4. Chhabra, T.N., Principles of Marketing, *Sun India Publication.*
5. Czimkota, Marketing Management, *Vikas Publishing House (P) Ltd.*
6. *Biplab S Bose, Marketing management, Himalaya Publishing House, Mumbai*
7. Rajan Nair and Varma M M – *Marketing Management- Sultan Chand and Sons*
8. Sontakki C N*, Marketing Management- Kalyani Publishers*
9. Ramaswamy V S and Namakumari *Marketing Management , McMillan India Ltd*

SEMESTER 4

Core Course -13

ENTREPRENEURSHIP DEVELOPMENT AND PROJECT MANAGEMENT

Instructional Hours: 90 **Credit: 4**

Objectives:

- *To develop entrepreneurial spirit among students*

- *To empower students with sufficient knowledge to start up their venture with confidence*
- *To mould young minds to take up challenges and become employer than seeking employment and to make them aware of the opportunities and support for entrepreneurship in India*

Module I

Introduction to Entrepreneurship- Definition and Meaning- Distinction between entrepreneur and manager- Characteristics and traits of an entrepreneur- Skills - Motivation of Entrepreneur- -Functions of an Entrepreneur- Role and importance of Entrepreneurship in economic development- Factors affecting growth of entrepreneurship **(10 Hours)**

Module II

Classification of entrepreneurs- Dimensions of Entrepreneurship-Intrapreneurship-Technopreneurship-Cultural Entrepreneurship- International Entrepreneurship-Ecopreneurship- Social Entrepreneurship and Women Entrepreneurship- Problems faced by Women Entrepreneurs-Entrepreneurship in Agriculture sector and service sectors- New avenues- Dealership, Networking and Franchising- Entrepreneurship in MSME- Micro Small Medium Enterprises-Definition- Role of MSME- Steps to establish an enterprise. **(25 Hours)**

Module III

Project Identification-Project- Meaning- Types- Project Management- Project life Cycle- Project identification- Sources of Project idea- Constraints in a project- Sources of Business idea-Protecting the Idea-Legal Protection in India-Trademarks- Copyright- Patent- Geographical Indication- Designs-Plant and Farmer Rights- **(15 Hours)**

Module IV

Project Formulation and Report- Formulation of a project- Stages in project formulation- - preparation of a project report- contents- project appraisal- various aspects of appraisal (Problems of appraisal techniques excluded) **(20 Hours)**

Module V

Entrepreneurial Support in India- Entrepreneurial Education and training- Entrepreneurship Development Programmes- Objectives and Methodology- The Concept, Role and Functions of Business Incubators- Start-Ups- Govt. of India Funding and Support for Start-Ups- Cluster Development Schemes- Pradan Mantri Mudra Yojana- Industrial Estates- Special Economic Zones- Other initiatives and assistance- Green Channel clearances- - Bridge Capital- Seed Capital Assistance- Special Institutions for Entrepreneurial Development and assistance in India-Functions of EDII, NIESBUD,NSIC, SIDBI and DIC **(20 Hours)**

Suggested Readings

1. Anjan, R. *Managing New Ventures, Concepts and Cases in Entrepreeurship,* New Delhi, PHI Learning Private limited.
2. Bhide A, *The Origin and Evolution of New Businesses,* New York, Oxford University Press.
3. Brandt, S. C. (1997). *Entrepreneuring: The 10 Commandments for Building a Growth Company.* New Delhi: Mc Millan Business Books.
4. Manjunath, N. (2008). *Entrepreneurship & Management.* Bangalore: Sanguine Technical Publishers.
5. Khanka S S- Entrepreneurial Development- S Chand and Sons
6. Desai,Vasant- Small Scale Business and Entrepreneurship- Himalaya Publications
7. AP Padnekar, Entrepreneurship, *Himalaya Publishing House, Mumbai.*
8. Rao, V S P- Business, Entrepreneurship and Management- Vikas Publishing House
9. Pandya, Rameswary- . Skill Development and Entrepreneurship in India, New Century Publications

SEMESTER 5

Core Course 15: ENVIRONMENT MANAGEMENT AND HUMAN RIGHTS

Instructional Hours: 90 **Credit: 4**

Module I (18 Hours)

Unit 1 : Multidisciplinary nature of environmental studies (2 Hours)

Definition, scope and importance -need for public awareness.

Unit 2 : Natural Resources :

Renewable and non-renewable resources : Natural resources and associated problems.

Forest resources : Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people. -**Water resources** : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. **Mineral resources** : Use and exploitation, environmental effects of extracting and using mineral resources, case studies. **Food resources** : World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. **Energy resources**: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources, Case studies. **Land resources**: Land as a resource, land degradation, man induced landslides, soil erosion and desertification - Role of individual in conservation of natural resources- Equitable use of resources for sustainable life styles.

(10 Hours)

Unit 3: Ecosystems

Concept of an ecosystem -Structure and function of an ecosystem -Producers, consumers and decomposers- Energy flow in the ecosystem -Ecological succession-Food chains, food webs and ecological pyramids-Introduction, types, characteristic features, structure and function of the given ecosystem:- Forest ecosystem **(6 Hours)**

Module II (26 hours)

Unit 1: Biodiversity and its conservation

- Introduction –Bio geographical classification of India -Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values-India as a mega-diversity nation-Hot-sports of biodiversity-Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts-Endangered and endemic species of India

(8 Hours)

Unit 2: Environmental Pollution

Definition,Causes, effects and control measures of: - Air pollution,Water pollution, Soil pollution, Marine pollution, Noise pollution,Thermal pollution, Nuclear hazards,Solid waste Management: Causes, effects and control measures of urban and industrial wastes-Role of an individual in prevention of pollution,Pollution case studies, Disaster management: floods, earthquake, cyclone and landslides.

(**8 Hours**)

Unit 3: Social Issues and the Environment

Urban problems related to energy, Water conservation, rain water harvesting, watershed management, Resettlement and rehabilitation of people: its problems and concerns, Case studies, Environmental ethics: Issues and possible solutions,-Climate change, global warming, acid rain, ozone layer depletion , nuclear accidents and holocaust, Case studies- Consumerism and waste products- Environment Protection Act - Air (Prevention and Control of Pollution) Act,Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act, Issues involved in enforcement of environmental legislation, Public awareness

(**10 Hours**)

Module – III (15 Hours)

Recent developments- Green Accounting- Meaning- History- Scope and Importance- Importance- Advantages and limitations- Green Banking- Meaning- benefits- coverage- steps in green banking- environmental risks for banks- Green banking initiatives- International initiatives- Initiatives in India- Green Marketing- Meaning- Need and benefits- Challenges- Green marketing in India- Green washing and consequences- Eco tourism- significance- eco tourism activities in India- Opportunities and challenges – carbon credit and carbon exchanges (over view only) - Environmental audit- concept- need and scope **(15 Hours)**

Module – IV (13 Hours)

Right to Information Act 2005- Basic terms- Public authority- Competent authority- Appropriate Government- Third Part- Information – record- Right to information- Objectives of the Act- Features of the Act- Obligation of Public authority- Procedure for request of information- time limit- fee- ground of rejection- appeal- exemption from disclosure- Right to access information on specific issues- Banking transactions, insurance transactions, government dealing and related services **(13 Hours)**

Module – V (18 Hours)

Unit 1- Human Rights– An Introduction to Human Rights, Meaning, concept and development, Three Generations of Human Rights (Civil and Political Rights; Economic, Social and Cultural Rights).

Unit-2 Human Rights and United Nations – contributions, main human rights related organs UNESCO, UNICEF, WHO, ILO, Declarations for women and children, Universal Declaration of Human Rights.

Human Rights in India – Fundamental rights and Indian Constitution, Rights for children and women, Scheduled Castes, Scheduled Tribes, Other Backward Castes and Minorities

Unit-3 Environment and Human Rights - Right to Clean Environment and Public Safety: Issues of Industrial Pollution, Prevention, Rehabilitation and Safety Aspect of New Technologies such as Chemical and Nuclear Technologies, Issues of Waste Disposal, Protection of Environment

Conservation of natural resources and human rights: Reports, Case studies and policy formulation. Conservation issues of Western Ghats- mention Gadgil committee report, Kasthurirangan report. Over exploitation of ground water resources, marine fisheries, sand mining etc. **(18 Hours)**

Assignment may include Field study involving

- Visit to a local area to document environmental grassland/ hill /mountain
- Visit a local polluted site – Urban/Rural/Industrial/Agricultural Study of common plants, insects, birds etc
- Study of simple ecosystem-pond, river, hill slopes, etc

Suggested Readings

1. Bharucha Erach, Text Book of Environmental Studies for undergraduate Courses. University Press, IInd Edition 2013 (TB)
2. Clark.R.S., Marine Pollution, Clanderson Press Oxford (Ref)
3. Cunningham, W.P.Cooper, T.H.Gorhani, E & Hepworth, M.T.2001 Environmental Encyclopedia, Jaico Publ. House. Mumbai. 1196p .(Ref)
4. Dc A.K.Enviornmental Chemistry, Wiley Eastern Ltd.(Ref)
5. Down to Earth, Centre for Science and Environment (Ref)
6. Heywood, V.H & Watson, R.T. 1995. Global Biodiversity Assessment, Cambridge University Press 1140pb (Ref)
7. Jadhav.H & Bhosale.V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284p (Ref)
8. Mekinney, M.L & Schock.R.M. 1996 Environmental Science Systems & Solutions. Web enhanced edition 639p (Ref)
9. Miller T.G. Jr., Environmental Science, Wadsworth Publishing Co. (TB)
10. Odum.E.P 1971. Fundamentals of Ecology. W.B. Saunders Co. USA 574p (Ref)
11. Rao.M.N & Datta.A.K. 1987 Waste Water treatment Oxford & IBII Publication Co.Pvt.Ltd.345p (Ref)
12. Rajagopalan. R, Environmental Studies from crisis and cure, Oxford University Press, Published: 2016 (TB)
13. Sharma B.K., 2001. Environmental Chemistry. Geol Publ. House, Meerut (Ref)
14. Townsend C., Harper J, and Michael Begon, Essentials of Ecology, Blackwell Science (Ref)
15. Trivedi R.K., Handbook of Environmental Laws, Rules Guidelines, Compliances and Standards, Vol I and II, Enviro Media (Ref)
16. Trivedi R. K. and P.K. Goel, Introduction to air pollution, Techno-Science Publication (Ref)
17. Wanger K.D., 1998 Environmental Management. W.B. Saunders Co. Philadelphia, USA 499p (Ref)
18. (M) Magazine (R) Reference (TB) Textbook
19. Amartya Sen, The Idea Justice, New Delhi: Penguin Books, 2009.
20. Chatrath, K. J.S., (ed.), Education for Human Rights and Democracy (Shimla: Indian Institute of Advanced Studies, 1998)
21. Law Relating to Human Rights, Asia Law House,2001.
22. Shireesh Pal Singh, Human Rights Education in 21st Century, Discovery Publishing House Pvt.Ltd, New Delhi,
23. S.K.Khanna, Children And The Human Rights, Common Wealth Publishers,1998. 2011.
24. Sudhir Kapoor, Human Rights in 21st Century,Mangal Deep Publications, Jaipur,2001.
25. United Nations Development Programme, Human Development Report 2004: Cultural Liberty in Today's Diverse World, New Delhi: Oxford University Press, 2004.

26. Monica Loss,,Green Marketing Strategies and Consumer Behaviour, Global Vision Publishing House
27. Robert Dahlstrom- Green Marketing:Theory, Practice and Strategies, Cengage Learning India Private Limited
28. A N Sarkar , Green Banking , Atlantic Publishers
29. Thomas Aronsson and Karl Gustaf Lofgren, Edgar Handbook of Environmental Accounting, Elgar Publishing
30. M Sarngadharan and G Raju , Tourism and Sustainable Economic Developments: Indian and Global Perspectives – New Century Publishers
31. ICAI Study Material of Auditing
32. Right to Information Act, 2005

SEMESTER 6

Core Course 18: ADVERTISEMENT AND SALES MANAGEMENT

Instructional Hours: 72 **Credit: 3**

OBJECTIVE- *To make the students aware of the strategy, concept and methods of advertising and sales promotion.*

MODULE-1

Introduction : Advertising-Meaning-Origin and development - Objectives-Importance- Functions of advertising-Role of advertisement in marketing mix- Classification and Types of advertisement- Merits and demerits- Advertisement process- Advertising planning- Key players in advertising industry-Advertisement agencies- Types and functions of advertising agencies- -Advertisement campaign - Social, economical and legal aspects of advertisement- Ethics in advertisement- meaning- perceived role of advertisement-Forms of ethical violation- misleading advertisements- advertising to children- product endorsements- stereotyping, cultural, religious and racial sensitivity in advertising- obscenity in advertising-misleading and deceptive advertising- false claims- Advertisement Standards Council of India – Regulation of advertising in India **(18 Hours)**

MODULE-2

Advertisement appeal and media- Advertisement appeal- Meaning- essentials of an advertisement appeal- types of appeal- advertisement copy- requisites of an effective advertisement copy-types of copy-Elements of copy-Lay out- Functions of lay out- Elements of layout- Principles of design and layout-copy writing- qualities of a good copy writer- -Copy testing and advantages- Advertising media-Media planning and strategy-Types of media- Media selection-Importance of media planning and selection-problems in media planning- Internet as an advertisement medium- Objects of internet advertisement-Advantages and disadvantages of internet advertising – Permission marketing- Steps in permission marketing- **(18 Hours)**

MODULE-3

Advertising research-Need for advertisement research- Measuring the effectiveness of advertising-Importance of measuring the effectiveness- Methods: Pre-testing, Concurrent testing and Post- testing-Constraints in measuring the effectiveness- DAGMAR model **(10 Hours)**

MODULE-4

Sales promotion-Promotion mix- Components- Sales promotion-Concept- Definition-Scope-Objectives- Importance of sales promotion- Methods and techniques of sales promotion -Sales promotion strategies- Differences between advertisement and sales promotion—Advantages and drawbacks of sales promotion- Sales promotion budget and its preparation-Sales promotion campaign-Evaluation of sales promotion strategies **(18 Hours)**

MODULE-5

Personal selling-Nature and importance-Essential elements of personal selling- Process-Principles of personal selling- Types of sales persons-Sales force management-Designing and managing the sales force- Evaluating sales force **(8 Hours)**

Suggested Readings

1. Wells, Moriarty & Burnett, *Advertising, Principles & Practice, Pearson Education*
2. Kenneth Clow. Donald Baack, *Integrated Advertisements, Promotion and Marketing communication, Prentice Hall of India, New Delhi,*
3. S. H. H. Kazmi and Satish K Batra, *Advertising & Sales Promotion, Excel Books, New Delhi,*
4. Manendra Mohan - *Advertising Management – Concepts and Cases, Tata McGraw Hill*
5. Sherlekar, Victor & Nirmala Prasad - *Advertising Management - Himalaya Publishing House*
6. S.A. Chunawalla - *Promotion Management Himalaya Publishing House*
7. C.L. Tyagi, Arun Kumar- *Advertising Management- Atlantic Publishers and Distributors*

Core Course 19: AUDITING AND ASSURANCE

Instructional Hours – 90 **Credits: 4**

objectives:

1. *To familiarize the students with the principles and procedure of auditing.*
2. *To enable the students to understand the duties and responsibilities of auditors and to undertake the work of auditing.*

Module I

Introduction-Meaning and Nature of Auditing- Definition of Audit- Basic Principles Governing an Audit, Scope of Audit, Objectives of Audit- Main Object and Subsidiary Objects -Advantages of an Audit, Inherent Limitations of Audit , Differences between Accountancy and Auditing. The Auditor: Qualities and Qualifications of an Auditor- Types and Conduct of Audit- Tax Audit- Performance Audit-Social Audit. Auditing standards : Overview, Role of Auditing and Assurance Standards Board in India **(17 Hours)**

Module II

Audit Engagement, Documentation and Evidence – Audit Planning, Audit Programme Preparation before Audit. Audit files: Permanent and current audit files, Ownership and custody of working papers. Audit working papers. Audit evidence – Meaning, Types, Reliability of audit evidence. Methods of

obtaining audit evidence- Physical verification, Documentation, Direct confirmation, Re-computation, Analytical review techniques, Representation by management. **(15 Hours)**

Module III

Internal Control –Concept of internal control**,** Internal Control and the Auditor, Internal Control Questionnaire, Internal Control and Computerized Environment-General Control and Application Controls- Internal Check - Meaning and Definition , Objects of Internal Check, Auditors Duties as Regards Internal Check, Internal Audit- Internal Auditor and independent Auditor - Difference between Internal Check- Internal Control and Internal Audit- Internal Check as Regards Cash Transactions, purchases- sales- wages and stores. Vouching- meaning of Vouching- Definition -Vouchers- Points to be noted in Vouchers-Importance of vouching- Vouching of Cash Transactions - Vouching of Receipts and Payments, Vouching of Wages. Verification and Valuation of Assets and Liabilities - Concept, objects, Auditors Duty in Verification and Valuation.

(25 Hours)

Module IV

Audit of Limited Companies –(based on Companies Act 2013) Company Auditor- Qualifications- Disqualifications- Appointment Removal- Powers and Duties of an Auditor- Liabilities of an Auditor - Audit Report- Contents and Types.

(15 Hours)

Module V

Special Audits and Investigation – Government Audit, General Duties and powers of Comptroller and Audit General , Miscellaneous Audits (Procedure only)- Audit of Charitable organizations- Educational Institutions (College) – Hospital - Club- Audit in computerized environment- Audit around computer and audit through computer- Investigation- Meaning and Definition of Investigation- Scope of investigation- Distinction between Investigation and Auditing- Investigation on Acquisition of Running Business, Investigation when Fraud is suspected.

(18 Hours)

Suggested Readings

1. Tandon, B.N., Sudharsanam, S., & Sundharabahu, S., A Handbook of Practical Auditing, *S.Chand & Compaly Ltd, New Delhi.*
2. Arun Jha, *Auditing* – University Edition, *Taxman Publications*
3. Saxena, R. G., Principles and Practice of Auditing, *Himalaya Publishing House, Mumbai*
4. Sharma, T. R., Auditing *Sahitya Bhawan Publication Agra*.
5. Saxena, R. G., Principles and Practice of Auditing, *Himalaya Publishing House, New Delhi.*
6. ICAI Study material for IPCC and Final

Syllabus and Curriculum for M. Com Programme

Master of Commerce

2019 ADMISSION ONWARDS

(UNDER MAHATMA GANDHI UNIVERSITY PGCSS REGULATIONS 2019)

BOARD OF STUDIES IN COMMERCE (PG)
MAHATMA GANDHI UNIVERSITY

2019

The Program Structure

Course Code	Title of the Course	Type of the Course	Hours per week	Credits
FIRST SEMESTER				
CM010101	Specialised Accounting	Core	5	4
CM010102	Organisational Behaviour	Core	5	3
CM010103	Marketing Management	Core	5	4
CM010104	Management Optimisation Techniques	Core	5	4
CM010105	Methodology for Social Science Research	Core	5	4
TOTAL FOR SEMESTER			**25**	**19**
SECOND SEMESTER				
CM010201	Advanced Corporate Accounting	Core	5	4
CM010202	Human Resource Management	Core	5	3
CM010203	International Business and Finance	Core	5	4
CM010204	Quantitative Techniques	Core	5	4
CM010205	Strategic Management	Core	5	4
TOTAL FOR THE SEMESTER			**25**	**19**
THIRD SEMESTER				
CM010301	Strategic Financial Management	Core	6	5
CM010302	Income Tax – Law and Practice	Core	7	5
CM010303	Security Analysis and Portfolio Management	Core	6	4
CM800301/ CM810301/ CM820301	Indirect Tax Laws (Group I) Logistics and Supply Chain Management (Group 2) Total Quality Management (Group 3)	Core-Elective	6	4
TOTAL FOR THE SEMESTER			**25**	**18**
FOURTH SEMESTER				
CM010401	Advanced Cost and Management Accounting	Core	6	5
CM010402	Income Tax-Assessment and Procedure	Core	7	5
CM800401/ CM810401/ CM820401	Derivatives and Risk Management (Group 1) Retail and Rural Marketing (Group 2) E-Commerce and E-Business Management (Group 3)	Core-Elective	6	4
CM800402/ CM810402/ CM830402	Personal Investment and Behavioural Finance (Group 1) Services Marketing (Group 2) Legal Framework for I.T. Based Business and Intellectual Property Rights (Group 3)	Core-Elective	6	4
CM010403	Project Report	Core-Project	Nil	4
CM010404	Comprehensive Viva Voce	Core- Viva	Nil	2
TOTAL FOR THE SEMESTER			**25**	**24**
TOTAL CREDITS FOR THE PROGRAMME				**80**

FIRST SEMESTER COURSES

Course Code	**CM010101**
Title of the Course	**SPECIALISED ACCOUNTING**
Semester	**One**
Type	**Core**
Credits	**4**
Hours	**5 per week and Total 90**

Objective of the Course:

To equip the students to apply accounting standards and deal with advanced practical areas related to valuation, amalgamation, specialised areas and to have a basic understanding on developments in accounting

Course Outcome No	Expected Course Outcome	Cognitive Level	Programme Specific Outcome Linkage
1	Providing an in depth understanding about theoretical and practical aspects of major Accounting Standards to apply the same in different practical situations.	Understand and Apply	**PSO 2**
2	Ascertain the value of goodwill and value of companies based on the value of shares and compare the real value of shares and with the market prices and identify the mispricing.	Apply	**PSO 2**
3	In depth understanding about the determination of purchase consideration in the event of amalgamation and to prepare post amalgamation financial statements	Apply	**PSO 2**
4	Develop a clear understanding about different types of NBFCs, their provisioning norms and to understand the concept of NAV of mutual funds through its computation.	Evaluate	**PSO 2**
5	Acquaint with the theoretical aspects of emerging areas in accounting	Understanding	**PSO 2**

Unit wise arrangement of the course

Module	Sl. No. of Units	Contents of the Unit	Remarks
Module 1. Accounting Standards - 25 hours			
1	1.1	Meaning and definition of Accounting Standards – Need for standards – Process of development of standards - its Applicability- Advantages of AS – Accounting Standard Board and its role - AS 1 – Disclosure of Accounting Policies	Theory only
	1.2	AS 2 – Valuation of Inventories AS 9 – Revenue Recognition;	Theory and problems
	1.3	AS 10- Accounting for property, plant and eqioment AS 20- Earning Per Share	Theory and problems
	1.4.	AS 22 – Accounting for Tax on Income Computation of Deferred Tax	Theory and problems
	1.5.	AS 26- Intangible Assets. AS 28 – Impairment of Assets.	Theory and problems
2. Valuation of Goodwill and Shares – 15 hours			
2.	2.1.	Goodwill- Meaning and definition, - Factors affecting goodwill – circumstances where good will is valued - Methods of valuing goodwill	Theory only
	2.2	Problems on goodwill - Average profit method - Super profit method - Annuity method and - Capitalization method.	Problems
	2.3	Need for valuation of shares – Methods of valuation of shares - Advantages and disadvantages of different methods of valuation of shares	Theory only
	2.4	Practical problems on Net asset method or intrinsic value method - Yield method- Earning capacity method - Fair value method of valuing shares.	Problems
3. Accounting for Amalgamation – 30 hours			
3.	3.1	Accounting Standards -14 - Amalgamation in the nature of merger and Amalgamation in the nature of purchase-Purchase consideration- Pooling of Interest Method and Purchase Method (theory) – Difference between pooling of interest and purchase method	Theory only
	3.2	Practical problems on the computation of purchase consideration	Problems
	3.3	Treatment of goodwill and reserves under pooling of interest method and purchase method	Theory and problems
	3.4	Entries in the books of Purchasing Company- Entries in the books of Vendor Company	Problems
	3.5	Consolidated balance sheet in case of amalgamation in the nature of merger	Problems
	3.6	Consolidated balance sheet in case of amalgamation in the nature of purchase	Problems
	3.7	Practical problems involving mutual owings	Problems

	3.8	Practical problems involving the accounting treatment when purchasing company already holds shares in the vendor company – Selling company already holds shares in purchasing company – Cross holdings	Problems
4. Accounting for NBFCs and Mutual Funds- 10 hours			
4.	4.1	NBFC – Difference between an NBFC and Bank – Classification of NBFCs based on registration with RBI - Asset Finance Companies – Investment Companies – Infrastructure Finance Companies – Systematically Important Core Investment Companies – Infrastructure Debt Fund NBFC – NBFC Micro Finance Institutions	Theory only
	4.2	NBFC Factors – Mortgage Guarantee Companies – Residuary NBFCs – Regulations regarding; Net owned Fund – Liquid asset requirement	Theory only
	4.3	Income Recognition - Prudential Accounting Norms – Asset Classification – Provisioning Requirements – Computation of Provisions – Requirements as to Capital Adequacy.	Theory and short problems
	4.4	Mutual Funds – Meaning – importance- Classification of mutual funds	Theory only
	4.5	Contents of Balance sheet and Revenue account of the Mutual Fund (Theory only) – Computation of NAV(Theory and Problems)	Theory and short problems
	4.6	Accounting Treatment in the event of Disposal of Investment; Journal Entries – Dividend equalisation	Theory and short problems
5. Developments in Accounting – 10 hours			
5	5.1	Block chain Technology in Accounting Artificial Intelligence in Accounting (overview only)	Theory only
	5.2	Green Accounting Concepts - Scope and Significance – Statements to be prepared - developments in a globalised era.	Theory only
	5.3	Forensic Accounting – Lean Accounting	Theory only

Proposed Areas of Assignment:

1. Assignment on the recent real cases of amalgamation evaluating the ratio of share exchange or valuation of firms.
2. Assignment of valuation of shares of companies and comparison with actual market price.
3. Assignment on the evaluation of the performance of mutual fund schemes based on real data.

Recommended Text Books

1. Corporate Accounting, A. Mukharjee and M. Hanif, TATA McGrawHill Co

2. Advanced accountancy, Arulanandam & Raman, Himalaya Publishing House
3. Fundamentals of Financial accounting, Nassem Ahmed, Ane books Pvt, Limited
4. Advanced Financial Accounting, R.L. Gupta &Radhaswami, Sultan Chand CO;
5. Advanced Financial Accounting, S.N. Maheswari
6. Advanced Financial Accounting, Paul & Kaur
7. Advanced Financial Accounting, B.D. Agarwal
8. Advanced Financial Accounting, S.P. Jain & K.L. Narang; Kalyani Publishers

References

1. Study Material for CA IPCC Group I – Accounting
2. Study Material for CA IPCC Group II – Advanced Accounting
3. Students Hand Book on Advanced Accounting, G.Sekar and B. Saravana Prasath, C. Sitaraman & Co. Pvt Ltd;

Break up of Theory and Problems for Examination

Section A- 6 Theory 4 problems
Section B – 3 Theory 5 Problems
Section C- 1 Theory 3 Problems

Course Code	**CM010102**
Title of the Course	**ORGANISATIONAL BEHAVIOUR**
Semester	**One**
Type	**Core**
Credits	**3**
Hours	**5 per week and Total 90**

Objective of the Course

To understand human behaviour at Individual, Interpersonal, Group and Inter-Group levels and to recognise issues inherent in organisational change, growth, development and conflict

Course Outcome No	Expected Course Outcome	Cognitive Level	Programme Specific Outcome Linkage
1	Basic understanding about the concepts of organisation behaviour	Understanding	**PSO 1**
2	A very good understanding about individual behaviour, personality and motivation.	Understand and evaluate	**PSO 1**
3	Imparting deep understanding about group behaviour and leadership related to organisational behaviour.	Understanding	**PSO 1**
4	Add the knowledge base of the leaner regarding change management and deal with stress	Evaluate and Apply	**PSO 1**
5	Impart knowledge about the role of organisational culture and conflict on organizational behavior	Understand and Apply	**PSO 1**

Unit wise arrangement of the course

Module No.	Unit No.	Contents	Remarks
Module 1- Introduction to Organisational Behaviour			
1	1.1	Meaning and definition of Organisation Behaviour – Scope – Basic concepts of OB – Foundations of OB- Challenges and Opportunities of OB	Short questions
	1.2	Role of organisation behaviour – Determinants — Challenges and opportunities of OB – Contributing disciplines – Difference between organisational behaviour and organisation theory	Short questions and short essays
	1.3	Models of OB – Autocratic model – Custodial model – Supportive model – Collegial model	Short questions short essays and essay questions
Module 2- Individual Behaviour and Motivation			

2	2.1	Concept of Human Behaviour - Characteristics - Models of Man, Factors influencing Individual Behaviour	Short questions and short essays
	2.2	Personality-Determinants - Personality Traits	Short questions short essays and long essay questions
	2.3	Perception – Process of perception – Factors influencing Perception – Perceptual errors	Short questions short essays and long essay questions
	2.4	Attitudes - values -- Learning – Process of Learning - Reinforcement - Behaviour modification	Short questions short essays and long essay questions
	2.5	Motivation – Concept - Theories or models of motivation- Need hierarchy, Theory X and Theory Y - Two factor theory	Short questions short essays and long essay questions
	2.6	Contemporary theories of motivation –ERG - Cognitive evaluation - goal setting- equity- expectancy model	Short questions short essays and long essay questions
Module 3- Group Behaviour and Leadership			
3	3.1	Transactional Analysis - Johari Window – Ego states -Life positions,	Short questions short essays and long essay questions
	3.2	Group - Factors influencing group behaviour- Norms-Cohesiveness	Short questions short essays and long essay questions
	3.3	Stages of Group Development- Group Structure- Group Decision making-	Short answer and Short essays
	3.4	Teams- Types of teams- Group Vs Teams	Short answer and Short essays
	3.5	Difference between Authority and Power – Sources of Power- Tactics used to gain power - Status –Problems caused by status system	Short questions short essays and long essay questions
	3.6	Leadership- features – concepts – qualities of good leaders – Leadership styles	Short questions short essays and long essay questions
	3.7	Theories of Leadership - Behavioural approach - Situational approach – Transactional and transformational Leadership	Short questions short essays and long essay questions
Module 4- Organisational Change, Development and Stress Management			
4	4.1	Organisational Change – Forces for change - Resistance to change- overcoming resistance to change	Short questions and short essays
	4.2	Types of change – Revolutionary and evolutionary change	Short questions and short essays
	4.3	Greiner's five stages of organisational growth- Organisational Development - concept - OD intervention techniques	Short questions short essays and long essay questions

	4.4	Stress – Meaning –Types of stress- Causes of Stress- Consequences-	Short questions short essays and long essay questions
	4.5	Stress Management – Need- Techniques adopted for Stress Management in Organisations	Short questions short essays and long essay questions
Module 5- Organisational Culture and Conflict			
5	5.1	Concept and determinants of organisational culture	Short questions and short essays
	5.2	Conflict – concept – stages in organisational conflict - functional and dysfunctional aspects of conflict – levels of conflict - Stimulation and resolution of conflict	Short questions short essays and long essay questions

Proposed Areas of Assignment:

1. Analysis of Case studies on individual and group behaviour in leading corporates
2. Evaluation of case studies on motivation and leadership in organisation
3. Case study on organisational change, resistance to change and organisational culture

Recommended Text Books

1. Robbins S.P., Organisational Behaviour (16th Ed.), Pearson.
2. Dwivedi R.S., Human relations and organizational behaviour, MacMillain Publishers
3. Organisational Behaviour, Aswathappa, Himalaya Publishing House
4. Gupta C.B., A Text Book of Organisational Behaviour, S Chand & Company
5. Jai B.P. Sinha, Culture and Organizational Behaviour, Sage India.
6. Kumar Paranit, Organisational Behaviour, Gen Next Publication.

References

1. Organisational Behaviour concepts and cases ,Ghanekar, Anjali ,Everest publisher
2. Human Relations and organisational behaviour : Global perspective, Dwivedi R.S. Macmillan
3. Organisational Behaviour: Foundations, Theories, and Analyses, John B. Miner. Oxford University Press

SECOND SEMESTER COURSES

Course Code	**CM0100202**
Title of the Course	**HUMAN RESOURCE MANAGEMENT**
Semester	**Two**
Type	**Core**
Credits	**3**
Hours	**5 per week and Total 90**

Objectives of the course

To give an overview as to how an organisation identifies requirements of human resources, how it acquires, rewards, develops, motivates and manages people effectively

and also provide an insight into the developments taking place in the field of Human Resource Management.

Course Outcome No	Expected Course Outcome	Cognitive Level	Programme Specific Outcome Linkage
1	Acquaintance with basic concepts of HRM and performance appraisal	Understanding	**PSO 1**
2	Understanding about human resource development, stress management and work life management.	Understanding	**PSO 1**
3	High level knowledge about various aspects of training	Understanding	**PSO 1**
4	Understanding about various aspects of industrial relations so as to evaluate the real cases of industrial relations.	Evaluate	**PSO 1**
5	Understanding about HR outsourcing HR accounting and HR audit.	Understanding	**PSO 1**

Unit wise arrangements of the course

Module No	Unit No	Contents	Remarks
Module 1- Human Resource Management – 20 hours			
1	1.1	Human Resource Management – Nature, Scope and Functions - Role and status of HR manager	Short questions, Short Essay
	1.2	HR policies – Need and Importance – Types of policies- Formulation of Policies	Short questions, Short Essay
	1.3	HR planning process – Objectives- Need and Importance- Levels of HR Planning - Problems of HRP	Short questions, Short Essay, Long essay
	1.4	Job analysis- Objectives- Process and Techniques- Job description and specification- Job design – Methods	Short questions, Short Essay, Long essay
	1.5	Recruitment – Sources and techniques- selection- Steps	Short questions, Short Essay, Long essay
	1.6	Placement – Concept- Induction- Objectives	Short questions, Short Essay
Module 2- Human Resource Development- 18 hours			
2	2.1	Concept of HRD: -Objectives, Mechanisms and Assumptions of HRD- HRM vs HRD	Short questions, Short Essay
	2.2	Qualities of an HRD manager-Principles of HRD	Short questions, Short Essay
	2.3	Employee Counselling-Need , Concepts, Forms and Steps Human Capital, Emotional Quotient, Mentoring	Short questions, Short Essay

	2.4	Impact of TQM, Quality Circles, Kaizen on HRM	Short questions, Short Essay, Long essay
Module 3- Training and Development -17 hours			
3	3.1	Concept of Training-Need and Importance - Organisation and management of training function;	Short questions, Short Essay
	3.2	Training methods and techniques-Attitudinal Training	Short questions, Short Essay, Long essay
	3.3	Technical training - Training for creativity and problem solving – training for management change – Training for Productivity	Short questions, Short Essay, Long essay
	3.4	Role, responsibilities and challenges to training managers and employees	Short questions, Short Essay
Module 4- Performance Appraisal and Industrial Relations – 20 hours			
4	4.1	Performance appraisal – significance - Methods or techniques of performance appraisal	Short questions, Short Essay, Long essay
	4.2	Job Evaluation- Objectives and Process-Limitations	Short questions, Short Essay, Long essay
	4.3	Promotion and demotions; transfer, separations: resignation; discharge; dismissal; suspension; retrenchment	Short questions, Short Essay
	4.4.	Lay off; -Industrial relations – Compensation-Grievance-meaning and causes of grievance	Short questions, Short Essay
	4.5	Importance of Grievance handling - procedure of grievance handling - Hot stove rule-code of discipline	Short questions, Short Essay, Long essay
	4.6	Employee participation in management-techniques - Sweat equity scheme	Short questions, Short Essay
Module 5- HR Outsourcing , Records , Accounting and Audit – 15 hours			
5	5.1	HR outsourcing:-legal requirements- contractor's liabilities- liabilities of the company towards contractor's labourers	Short questions, Short Essay
	5.2	H R records and reports- significance – types-	Short questions, Short Essay
	5.3	Human Resource Accounting – meaning – significance – Approaches to HR Accounting (Theory only)	Short questions, Short Essay, Long essay
	5.4	HR appraisal and audit - concept, scope, methods and importance	Short questions, Short Essay

Suggested areas for Assignments

1. Evaluation of real life case studies related to employee participation in management, employee grievance redressal

2. Make a report on the history sweat equity issues made by companies in India
3. Evaluation of case studies of companies adopted Kaizen technique, Quality circle and TQM

Recommended Text Books:

1. Human Resource Management, Gupta, C.B.: Chand and Sons
2. Aswathappa K., Human Resource and Personnel Management; Tata McGraw Hill, New Delhi, 1997.
3. Human resource Management, L M Prasad, Sultan Chand
4. Human resource Management- Text and Cases, S S Khanka, S Chand
5. Human Resource Management, Sashi K Gupta and Rosy Joshi, Kalyani Publishers

References

1. International Human resource Management – P Subbarao, Himalaya Publishing House
2. Human Resource Management -Text and Cases- V S P Rao , Excel Publishers

MAHATMAGANDHI UNIVERSITY

PRIYADARSINI HILLS
KOTTAYAM-686560

RESTRUCTURED SYLLABUS FOR POST-GRADUATE PROGRAMME UNDER CREDIT SEMESTER SYSTEM

IN

COMMERCE

(w.e.f 2012 Admission onward

M.Com Programme

SEMESTER 1

Sl. No	Code	Title	Instructional Hrs	Credit
1.	AF01C01	Advanced Financial Accounting-**1**	90	4
2.	PM01C02	Principles of Management and Organisational Behaviour	90	4
3.	FM01C03	Financial Management Principles	90	4
4.	RM01C04	Research Methodology	90	4
5.	QT01C05	Quantitative Techniques	90	4

SEMESTER 11

Sl. No	Code	Title	Instructional Hrs	Credit
1.	AF02C06	Advanced Financial Accounting-**11**	90	4
2.	SM02C07	Strategic Management	90	4
3.	FM02C08	Financial Management Strategies	90	4
4.	HR02C09	Human Resource Management	90	4
5.	OR02C10	Operations Research	90	4

SEMESTER 111

Sl. No	Code	Title	Instructional Hrs	Credit
1.	MA03C11	Management Accounting	90	4
2.	DT03C12	Direct Taxes- Law and Practice	90	4
3.	1B03C13	International Business	90	4
4.	CG03C14	Corporate Governance	90	4
5.	BE03C15	Business Environment	90	4

SEMESTER 1V (Elective –Finance)

Sl. No	Code	Title	Instructional Hrs	Credit
1.	AC04C16	Advanced Cost Accounting	90	3
2.	DT04C17	Direct Taxes- Assessment and Procedures	90	3
3.	1F04E01	International Finance	90	3
4.	FM04E02	Financial Markets and Derivatives	90	3
5.	SA04E03	Security Analysis and Portfolio Management	90	3
6.	PD04C18	Project/Dissertation		3
7.	VV04C19	Viva-Voce		2

SEMESTER 1V (Elective –Management)

Sl. No	Code	Title	Instructional Hrs	Credit
1.	AC04C16	Advanced Cost Accounting	90	3
2.	DT04C17	Direct taxes- Assessment and Procedures	90	3
3.	OM04E01	Operations Management	90	3
4.	PM04E02	Product and Brand Management	90	3
5.	HM04E03	Hospitality Management	90	3
6.	PD04C18	Project/ Dissertation		3
7.	VV04C19	Viva-Voce		2

SEMESTER 1V (Elective –Banking and Insurance)

Sl. No	Code	Title	Instructional Hrs	Credit
1.	AC04C16	Advanced Cost Accounting	90	3
2.	DT04C17	Direct Taxes- Assessment and Procedures	90	3
3.	MB04E01	Modern Banking	90	3
4.	IL04E02	Insurance Law and Practice	90	3
5.	FE04E03	Foreign Exchange Management	90	3
6.	PD04C18	Project/Dissertation		3
7.	VV04C19	Viva-Voce		2

SEMESTER 1V (Elective –E commerce)

Sl. No	Code	Title	Instructional Hrs	Credit
1.	AC04C16	Advanced Cost Accounting	90	3
2.	DT04C17	Direct Taxes- Assessment and Procedures	90	3
3.	IT04E01	Information Technology and Business	90	3
4.	EC04E02	Electronic Commerce	90	3
5.	IW04E03	Internet and Web Page Designing	90	3
6.	PD04C18	Project/ Dissertation		3
7.	VV04C19	Viva-Voce		2

SEMESTER 1V (Elective –E Marketing)

Sl. No	Code	Title	Instructional Hrs	Credit
1.	AC04C16	Advanced Cost Accounting	90	3
2.	DT04C17	Direct Taxes- Assessment and Procedures	90	3
3.	MM04E01	Marketing Management	90	3
4.	MR04E02	Marketing Research	90	3
5.	MS04E03	Marketing Services	90	3
6.	PD04C18	Project/Dissertation		3
7.	VV04C19	Viva-Voce		2

M Com PROGRAMME-CORE COURSES

SEMESTER 1 **Credit-4**
Code: AF01C01 **Hrs 90**

ADVANCED FINANCIAL ACCOUNTING-1

Objectives

- ***To know the methods of valuation of goodwill and share***
- ***To acquaint with the amalgamation and reconstruction procedures of companies***
- ***To learn the proceedings of insolvency of an individual and international reporting standards.***

MODULE-1 Valuation of Goodwill and shares

a) **Goodwill- meaning and definition, Factors affecting goodwill,- Methods of valuing goodwill-Average profit method-Super profit method, Annuity method and capitalization method.**

b) **Valuation of share-Need for valuation-Methods of valuation-Net asset method or intrinsic value method-yield method-earning capacity method-fair value.**

(15 Hrs)

MODULE-2 Amalgamation, Absorption and External Reconstruction-Amalgamation in the nature of merger and Amalgamation in the nature of purchase- Purchase consideration-Net payment method-Net Asset method-share exchange method-Entries in the books of purchasing company- entries in the books of vendor company-consolidated balance sheet-Inter-company Owings and holdings-Advanced problems.

(25 Hrs)

MODULE-3 Alteration of share capital and Internal reconstruction-Procedure for reducing share capital- Re-organisation-Scheme of reconstruction-Accounting entries on Internal reconstruction.

(15 Hrs)

MODULE-4 Insolvency accounts of an Individual-Statement of affairs and deficiency accounts.

(20 Hrs)

MODULE-5 a) Human Resource accounting-Meaning-Objectives-Valuation of Human Resource-Advanced and limitations of HRA.
b)International Financial Reporting Standards (IFRS)

(15 Hrs)

REFERENCE BOOKS

1. ***Advanced Financial Accounting, M.C.Shukla & T.S.Grewal, S.Chand & Co;***
2. ***Advanced accountancy, Arulanandam & Raman, Himalya Publishing House***
3. ***Fundamentals of Financial accounting, Nassem Ahmed, Ane books Pvt, Limited***
4. ***Advanced Financial Accounting, R.L.Gupta & Radhaswami, Sultan Chand CO;***
5. ***Advanced Financial Accounting, S.N.Maheswari***
6. ***Advanced Financial Accounting, Paul & Kaur***
7. ***Advanced Financial Accounting, B.D. Agarwal***
8. ***Advanced Financial Accounting, S.P.Jain & K.L.Narang; Kalyani Publishers***

SEMESTER 1 **Credit-4**
Code: PM01C02 **Hrs 90**

PRINCIPLES OF MANAGEMENT AND ORGANISATIONAL BEHAVIOUR

Objectives

- ***To help the students to understand the conceptual frame work of management and organizational behaviour***
- ***To understand the managerial applicability of the concepts.***

MODULE-1 **Introduction, The management concept-Different schools of management thoughts- Nature and functions of management-principles of management-MBE-Corporate Social Responsibility**

(15 Hrs)

MODULE-2 **Planning and organizing-planning process-primises- forecasting-forecasting techniques-components of planning-MBO-Organisation-Design and structure-committees- Task force-Matrix Organisation-project organization-delegation of authority-span of control**

(15 Hrs)

MODULE-3 **Organisational behaviour-concepts and significance-relationship between management and OB-Models of OB-Contributing disciplines to OB-Challenges and opportunities- Transaction analysis-Johari window-Organisational development-concepts-OD Intervention-Change management-Need for change-resistance to change-Theories of change-Organisational Diagnosis.**

(20 Hrs)

MODULE-4 **Groups in organization- nature- theories of group formation-stages of group development-types of groups-formal and informal groups-conflict-definition-functional and dysfunctional aspect of conflict-types of conflict-conflict process-intra individual conflict-goal conflict-interpersonal conflict-strategies of interpersonal conflict-lose lose, win**

lose, win win-inter group conflict-strategies to handle inter group conflict-organizational conflict-conflict handling mechanisms.

(25 Hrs)

MODULE-5 **Modern techniques in management-quality circle-TQM-BPR-Six sigma-kaizen-bench marking-MDP-Steps in MDP.**

(15 Hrs)

REFERENCE BOOKS

1. ***Human relations and organizational behaviour, RS. Dwivedi, Macmillain publishers India limited.***
2. ***Management Process and OB, Sharmma & Gupta ;Kalyani Publishers***
3. ***Principles of management, T Ramaswami, Himalya Publishing House.***
4. ***Management and Organizational Behaviour Essentials, Schermerhorn***
5. ***Organisational behaviour, Aswathappa, Himalaya Publishing House***
6. ***Organisational behaviour, Sujanair, Himalaya Publishing House***
7. ***Principles of management, BS.Moshal, Ane books private limited.***
8. ***Management theory and practice, J.P.Mahajan, Ane books private limited.***
9. ***Organizational theory and behaviour, BS.Moshal, Ane books private limited.***
10. ***Organisational Behaviour, BS.Moshal, Ane books private limited.***
11. ***Principles and practice of management, PF.Drucker.***
12. ***Principles of management, LM.Prasad, Sultan Chand Co*;**

SEMESTER II **Credit-4**

Code: AF02C06 **Hrs 90**

ADVANCED FINANCIAL ACCOUNTING-PAPER 11

Objectives

- ***To understand the proceedings of the preparation of consolidated balance sheet***
- ***To get an idea about Green accounting, Double accounts, Farm accounts, voyage accounts, and liquidation proceedings of companies.***

MODULE-1 **Accounts of holding companies, consolidated balance sheet-minority interest-cost of control-pre-acquisition and post-acquisition profit-elimination of common transaction-contingent liabilities-unrealised profit-bonus issue-revaluation of assets and liabilities-treatment of dividend-debentures and preference shares of subsidiary companies-**

(30 Hrs)

MODULE-2 **Accounts of public utility undertakings-double account system-accounts of electricity concerns-computation of reasonable return and clear profit-replacement of asset.**

(20 Hrs)

MODULE-3 **Liquidation accounts-statement of affairs-deficiency accounts-liquidators final statement of accounts.**

(15 Hrs)

MODULE-4 **Accounting for specialized type of business-voyage accounts-farm account-accounts of underwriters.**

(15 Hrs)

MODULE-5 **Green accounting-meaning-scope and importance-green accounting concepts-advantages and limitations**

(10 Hrs)

REFERENCE BOOKS

1. ***Financial accounting, Nirmal gupta, Ane books private limited.***
2. ***Advanced Financial Accounting, M.C.Shukla & T.S.Grewal, S.Chand & Co;***
3. ***Advanced accountancy, Arulanandam & Raman, Himalaya Publishing House.***
4. ***Fundamentals of Financial accounting, Nassem Ahmed, Ane books Pvt, Limited***
5. ***Advanced Financial Accounting, R.L.Gupta & Radhaswami, Sultan Chand CO;***
6. ***Advanced Financial Accounting, S.N.Maheswari***
7. ***Advanced Financial Accounting, Paul & Kaur***
8. ***Advanced Financial Accounting, B.D. Agarwal***
9. ***Advanced Financial Accounting, S.P.Jain & K.L.Narang; Kalyani Publishers***

SEMESTER II **Credit-4**
Code: HR02C07 **Hrs 90**

HUMAN RESOURCE MANAGEEMNT

Objectives

- ***To help the students to understand the human resource functions in an organization.***

MODULE-1 **Human resource management –introduction-nature-features-scope-objectives-importance-functions-managerial and operative functions-personal management Vs human resource management-qualification and qualities of human resource manager-evolution and growth of HRM in india-**

(15 Hrs)

MODULE-2 **Human resource planning-concept-objectives and importance-process-limitations-job analysis.**

Recruitment-concept-sources-methods and techniques of man power recruitment-characteristics of a good recruitment policy-principles of recruitment-factors affecting recruitment.

Selection-concept and procedures-placement and induction.

(20 Hrs)

MODULE-3 **HRD-concept-objectives-needs-significance-principles of HRD, qualities of an HRD manager.**

(15 Hrs)

MODULE-4 **Motivation-meaning-objective-types of motivation-management techniques to improve motivation-employee morale and productivity-nature and significance of morale-factors influencing morale-concepts and significance of productivity-factors influencing productivity.**

Performance appraisal- meaning –purpose-all methods of performance appraisal.

(20 Hrs)

MODULE-5 **Leadership styles-theories of leadership styles-managerial grid-contingency theory-theory X and Y-situational theory-path goal theory-leader participation model-leader member exchange theory-3 D model of leadership-lickert's four system of management-charismatic leadership theory-transformational leadership theory-social learning approach.**

(20 Hrs)

REFERENCE BOOKS

1. ***Fundamentals of HRM, Rajib Lochan Dhar, Macmillain India limited***
2. ***HRM, Seema Sanghi, Macmillain India limited***
3. ***Text book of HRM, Memoria, Himalaya Publishing House***
4. ***Personal & HRM, Subbarao, Himalaya Publishing House***
5. ***HRM, Naik, Ane books private limited.***
6. ***HRM, Gupta.***
7. ***HRM, Fisher.***
8. ***Advanced HRM, S.C.Gupta, Ane books private limited.***
9. ***HRM, Bratton, Palgrave Macmillian.***
10. ***HRM, CB.Gupta.***
11. ***HRM, Subbarao.***
12. ***HRM, L.M.Prasad***

SEMESTER III **Credit-4**

Code: CG03C14 **Hrs 90**

CORPORATE GOVERNANCE

Objectives

- ***To understand the importance of corporate governance***

MODULE-1 **corporate governance-meaning-imporatnce-principles-objectives-constituents- benefits of corporate governance-history and growth of corporate governance in India-stake holders and corporate governance.**

(15 Hrs)

MODULE-2 **corporate governance and mandatory and non mandatory requirements-board of directors-independent directors-audit committee-subsidiary companies- disclosures-CEO/CFO certification-corporate governance report-**

(20 Hrs)

MODULE-3 **corporate excellence- role of chairman in corporate governance-organisational culture-managing cultural diversity in organization.**

(15 Hrs)

MODULE-4 **Business ethics-ethics and values-the new management philosophy-ethics in business functional areas-integrity-sales-HRM-management of quality-organizational culture**

(25 Hrs)

MODULE-5 **Building corporate image-meaning and importance-steps in building corporate image-knowledge workers and knowledge management - Knowledge economy-business**

ethics-protection of employees-QWL- worklife balance.

(15 Hrs)

REFERENCE BOOKS

1. ***Corporate governance and business ethics, U.C.Mathur, Macmillain India limited.***
2. ***Corporate governance, Machiraju, Himalaya Publishing House.***
3. ***Corporate Governance, Monks.***
4. ***Corporate Governance: Principles, Mechanisms & Practice, Parthasarathy.***
5. ***Corporate governance and Business Ethics and CSR, J.P.Sarmma, Ane books private limited.***

SEMESTER 111 **Credit-4**
Code: BE03C15 **Hrs 90**

BUSINESS ENVIRONMENT

Objectives

- ***To understand the impact of environment in business***

MODULE-1 **Nature and scope of business environment-meaning, concepts, objectives of business-micro and macro environment-uses of environmental study-relationship between business and its environment.**

(15 Hrs)

MODULE-2 **Economic environment-economic system-merits and demerits-features of economic system.**

(10 Hrs)

MODULE-3 **Political and legal environment-classification of political system-political risk-causes-types-relationship between business and government-responsibilities of business towards government-responsibilities of government towards business-kinds of legal system.**

(20 Hrs)

MODULE-4 social and cultural environment-natural environment-elements of culture-global and natural culture-social responsibilities of business- CSR-nature-models-strategies-arguments for and against social responsibility, Natural environment-Environment management- objectives-impact on business.

(30 Hrs)

MODULE-5 **Environmental management-sustainable development-Environmental impact assessment and its relevance-Environmental ethics-EIA inputs to project life cycle- environmental accounting-assessing the components of environmental costs.**

(15 Hrs)

REFERENCE BOOKS

1. ***Business Environment, Elsevier, Ane books private limited.***
2. ***Business environment, Fransis Cherunilam, Himalaya Publishing House***
3. ***Environmental management, Behera, Himalaya Publishing House***
4. ***Environmental management, Jadhav, Himalaya Publishing House***
5. ***Essentials of business environment, Aswathappa, Himalaya Publishing House.***
6. **Bussiness Environment , Rosy Joshi & Sangam Kapoor; Kalyani Publishers**

MAHATMA GANDHI UNIVERSITY, KERALA

Abstract

Ph.D. Programme - Directive of the UGC to include Research and Publication Ethics (RPE) to Course Work and Recommendations of the University Research Commitee - Approved - Orders issued.

ACADEMIC A 10 SECTION

No. 1299/AC A 10/2020/MGU Priyadarsini Hills,Dated: 06.03.2020

Read:-(1) D. O. Letter No. F.1-1/2018(Journal/CARE) Dated December 2019.

(2) Item No. OA 4 of the Minutes of the meeting of the University Research Committee held on 20.01.2020.

ORDER

The University Grants Commission, vide the letter read as (1)above, informed that its 543rd meeting held on 9th August 2019 approved two Credit Courses for awareness about publication ethics and publication misconducts entitled "Research and Publication Ethics (RPE)" to be made compulsory for all Ph.D. students for Pre- Registration Course Work undertaken in Universities from the forthcoming academic session.

The University Research Committee held on 20-01-2020 considered the matter and resolved, vide the minutes read as (2) above, to recommend to

- **include the course,"Research and Publication Ethics (RPE)" to the Course Work Programme, from 2019 Admission onwards, as Course IV, as detailed below. conduct**
- **University level Workshops or encourage students to participate in online course in this regard.**
- **permit scholars who had been granted registration under part time mode, to undergo Course Work Programme in two spells (Course I and Course II in the first spell, Course III and Course IV in the second spell).**

Details of Course IV:- COURSE TITLE

- **Research and Publication Ethics (RPE)**

COURSE LEVEL

- 2 credit course (30 Hrs.)

ELIGIBILITY

- M.Phil, Ph.D. students and interested faculty members (It will be made available to post-graduate students at later date)

FEES

- As per University Rules

FACULTY

- Interdisciplinary Studies

QUALIFICATION OF FACULTY MEMBERS OF THE COURSE

- Ph.D. in relevant subject areas having more than 10 years' of teaching experience

COURSE CODE

- CPE-RPE

OVERVIEW

- This course has total 6 units focusing on basics of Philosophy of science and ethics, research integrity, publication ethics. Hands on sessions are designed to identify research misconduct and predatory publications. Indexing and citation databases, open access publications, research metrics (citations, h-index, Impact Factor, etc.) and plagiarism tools will be introduced in this course.

Pedagogy:

- Class room teaching, Guest Lecturers, group discussions and practical sessions.

Evaluation

- Continuous assessment will be done through tutorials, assignments, quizzes and group discussions. Weightage will be given for active participation. Final written examination will be conducted at the end of the course.

Course Structure

- The course comprises of six modules listed in table below. Each module has 4-5 units.

Modules	Unit Title	Teaching Hours
Theory		
RPE 01	Philosophy and Ethics	4
RPE 02	Scientific Conduct	4
RPE 03	Publication Ethics	7
Practice		
RPE 04	Open Access Publishing	4
RPE 05	Publication Misconduct	4
RPE 06	Database and Research Metrics	7
	Total	**30**

SYLLABUS IN DETAIL

Theory

- **RPE 01: PHILOSOPHY AND ETHICS (3hrs)**

1. Introduction to Philosophy: definition, nature and scope, concept, branches
2. Ethics: Definition, moral philosophy, nature of moral judgements and reactions.

- **RPE 02: SCIENTIFIC CONDUCT (5hrs.)**

1. Ethics with respect to science and research
2. Intellectual honesty and research integrity
3. Scientific misconducts: Falsification, Fabrication and Plagiarism (FFP)
4. Redundant publications: duplicate and overlapping publications, salami slicing
5. Selective reporting and misrepresentation of data

- **RPE 03: PUBLICATION ETHICS (7 hrs.)**

1. Publication ethics: definition, introduction and importance
2. Best practices/standards setting initiatives and guidelines: COPE, WAME etc.
3. Conflicts of interest
4. Publication misconduct: Definition, concept, problems that lead to unethical behavior and vice versa, types
5. Violation of publication ethics, authorship and contributorship

6. Identification of publication misconduct, complaints and appeals
7. Predatory publishers and journals

Practice

- **RPE 04: OPEN ACCESS PUBLISHING (4hrs.)**

1. Open access publications and initiatives
2. SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies
3. Software tool to identify predatory publications developed by SPPU
4. Journal finder/journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester, etc.

- **RPE05: PUBLICATION MISCONDUCT (4 hrs.)**

A. Group Discussions (2 hrs.)

1. Subject specific ethical issues, FFP, authorship
2. Conflicts of interest
3. Complaints and appeals: examples and fraud from India and abroad

B. Software tools (2 hrs.)

1. Use of plagiarism software like Turnitin, Urkund and other open source software tools

- **RPE 06: DATABASES AND RESEARCH METRICS (7 hrs.)**

A. Databases (4hrs.)

1. Indexing databases
2. Citation databases: Web of Science, Scopus etc.

B. Research Metrics (3hrs.)

1. Impact factor of journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score
2. Metrics: h-index, g index,i10 index, altmetrics

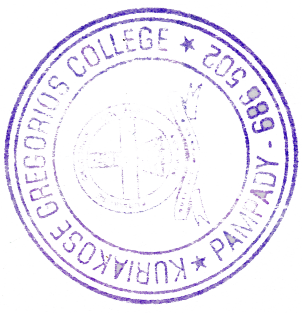
The above said recommendations of the University Research Commitee, vide the minutes read as (2) above, have been approved by the Vice-Chancellor, by exercising powers of the Academic Council, under Section 3.10(17) of Mahatma Gandhi University Act 1985.

Orders are issued accordingly.

SURESHBABU K

ASSISTANT REGISTRAR IV (ACADEMIC)

For REGISTRAR



MAHATMA GANDHI UNIVERSITY
KOTTAYAM- KERALA STATE-INDIA
CHOICE BASED CREDIT
SEMESTER SYSTEM AND GRADING
SYLLABI

For

Undergraduate Programme

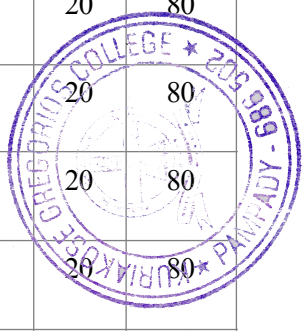
In

ECONOMICS

Mahatma Gandhi University
Kottayam

B.A. Economics Programme– Model - I
Core, Complementary, Open and Choice-Based Courses

Sem.	Core Papers	Course Code	Exam	T.H*	Cr.*	Total marks - 100	
						Int.*	Ext.*
S1	Perspectives and Methodology of Economics	EC1CRT01	S1	6	4	20	80
	Complementary 1	EC1CMT01	S1	6	4	20	80
S2	Core 2- Micro Economic Analysis 1	EC2CRT02	S2	6	5	20	80
	Complementary 2	EC2CMT02	S2	6	4	20	80
S3	Core 3- Micro Economic Analysis- II	EC3CRT03	S3	4	4	20	80
	Core 4-Economics of Growth & Development	EC3CRT04	S3	5	4	20	80
	Complementary 3	EC3CMT01	S3	6	4	20	80
S4	Core 5-Macro Economics-I	EC4CRT05	S4	5	4	20	80
	Core 6-Public Economics	EC4CRT06	S4	4	4	20	80
	Complementary4	EC4CMT02	S4	6	4	20	80
S5	Core 7-Quantitative Techniques	EC5CRT07	S5	6	4	20	80
	Core 8-Macro Economics-II	EC5CRT08	S5	6	5	20	80
	Open course	EC5OPT01/2/3	S5	4	3	20	80
	Core9-Enviornmental Economics	EC5CRT09	S5	5	4	20	80
	Core10- Introductory Econometrics	EC5CRT10	S5	4	4	20	80
S6	Core 11 –Quantitative Methods	EC6CRT11	S6	6	4	20	80
	Core 12-International Economics	EC6CRT12	S6	5	4	20	80
	Choice based Elective	EC6CBT1/2/3	S6	4	3	20	80
	Core-13 Money & Financial markets	EC6CRT13	S6	5	4	20	80
	Core-14 Indian Economy	EC6CRT14	S6	5	4	20	80



	Project	EC6PR01			2	20	80

Broad Title of Courses *T.H- Teaching Hours per week, Cr.-Credits, Int.-Internal Evaluation and Ext.-External Examination

Semester 3				
Core Course No	**Course Code**	**Course Title**	**No. of Credit**	**No. of Teaching Hours**
4	**EC3CRT04**	**Economics Of Growth & Development**	**4**	**90**

Learning Objectives

This course enables the student to acquaint with the basic concepts and issues of growth and development from Adam Smith. It makes a student more insightful about the modern approaches to development presented by D Goulet and Amartya Sen.

Module I: Introduction to Economics of Growth and Development

Growth and Development – meaning – features – distinction – determinants and indicators – features of underdevelopment – measurement of development - income and non-income indices – GDP, PCI, PQLI, HDI, HPI, GEM – (GDI, GNH) – Development redefined – Development as a total social process – Development as freedom – Development as Liberation – Sen's capability approach – poverty as capability and Entitlement failure – multidimensional poverty index – Quality of life – Education – Health and Nutrition – poverty – absolute and relative – inequality of income and wealth – Gini coefficient – Kuznet's inverted 'U'- Hypothesis – Development gap (22hrs)

Module II: Approaches to Development

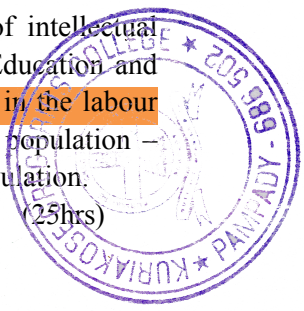
Approaches to Economic Development: Structuralist – dependency - market- friendly approaches (concepts only) – vicious circle of poverty – Stage theories Rostow – low level equilibrium trap – Critical minimum effort thesis – Big push – Lewis model – balanced vs unbalanced growth strategy – Dualistic theories. (23hrs)

Module III: Theories and Factors in the Development Process

Classical – Marxian – Schumpeterian. Economic Development – role of agriculture – capital – technology – choice of technique - Trade and economic development – process of cumulative causation. (20 hrs)

Module IV: Human Resource and Development

Human Resource and Development – man power planning – concept of intellectual capital and its size – role of education and health in economic development – Education and health as joint investment for development – Gender and development – women in the labour force – missing women population and economic growth – optimum theory of population – theory of demographic transition – ageing and younging of population. (25hrs)



References

1. Thirlwall, Growth and Development with Special Reference to Developing Countries. Palgrave McMillian, New Delhi.
2. Benjamin Higgins(1968), Economic Development, Universal Book Stall, New Delhi.
3. Meier G.M. (2007) Leading Issues in Economic Development, Oxford University Press, New Delhi.
4. Todaro and Smith, Economic Development, Pearson Education, New Delhi.
5. Debraj Ray, Development Economics. Oxford University Press, New Delhi.
6. Felix Raj and et. al, Contemporary Development Economics, New Central Book Agency (p) Ltd.

Semester 4				
Core Course No	**Course Code**	**Course Title**	**No. of Credit**	**No. of Teaching Hours**
6	**EC4CRT06**	**Public Economics**	**4**	**72**

Learning Objectives

Public finance analyzes the impact of public policy on the allocation of resources and the distribution of income in the economy. In modern times, the activities of State have considerably increased and the theoretical understanding of different State activities through the budgetary mechanism is essential. The objective of the course is for students to learn about the working of the public finance system and to gain knowledge about the working of the Indian public finance.

Module I- Introduction to Public Finance

Meaning and subject matter of Public Finance – Public and Private Finance – Fiscal Functions-Allocation, distribution and stabilization- Principles of Maximum Social Advantage: Dalton, Musgrave – Public Goods: Pure and Impure Public Goods, Free rider problem. Private Goods, Mixed Goods and Merit Goods, -Market failure and role of government. (14 Hrs)

Module II- Public Revenue

Sources of public revenue -Classification of Taxes - Canons of Taxation, Principles of Taxation- Ability, Benefit and cost of service- Impact, Incidence and shifting of Tax Burden – – Effects of Taxation – Measurement of Deadweight loss -Taxable Capacity- Laffer curve- Major Taxes in India and its impact- Value Added Tax in India –Goods and Service Tax (GST-brief history, legislation and impact)- Budget and its role– Classification of budget

Concepts :Revenue Account, Capital Account, Fiscal Deficit, Revenue Deficit, Primary Deficit,– Zero Base Budgeting-Budgetary Procedure in India (introduce the recent Central Budget to the students)- Gender Budgeting-Fiscal Policy –Deficit financing (22 Hrs)

Module III- Public Expenditure

Meaning— Canon's of Public Expenditure-Plan and Non-plan Expenditure-Developmental and Non-developmental expenditure- Wagner's Hypothesis, Peacock - Wiseman Hypothesis, critical limit hypothesis– Effects of Public Expenditure- Public expenditure in India: Its pattern and growth -Public Debt- Types- debt redemption –burden of public debt – public debt in India (18 Hrs)

Module IV- Federal Finance

Meaning – Principles of Federal Finance- vertical and horizontal equity in fiscal federalism - fiscal federalism in India – Finance commission – Current Finance Commission- Theory of grants – resource transfer from union to states – criteria for transfer of resources – State Finance Commission and Panchayati Raj institutions.

(18 Hrs)

References

1. Musgrave, R.A. and P.B. Musgrave. (1989). *Public finance in theory and practice*. Mc-Graw Hill.
2. John Cullis, Philip Jones. *Public finance and public choice*. (1st edition). New Delhi: Oxford University Press.
3. Stiglitz, Joseph E. (Third edition). *Economics of public sector*. New York: Norton.
4. Harbar, Bernard. P. (Fifth edition). *Modern public finance*. Richard Irvin Inc.
5. Bagchi, Amaresh (ed.). *Readings in public finance*. New Delhi: Oxford University Press.
6. Ulbrich, Holley H. *Public Finance in Theory and Practice.* Thomson South-Western.
7. Singh.S.K. (Ninth edition) *Public Finance in Theory and Practice*. New Delhi: S Chand Publications.
8. Dalton. H. (eleventh edition). *Principles of Public finance.* Routledge Library Editions.
9. Taylor, Philip E. *Economics of public finance*. MacMillan.
10. Bhatia. H.L. (twenty-sixth edition). *Public finance*. New Delhi: Vikas Publishing House Pvt. Ltd.
11. Gupta, Janak. (2nd Revised & Enlarged edition). *Public economics in India: Theory and practice*. Atlantic.

Semester 5				
Core Course No	**Course Code**	**Course Title**	**No. of Credit**	**No. of Teaching Hours**
09	**EC5CRT09**	**Environmental Economics**	**4**	**90**

Learning objectives :

The importance of environmental science and environmental studies cannot be disputed. The need for sustainable development is a key to the future of mankind. Continuing problems of pollution, loss of forget, solid waste disposal, degradation of environment, issues like economic productivity and national security, Global warming, the depletion of ozone layer and loss of biodiversity have made everyone aware of environmental issues. The United Nations Coference on Environment and Development held in Rio de Janerio in 1992 and world Summit on Sustainable Development at Johannesburg in 2002 have drawn the attention of people around the globe to the deteriorating condition of our environment. It is clear that no citizen of the earth can afford to be ignorant of environment issues. Environmental management has captured the attention of health care managers. Managing environmental hazards has become very important.

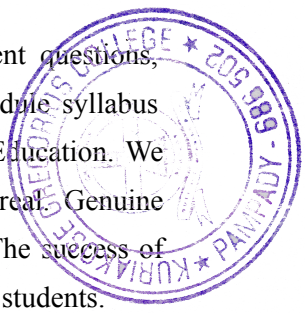
Human beings have been interested in ecology since the beginning of civilization. Even our ancient scriptures have emphasized about practices and values of environmental conservation. It is now even more critical than ever before for mankind as a whole to have a clear understanding of environmental concerns and to follow sustainable development practices.

India is rich in biodiversity which provides various resources for people. It is also basis for biotechnology.

Only about 1.7 million living organisms have been described and named globally. Still many more remain to be identified and described. Attempts are made to II conserve them in ex-situ and in-situ situations. Intellectual property rights (IPRs) have become important in a biodiversity-rich country like India to protect microbes, plants and animals that have useful genetic properties. Destruction of habitats, over-use of energy resource and environmental pollution have been found to be responsible for the loss of a large number of life-forms. It is feared that a large proportion of life on earth may get wiped out in the near future.

Inspite of the deteriorating status of the environment, study of environment have so far not received adequate attention in our academic programmes. Recognizing this, the Hon'ble Supreme Court directed the UGC to introduce a basic course on environment at every level in college education. Accordingly, the matter was considered by UGC and it was decided that a six months compulsory core module course in environmental studies may be prepared and compulsorily implemented in all the University/Colleges of India.

The experts committee appointed by the UGC has looked into all the pertinent questions, issues and other relevant matters. This was followed by framing of the core module syllabus for environmental studies for undergraduate courses of all branches of Higher Education. We are deeply conscious that there are bound to be gaps between the ideal and real. Genuine endeavour is required to minimize the gaps by intellectual and material inputs. The success of this course will depend on the initiative and drive of the teachers and the receptive students.



Module I Unit 1 : Multidisciplinary nature of environmental studies

Definition, scope and importance (2 hrs)

Need for public awareness.

Unit 2 : Natural Resources :

Renewable and non-renewable resources : Natural resources and associated problems.

a) Forest resources : Use and over-exploitation, deforestation, case studies.

Timber extraction, mining, dams and their effects on forest and tribal people.

b) Water resources : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.

c) Mineral resources : Use and exploitation, environmental effects of extracting and using mineral resources, case studies.

d) Food resources : World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertiliser-pesticide problems, water logging, salinity, case studies.

e) Energy resources: Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources, Case studies.

f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification

- Role of individual in conservation of natural resources.
- Equitable use of resources for sustainable lifestyles. (10 hrs)

Unit 3: Ecosystems

- Concept of an ecosystem
- Structure and function of an ecosystem
- Producers, consumers and decomposers
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids.
- Introduction, types, characteristic features, structure and function of the given ecosystem:-
  a. Forest ecosystem

ModuleII Unit 1: Biodiversity and its conservation

- Introduction
- Biogeographical classification of India

(6 hrs)

- Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values.
- India as a mega-diversity nation
- Hot-sports of biodiversity
- Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts
- Endangered and endemic species of India

(8 hrs)

Unit 2: Environmental Pollution

Definition

Causes, effects and control measures of: -

a. Air pollution
b. Water pollution
c. Soil pollution
d. Marine pollution
e. Noise pollution
f. Thermal pollution
g. Nuclear hazards

- Solid waste Management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution
- Pollution case studies
- Disaster management: floods, earthquake, cyclone and landslides.

(8 hrs)

Unit 3: Social Issues and the Environment

- Urban problems related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people: its problems and concerns, Case studies
- Environmental ethics: Issues and possible solutions
- Climate change, global warming, acid rain, ozone layer depletion , nuclear accidents and holocaust, Case studies
- Consumerism and waste products

- Environment Protection Act
- Air (Prevention and Control of Pollution) Act
- Water (Prevention and control of Pollution) Act
- Wildlife Protection Act
- Forest Conservation Act
- Issues involved in enforcement of environmental legislation
- Public awareness (10 hrs)

Module – III Unit I: Economics and Environment

Environmental Economics – Definition – Scope – Meaning – importance – Environment-Economy interaction (linkages) – material balance model – ecosystem – structure and functions – relation between environment and development – Environment as a necessity and luxury-environmental issues and global concern-Stockholm Conference – Helsinki Convention – Montreal Protocol – Kyoto Protocol – Rio Summit – Paris Convention. Population growth and Environment – market failure – tragedy of commons-sustainable development-policy approach to sustainable development(An overview only). (16hrs)

Module IV Unit 1: Framework and Criteria for Environmental Analysis

Evaluation of environmental benefits – Contingent Valuation Method – Hedonic approach – travel cost method – preventive expenditure method - surrogate market approach – property value approach and wage differential approach - cost benefit analysis – UNIDO analysis – Little- Mirrlees approach - Environmental Impact Analysis. Pollution control – socially optimum level of pollution – environmental policies and legislations in India. (18hrs)

Module – V Unit 1- Human Rights– An Introduction to Human Rights, Meaning, concept and development, Three Generations of Human Rights (Civil and Political Rights; Economic, Social and Cultural Rights).

Unit-2 Human Rights and United Nations – contributions, main human rights related organs - UNESCO,UNICEF, WHO, ILO, Declarations for women and children, Universal Declaration of Human Rights.

Human Rights in India – Fundamental rights and Indian Constitution, Rights for children and women, Scheduled Castes, Scheduled Tribes, Other Backward Castes and Minorities

Unit-3 Human Rights and environmental rights - Right to Clean Environment and Public Safety: Issues of Industrial Pollution, Prevention, Rehabilitation and Safety Aspect of New Technologies such as Chemical and Nuclear Technologies, Issues of Waste Disposal, Protection of Environment

Conservation of natural resources and human rights: Reports, Case studies and policy formulation. Conservation issues of western ghats- mention Gadgil committee

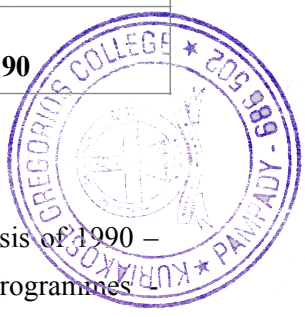
report, Kasthurirangan report. Over exploitation of ground water resources, marine fisheries, sand mining etc. (12Hrs)

Reference

1. Agarwal,K.C 2001 Environmental Biology, Nidi Publ. Ltd, Bikaner.
2. Bharucha Erach, Text Book of Environmental Studies for undergraduate Courses. University Press, IInd Edition 2013 (TB)
3. Brunner.R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc.480p
4. Clark.R.S., Marine Pollution, Clanderson Press Oxford (TB)
5. Cunningham, W.P.Cooper, T.H.Gorhani, E & Hepworth, M.T.2001. Environmental Encyclopedia, Jaico Publ. House. Mumbai. 1196p
6. Dc A.K.Enviornmental Chemistry, Wiley Eastern Ltd.
7. Down to Earth, Centre for Science and Environment (R)
8. Gleick, 11.P.1993 Water in crisis, Pacific Institute for Studies in Dev. Environment & Security. Stockholm Environment Institute Oxford University Press 473p
9. Hawkins R.E, Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay (R)
10. Heywood, V.H & Watson, R.T. 1995. Global Biodiversity Assessment, Cambridge University Press 1140p
11. Jadhav.H & Bhosale.V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284p
12. Mekinney, M.L & Schock.R.M. 1996 Environmental Science Systems & Solutions. Web enhanced edition 639p
13. Mhaskar A.K., Matier Hazardous, Techno-Science Publications (TB)
14. Miller T.G. Jr., Environmental Science, Wadsworth Publishing Co. (TB)
15. Odum.E.P 1971. Fundamentals of Ecology. W.B. Saunders Co. USA 574p
16. Rao.M.N & Datta.A.K. 1987 Waste Water treatment Oxford & IBII Publication Co.Pvt.Ltd.345p
17. Sharma B.K., 2001. Environmental Chemistry. Geol Publ. House, Meerut
18. Survey of the Environment, The Hindu (M)
19. Townsend C., Harper J, and Michael Begon, Essentials of Ecology, Blackwell Science (TB) XI
20. Trivedi R.K., Handbook of Environmental Laws, Rules Guidelines, Compliances and Stadards, Vol I and II, Enviro Media (R)
21. u) Trivedi R. K. and P.K. Goel, Introduction to air pollution, Techno-Science Publication (TB)
22. Wanger K.D., 1998 Environmental Management. W.B. Saunders Co. Philadelphia, USA 499p
23. (M) Magazine (R) Reference (TB) Textbook

24. Rabindra N Bhattacharya. (2007). Environmental Economis an Indian Perspective. Oxford University Press.
25. Charls D. Kolstad.(2007). Environmental Economics. New Delhi:OUP.
26. Ramaprasad Senguptha. (2009). Ecology and Economics. New Delhi: OUP.
27. Janet Thomas.(2009). Environmental Economics. New Delhi: Cenage Learning.
28. S.P. Mirsa, S.N. Pandey (2008). Essential Environmental Studies. New Delhi: Ane Books.
29. Katar Singh and Shishodia. (2007) Environmental Economics- Theory and application. New Delhi: Sage publication.
30. Tom Tietenberg. (2004). Environmental and Natural Resource Economics. Pearson Education.
31. Karpagam . M. (2008). Environmental Economics. New Delhi: Sterling Publishers.
32. R.K. Lekhi et al. (2008). Developmental and Environmental Economics. Ludhiana: Kalyani publishers.
33. Ulaganathan Sankar. (2009) Environmental Economics. New Delhi: OUP.
34. N. Das Gupha (1997). Environmental Accounting. Wheeler and Co New Delhi.
35. Thomas and Callan (2007). Environmental Economics. Thomas South-Western.
36. Paul Ackin .(2000) Economic Growth and Environmental sustainability, Routledge, London.
37. Nick Hanley. (2009) Environmental Economics in Theory and Practice. Palgrave Macmillian, New York.
38. Fisher A.C. (1981). Resource and Environmental Economics. Cambridge University Press, Cambridge.
39. Baumol. (1988). Theory of Environmental Policy (second edition). Cambridge University Press, Cambridge
40. PrasannaChandra:Projects-Planning,Analysis,Financing,Implementation&Review.(5th edition)TataMcGraw Hill.
41. PR Trivedi.(2014)Environmental Impact Assessment.APH Publishing Corporation.
42. Erach Baraucha (2014) Test book of Environmental studies, Orient Black Swann.

Semester 6				
Core Course No	**Course Code**	**Course Title**	**No. of Credit**	**No. of Teaching Hours**
14	**EC6CRT14**	**Indian Economy**	**4**	**90**



Module I: Economic Development Strategy since Independence

Mixed Economic Framework - Key and Strategic Role of PSUs – Economic Crisis of 1990 – Macro Economic Reforms Implemented Since 1991-Structural Adjustment Programmes – Globalisation, Liberalisation and Privatisation –Performance of Indian Economy before and

after Economic Reforms -External Sector Reforms since 1991 - Trade and Currency Reforms, - foreign capital - FDI, portfolio investments and MNCs (25hrs)

Module II- Demographic Features-

Population–size, structure (sex and age) – characteristics – population change – rural–urban migrations, occupational distribution, problems of over population, population dividend, population policy, Gender inequality, women empowerment. (15hrs)

Module III: Agriculture, Industry and Service Sector

Role of Agriculture in Indian Economy-Land Reforms-New Agricultural Strategy - Green Revolution — Need for Second Green Revolution - Agricultural Growth and Performance - New Agricultural Policy – Changes in Land use and Cropping Pattern-Agricultural Finance and Issues - Agriculture during Economic Reform Period - WTO and Indian Agriculture. Industrial growth during pre reform and post reform period-Industrial Policy Resolution of 1956 and 1991 - Role of Micro, Small and Medium Scale Industries (MSMEs) in Indian Economy Its problems and remedies- Role and Performance of Service sector in Indian Economy. (20 hrs)

Module IV: Economic Planning and Development Issues

Meaning and rationale of Planning-Basic Strategies, Objectives and Achievements of Planning in India-Strategies of 12th Plan, Inclusive Development-NITI Aayog - Trends in India's National Income – Magnitude of poverty and inequality in India - unemployment, black money and corruption – rising prices - energy crisis – Micro finance and its significance – importance of infrastructure in India's economic development. (15hrs)

Module V: Kerala Economy

Features, Kerala model of development - Structural change and economic growth in Kerala - Land reforms - current issues in agriculture – food crisis – changes in cropping pattern – agricultural indebtedness – unemployment - IT sector in Kerala - fiscal crisis in Kerala, Gulf migration, energy policy and energy crisis, decentralized planning in Kerala.

(15hrs)

Readings

1. Misra and Puri (recent edition), Indian Economy, Himalaya Publishing House, Mumabai.

2.Gaurav Datt & Ashwani Mahajan (recent Edition), Datt & Sundharam Indian Economy, S. Chand & Co., New Delhi

3. Meera Bai M. (ed) (2008), Kerala Economy, Serials Publication, New Delhi.

4. Prakash B A (2004) Kerala's Economic Development, Sage Publications, New Delhi

5. George K K (1993) Limits to Kerala Model of Developemnt, CDS, Trivandram

6. B A Prakash (2009), The Indian Economy since 1991: Economic reforms and performance , Pearson Education.

7. Sunil Mani et al. (ed) (2006), Kerala's Economy : Crouching Tiger, Sacred Cows, D C Books, Kottayam

8. State Planning Board, Economics Review , Government of Kerala, Thiruvananthapuram (latest issue)

9. Pulapre Balakrishnan (ed) (2011) Economic Reforms and Growth in India, Orient Black Swann.

10. Y V Reddy (2011) Global crisis, Recession and Uneven Recovery, Orient Black Swann.

BA ECONOMICS

COMPLEMENTARY COURSES : HISTORY & POLITICAL SCIENCE

SEMESTER 2 COMPLEMENTARY PAPER- HISTORY

HY2CMT03 - TRANSITION TO THE CONTEMPORARY WORLD

This course explains the trials and turbulences and transition that the world had experienced over the years and analyses the problems of the present day world developments.

Module-1 Implications of French Revolution - Continental impact and reactions - Metternich and Congress of Vienna - German & Italian Unification

Module-2 Imperialism-Theories of Imperialism, Inter- Imperialist Rivalry and the two World Wars. Rise of Fascism and Nazism in Europe. Russian Revolution of 1917-Lenin and Stalin - Spread of Communist Ideology - New Economic Policy . The Soviet Union an its fortunes. The spread of Communism in East Europe. The Chinese Revolution of 1948- Interpretation, Impact and Consequences.

Module-3 The Great Depression in 1929-33.Post-depression economic political order Globalization and its instruments - Development vs. Sustainable Development debate.

Module-4 Emergence of Anti-Colonial Movements in Asia and Africa .World Bodies-League of Nations UNO - NAM and other Regional Groupings. Growth of Mass Media and Information Technology – Terrorism

SEMESTER 3 COMPLEMENTARY PAPER- POLITICAL SCIENCE

AN INTRODUCTION TO POLITICAL SCIENCE

Module I

i. Political Science: Definition, Nature & Scope of the Discipline. ii. Approaches to the study of Political Science: Traditional, Behavioural, Post- Behavioural and Marxian approaches (20 Hours)

Module II: Essential Concept in Political Science. i. State-Concept-Origin of State-Evolutionary Theory.

ii. State in a Globalised Era. iii. Key Concepts in Political Science: Liberty - Positive and Negative, Equality – Formal and Political, Law - Rule of Law, Justice-Distributive Justice. (30 Hours)

Module III: Major Political Ideologies.

i. Liberalism. ii. Gandhism. iii. Marxism. iv. Fascism. (20 Hours)

Module IV: Democracy and Classification of Government.

i. Democracy: Liberal, Deliberative and Representative. ii. Forms of Government: Parliamentary & Presidential, Federal & Unitary. (20 Hours)

SEMESTER 4

RIGHTS AND HUMAN RIGHTS IN INDIA

Course Rationale: The purpose of the course is to inculcate a comprehensive knowledge of the concept of Human Rights. For that, the course provides a better understanding of the origin, evolution of rights and various steps taken by the national and international agencies for the protection and promotion of the Human Rights. This course also aims at comprehensive knowledge of the concept in the Indian context through dealing with various Human Rights movements. Some of the debates prompt us to consider that there is no settled way of understanding concepts and that in the light of new insights and challenges which help the students for the better understanding of Human Rights.

Module I i. Meaning of Human Rights. ii. Evolution of Human Rights. iii. Approaches to Human Rights.(25 Hours)

Module II i. The International Covenants on Human Rights. ii. The UDHR, the International Covenant on Civil. iii. Economic and Political Rights. iv. International Covenants on Women Children and Minorities. (20 Hours)

Module III i. Human Rights in India. ii. Constitutional provisions; Fundamental Rights; Directive principles of State Policy. iii. Public Interest Litigation; Right to information Act; Protection of Civil Rights Act; iv. National/State Human Rights Commissions. (25 Hours)

Module IV i. Human Rights protection movements. ii. Amnesty International/ Human Rights Watch/People's Union for Civil Liberties. iii. Human Rights and Dalits. (20 Hours)

SEMESTER 5

OPEN COURSE OFFERED BY DEPT OF POLITICAL SCIENCE

HUMAN RIGHTS IN INDIA

Course Rationale: The purpose of the course is to inculcate a comprehensive knowledge of the concept of Human Rights in the Indian context. For that, the course provides structure of the Indian constitution as well as it provides a better understanding of the origin, evolution of rights and various steps taken by the national and international agencies for the protection and promotion of the Human Rights. This course also aims at comprehensive knowledge of the concept in the Indian context through dealing with various Human Rights movements .It also deals with the problems confronted by the marginalised sections in the Indian context.

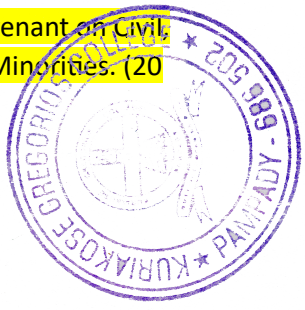
Module I

I.Meaning of Human Rights. II. Evolution of Human Rights. III. Approaches to Human Rights. (25 Hours)

Module II

I.The International Covenants on Human Rights. ii. The UDHR, the International Covenant on Civil, Economic and Poltical Rights. iii. International Covenants on Women Children and Minorities. (20 Hours)

Module III



I.Human Rights in India. II. Constitutional provisions; Fundamental Rights; Directive principles of State Policy. III. Public Interest Litigation; Right to information Act; Protection of Civil Rights Act; IV. National/State Human Rights Commissions. (25 Hours)

Module IV

i. Human Rights protection movements. ii. Amnesty International/Human Rights Watch/People's Union for Civil Liberties. iii. Human Rights and Dalits. (20 Hours)

SEMESTER 5

OPEN COURSE OFFERED BY DEPT OF HISTORY

HY5OCT01 – INTRODUCING ENVIRONMENTAL HISTORY

This course will introduce students to the dynamic field of environmental history, presenting essential concepts, concerns and methodology in the context of global / Indian environmental history.

Module 1 Basics

What is Environmental history? - Political, material and cultural dimensions of environmental history- Interdisciplinary approaches – Ecology and environment- cultural ecology environmentalism- deep ecology- planetary consciousness- UN and environment- Stockholm Declaration- Earth Summits- Climate change and protocols

MODULE 2 Roots of Environmental Crisis Mode of resource use- hunting gathering- nomadic pastoral- settled agriculture- industrial ecological impact

MODULE 3 The Context of Colonial India Precolonial scenario- European attitude towards environment- the European gaze- Imperial Agendas and exploitation of natural resources- deforestation-ship building-Railways-opening of plantations- world war and forests-reservation of forests and enactments-plant imperialism botanical gardens - hunting in colonial India

MODULE 4 - Environmental Movements in India Chipko Movement-Narmada Bachao Andolan-Silent Valley in Kerala- Plachimada issue-sand mining and river protection groups-voices from the margins- Women and environment.

MAHATMA GANDHI UNIVERSITY, KOTTAYAM

CURRICULUM FOR UNDER GRADUATE PROGRAMMES IN

PHYSICS

UNDER CHOICE BASED CREDIT SYSTEM (UG CBCS) 2017

2017 ADMISSIONS ONWARDS

7. CONSOLIDATED SCHEME FOR I TO VI SEMESTERS

B. Sc. Physics Programme – (Model I)

Semester	Title of the Course		Hours/week	Credits	Total hrs	Marks	
						IA	EA
1	English (Common Course I) EN1CCT01 – Fine Tune Your English		5	4	90	20	80
	English (Common Course II) EN1CCTO2 – Pearls From the Deep		4	3	72	20	80
	Second Language I		4	4	72	20	80
	PH1CRT01 - Methodology and Perspectives of Physics		2	2	36	15	60
	Complementary I: Mathematics I		4	3	72	20	80
	Complementary II	Chemistry I or Electronics I	2	2	36	15	60
		Or Statistics I (No Practical)**	4	3	72	20	80
	Core Practical I: PH2CRP01 Mechanics and Properties of Matter		2	-	36	-	-
	Complementary II Practical I (Chemistry or Electronics)		2	-	36	-	-
2	English (Common Course III) EN2CCT03 – Issues that Matter		5	4	90	20	80
	English (Common Course IV) EN2CCTO4 – Savouring the Classics		4	3	72	20	80
	Second Language II		4	4	72	20	80
	PH2CRT02 – Mechanics and Properties of Matter		2	2	36	15	60
	Complementary I: Mathematics II		4	3	72	20	80
	Complementary II:	Chemistry II or Electronics II	2	2	36	15	60
		Or Statistics II**	4	3	72	20	80
	Core Practical I: PH2CRP01 Mechanics and Properties of Matter		2	2	36	10	40
	Complementary II Practical I (Chemistry or		2	2	36	10	40

	Electronics)						
3	**English (Common Course V) EN3CCTO5 – Literature and / as Identity**		**5**	**4**	**90**	**20**	**80**
	Second Language III		**5**	**4**	**90**	**20**	**80**
	PH3CRT03 – Optics, Laser and Fiber Optics		**3**	**3**	**54**	**15**	**60**
	Complementary I: Mathematics III		**5**	**4**	**90**	**20**	**80**
	Complementary II:	**Chemistry III or Electronics III**	**3**	**3**	**54**	**15**	**60**
		Or Statistics III**	**5**	**4**	**90**	**20**	**80**
	Core Practical II: PH4CRP02 Optics and Semiconductor Physics		**2**	**-**	**36**	**-**	**-**
	Complementary II Practical II (Chemistry or Electronics)		**2**	**-**	**36**	**-**	**-**
4	**English (Common Course VI) EN4CCTO6 - Illuminations**		**5**	**4**	**90**	**20**	**80**
	Second Language IV		**5**	**4**	**90**	**20**	**80**
	PH4CRT04- Semiconductor Physics		**3**	**3**	**54**	**15**	**60**
	Complementary I: Mathematics IV		**5**	**4**	**90**	**20**	**80**
	Complementary II:	**Chemistry IV or Electronics IV**	**3**	**3**	**54**	**15**	**60**
		Or Statistics IV**	**5**	**4**	**90**	**20**	**80**
	Core Practical II: PH4CRP02 Optics and Semiconductor Physics		**2**	**2**	**36**	**10**	**40**
	Complementary II Practical II (Chemistry or Electronics)		**2**	**2**	**36**	**10**	**40**
5	**PH5CRT05 – Electricity and Electrodynamics**		**3**	**3**	**54**	**15**	**60**
	PH5CRT06 – Classical and Quantum Mechanics		**3**	**3**	**54**	**15**	**60**
	PH5CRT07 –Digital Electronics and Programming		**3**	**3**	**54**	**15**	**60**
	-		**4**	**4**	**72**	**15**	**60**
	PH5OPT0X* -Open Course		**4**	**3**	**72**	**20**	**80**
	Core Practical III: PH6CRP03 Electricity, Magnetism and Laser		**2**	**-**	**36**	**-**	**-**
	Core Practical IV: PH6CRP04 Digital Electronics		**2**	**-**	**36**	**-**	**-**
	Core Practical V: PH6CRP05 Thermal Physics, Spectroscopy and C++ programming		**2**	**-**	**36**	**-**	**-**
	Core Practical VI: PH6CRP06		**2**	**-**	**36**	**-**	**-**

	Acoustics, Photonics and Advanced Semiconductor Physics					
6	**PH6CRT09- Thermal and Statistical Physics**	**3**	**3**	**54**	**15**	**60**
	PH6CRT10 --Relativity and Spectroscopy	**4**	**3**	**72**	**15**	**60**
	PH6CRT11 – Nuclear, Particle and Astrophysics	**3**	**3**	**54**	**15**	**60**
	PH6CRT12- Solid State Physics	**4**	**3**	**72**	**15**	**60**
	PH6CBT0X *-Choice Based Course	**3**	**3**	**54**	**20**	**80**
	Core Practical III: PH6CRP03 Electricity, Magnetism and Laser	**2**	**2**	**36**	**10**	**40**
	Core Practical IV: PH6CRP04 Digital Electronics	**2**	**2**	**36**	**10**	**40**
	Core Practical V: PH6CRP05 Thermal Physics, Spectroscopy and C++ programming	**2**	**2**	**36**	**10**	**40**
	Core Practical VI: PH6CRP06 Acoustics, Photonics and Advanced Semiconductor Physics	**2**	**2**	**36**	**10**	**40**
	PH6PRO01 – Project and Industrial Visit	**-**	**1**	**-**	**20**	**80**

***- X Stands for 1, 2, 3, … depending upon Open course and Choice based course**

**** Complementary II : Statistics has only theory papers.**

Choice Based Course

Sl. No.	Paper Code	Semester	Paper Title
1	PH6CBT01	VI	IT
2	PH6CBT02	VI	Material Science
3	PH6CBT03	VI	Computational Physics
4	PH6CBT04	VI	Instrumentation
5	PH6CBT05	VI	Astronomy & Astrophysics

Semester-V

Core Course: VIII **Credit-4 (72 hours)**

Vision

The importance of environmental science and environmental studies cannot be disputed. The need for sustainable development is a key to the future of mankind. Continuing problems of pollution, solid waste disposal, degradation of environment, issues like economic productivity and national security, Global warming, the depletion of ozone layer and loss of biodiversity have made everyone aware of environmental issues. The United Nations Conference on Environment and Development held in Rio de Janerio in 1992 and World Summit on Sustainable Development at Johannesburg in 2002 have drawn the attention of people around the globe to the deteriorating condition of our environment. It is clear that no citizen of the earth can afford to be ignorant of environment issues.

India is rich in biodiversity which provides various resources for people. Only about 1.7 million living organisms have been described and named globally. Still many more remain to be identified and described. Attempts are made to conserve them in ex-situ and in-situ situations. Intellectual property rights (IPRs) have become important in a biodiversity-rich country like India to protect microbes, plants and animals that have useful genetic properties. Destruction of habitats, over-use of energy resource and environmental pollution has been found to be responsible for the loss of a large number of life-forms. It is feared that a large proportion of life on earth may get wiped out in the near future.

In spite of the deteriorating status of the environment, study of environment has so far not received adequate attention in our academic programme. Recognizing this, the Hon'ble Supreme Court directed the UGC to introduce a basic course on environment at every level in college education. Accordingly, the matter was considered by UGC and it was decided that a six months compulsory core module course in environmental studies may be prepared and compulsorily implemented in all the University/Colleges of India.

The syllabus of environmental studies includes five modules including human rights. The first two modules are purely environmental studies according to the UGC directions. The second two modules are strictly related with the core subject and fifth module is for human rights.

Objectives

- Environmental Education encourages students to research, investigate how and why things happen, and make their own decisions about complex environmental issues by developing and enhancing critical and creative thinking skills. It helps to foster a new generation of informed consumers, workers, as well as policy or decision makers.
- Environmental Education helps students to understand how their decisions and actions affect the environment, builds knowledge and skills necessary to address complex environmental issues, as well as ways we can take action to keep our environment healthy and sustainable for the future. It encourages character building, and develops positive attitudes and values.

- To develop the sense of awareness among the students about the environment and its various problems and to help the students in realizing the inter-relationship between man and environment and helps to protect the nature and natural resources.

- To help the students in acquiring the basic knowledge about environment and the social norms that provides unity with environmental characteristics and create positive attitude about the environment.

Module I (15 Hours)

Water Resources and Its Management (3 Hours)

Water resources: Use and over-utilization of surface and ground water, floods, drought, dams-benefits and problems. Water harvesting-Importance of rain water harvesting in Kerala.

Remote sensing (3 Hours)

Remote sensing-principles, spectral reflectance of earth's surface features, Remote sensing satellites and sensors, aerial photography, Applications of Remote Sensing in environmental monitoring and assessment.

Environmental Pollution (9 Hours)

Environment and human health; Environmental pollution- Primary and secondary pollutants; Air pollution- Sources, Effects and Control/Treatment methods; Acid Rain; Ozone layer depletion; Green house gases; Global warming - Climatic effects; Water pollution- Sources, Effects and Control/Treatment methods; Groundwater pollution; Marine pollution; Soil pollution; Noise pollution- Sources and measurement indices of noise pollution, Noise exposure level and standards, Noise control measures, Impact of noise on human health, ; Environmental pollution due to environmental disasters; Consumerism and waste products; E-waste-an emerging environmental threat. Disaster management: floods, earthquake, cyclone and landslides.

Module II (12 Hours)

Waste Management (8Hours)

Waste minimization and resource conservation:- Source reduction, Recycling, Value-added products; Waste minimization promotional methods- awareness generation, control methods and economic benefits; Benefits of waste minimization; Management of solid wastes- Municipal solid wastes, Hazardous solid waste-characteristics and management of HSW, Waste treatment and disposal methods- physical, biological and chemical process.

Environment Impact Assessment and Control (4 Hours)

Basic ideas of environment impact assessment; Environment ethics; Environmental laws and constitutional provisions to control pollutions in India-The general acts; Air (prevention and control

of pollution) act; Water (prevention and control of pollution) act; Wild life protection act; Forest conservation act; Environment protection acts.

Module III (13 Hours)

Non-renewable and Renewable Energy Sources (13 Hours)

Non-renewable energy sources:-Coal, Oil, Natural gas; Nuclear fission energy; Merits and demerits of non-renewable energy.

Renewable energy sources: Biomass energy- Biofuels, Biogas plant - Fixed dome type and moving drum type; Wind energy; Wave energy; Tidal energy; Hydroelectricity; Geothermal energy conversion; Ocean thermal energy conversion; Fusion energy; Hydrogen energy- Production and storage; Merits and demerits of each renewable energy sources; Storage of intermittently generated renewable energy.

Module IV (14 Hours)

Solar energy (14 Hours)

Sun as a source of energy- Solar radiation, Solar Constant, Spectral distribution; Solar pond - Convective and salt gradient types; Flat plate collector; Solar water heater - Direct and indirect systems- Passive and active systems; Optical concentrator - Parabolic trough reflector - Mirror strip reflector - Fresnel lens collector; Solar desalination; Solar dryer - Direct and indirect type; Solar cooker; Solar heating of buildings; Solar green houses; Need and characteristics of photovoltaic (PV) systems; Solar cells - Principle, Equivalent circuits, V-I characteristics, fill factor, conversion efficiency; PV Sun tracking systems; Merits and demerits of solar energy.

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Module - V (18 Hours)

Unit 1 - Human Rights

An Introduction to Human Rights, Meaning, concept and development –History of Human Rights- Different Generations of Human Rights- Universality of Human Rights- Basic International Human Rights Documents - UDHR ,ICCPR,ICESCR.-Value dimensions of Human Rights

Unit 2 - Human Rights and United Nations

Human Rights co-ordination within UN system- Role of UN secretariat- The Economic and Social Council- The Commission Human Rights-The Security Council and Human rights- The Committee on the Elimination of Racial Discrimination- The Committee on the Elimination of Discrimination Against Women- the Committee on Economic, Social and Cultural Rights- The Human Rights Committee- Critical Appraisal of UN Human Rights Regime.

Unit 3- Human Rights National Perspective

Human Rights in Indian Constitution – Fundamental Rights- The Constitutional Context of Human

Rights-directive Principles of State Policy and Human Rights- Human Rights of Women-children – minorities- Prisoners- Science Technology and Human Rights- National Human Rights Commission- State Human Rights Commission- Human Rights Awareness in Education.

Reference Books:

1. Non-conventional energy sources - G.D Rai- Khanna Publishers, New Delhi
2. A textbook of Environmental Studies- E Bharucha - University Grants Commission, 2004
3. Environmental Science: Principles and Practice- R.C. Das and D.K. Behera - PHI Learning Pvt. Ltd
4. Renewable Energy Sources and Emerging Technologies: Edition 2, D.P. Kothari K. C. Singal, Rakesh Ranjan - PHI Learning Pvt. Ltd, 2011.
5. Solar energy - M P Agarwal - S Chand and Co. Ltd.
6. Solar energy - Suhas P Sukhative Tata McGraw - Hill Publishing Company Ltd.
7. Renewable Energy, Power for a sustainable future, Edited by Godfrey Boyle, Oxford University Press, 2012.
8. Solar Energy: Resource Assesment Handbook- Dr. P Jayakumar APCTT 2009
9. A textbook of Environmental Studies- S.Satyanarayan, S.Zade, S.Sitre and P.Meshram - Allied Publishers, New Delhi, 2009
10. Remote Sensing: Principles and Interpretation, Floyd F. Sabins, Waveland Pr Inc; 3 edition (2007)

Human Rights

1. Amartya Sen, The Idea Justice, New Delhi: Penguin Books, 2009.
2. Chatrath, K. J.S., (ed.), Education for Human Rights and Democracy (Shimla: Indian Institute of Advanced Studies, 1998)
3. Law Relating to Human Rights, Asia Law House, 2001.
4. Shireesh Pal Singh, Human Rights Education in 21st Century, Discovery Publishing House Pvt.Ltd, New Delhi,
5. S.K.Khanna, Children and the Human Rights, Common Wealth Publishers, 1998. 2011.
6. Sudhir Kapoor, Human Rights in 21st Century, Mangal Deep Publications, Jaipur, 2001.
7. United Nations Development Programme, Human Development Report 2004: Cultural Liberty in Today's Diverse World, New Delhi: Oxford University Press, 2004.

Mahatma Gandhi University, Kottayam

PRIYADARSHINI HILLS, KOTTAYAM-686560

B.Sc Chemistry (CBCSS) Syllabus

Prepared by

Board of Studies (UG) in Chemistry

&

Faculty of Science

May 2017

PROGRAMME STRUCTURE

1. B.Sc CHEMISTRY PROGRAMME – (MODEL - I)

Sem	Title with Course code	Course Category	Hours per week	Credits
I	English I	Common	5	4
	English/ Common Course I	Common	4	3
	Second Language I	Common	4	4
	CHICRT01 General and Analytical Chemistry	Core	2	2
	CH2CRP01 Volumetric Analysis	Core	2	-
	Complementary Mathematics	Complementary	4	3
	Complementary Physics	Complementary	2	2
	Complementary Physics Practical	Complementary	2	-
II	English II	Common	5	4
	English/ Common Course II	Common	4	3
	Second Language II	Common	4	4
	CH2CRT02 Theoretical and Inorganic Chemistry	Core	2	2
	CH2CRP01 Volumetric Analysis	Core	2	2
	Complementary Mathematics	Complementary	4	3
	Complementary Physics	Complementary	2	2
	Complementary Physics Practical	Complementary	2	2
III	English III	Common	5	4
	II Lang/Common Course I	Common	5	4
	CH3CRT03 Organic Chemistry-I	Core	3	3
	CH4CRP02 Qualitative Organic Analysis	Core	2	-
	Complementary Mathematics	Complementary	5	4
	Complementary Physics	Complementary	3	3

	Complementary Physics Practical	Complementary	2	-
IV	English IV	Common	5	4
	II Lang/ Common Course II	Common	5	4
	CH4CRT04 Organic Chemistry-II	Core	3	3
	CH4CRP02 Qualitative Organic Analysis	Core	2	2
	Complementary Mathematics	Complementary	5	4
	Complementary Physics	Complementary	3	3
	Complementary Physical Practical	Complementary	2	2
V	CH5CRT05 Environment, Ecology and Human Rights	Core	4	4
	CH5CRT06 Organic Chemistry-III	Core	3	3
	CH5CRT07 Physical Chemistry - I	Core	2	2
	CH5CRT08 Physical Chemistry - II	Core	2	3
	CH5OPT Open course	Open	4	3

	CH6CRP03 Qualitative Inorganic Analysis	Core	3	-
	CH6CRP04 Organic Preparations and Basic Laboratory Techniques	Core	2	-
	CH6CRP05 Physical Chemistry Practical	Core	3	-
	CH6PRP01Project	Core	2	-
VI	CH6CRT09 Inorganic Chemistry	Core	3	3
	CH6CRT10 Organic Chemistry-IV	Core	3	3
	CH6CRT11 Physical Chemistry - III	Core	3	3
	CH6CRT12 Physical Chemistry - IV	Core	3	3
	CH6CBT Choice Based Course	Core	3	3
	CH6CRP03 Qualitative Inorganic Analysis	Core	3	2
	CH6CRP04 Organic Preparations and Basic Laboratory Techniques	Core	2	2
	CH6CRP05 Physical Chemistry Practical	Core	3	2
	CH6CRP06 Gravimetric Analysis	Core	2	2
	CH6PRP01 Project & Industrial visit and comprehensive viva-voce	Core	-	2

SEMESTER V

CH5CRT05 - Environment, Ecology and Human Rights

Credits – 4 (72 Hrs)

Environmental Chemistry (54 h)

Objectives: Environmental awareness is to understand the fragility and sensitivity of our environment, in particular the biosphere and the importance of its protection. Promoting environmental awareness is an easy way to become an environmental steward and participate in creating a brighter future for our next generations. The most important goal of this paper is to impart awareness on various environmental aspects, with some glimpses of contemporary issues. This will help them foster a *sense* of responsibility and "*proactive citizenship*".

Module I: Introduction to environmental studies: Natural resources

10 h

Definition, scope and importance of environmental studies for sustainable development, need for public awareness.

Natural Resources: Classification of natural resources; renewable and non-renewable resources: Natural resources and associated problems;

7.1. Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification. Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources.

7.2. Water resources: Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.

7.3. Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.

7.4. Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, industrial farming of livestock and effects on global warming, fertilizer-pesticide problems, water logging, salinity. Energy resources: Growing energy needs, renewable and non- renewable energy sources, use of alternate energy sources, mass production of biodiesel for energy needs and *food security*. Role of an individual in conservation of natural resources. Equitable use of resources for sustainable lifestyles.

Module II: Environment: Pollution and Social Issues

18 h

Fundamental ideas of pollution and pollutant. Cause, effects and preventive measures of various types of pollutions including; air, water, soil, marine, noise and thermal pollutions. Nuclear energy as a source of energy and its hazards. Solid waste management; causes, effects and control mechanisms of urban and industrial wastes. Prevention of pollution: role of individual. Disaster management mechanisms; disaster management of; floods, earthquake, cyclone and landslides.

Movement from unsustainable to sustainable development. Urban crisis related to energy. Water conservation, rain water harvesting, watershed management, Environmental ethics: Issues and possible solutions. Introduction to important green house gases (GHGs), sources of the primary greenhouse gases in Earth's atmosphere including water vapor, carbon dioxide, methane. The lesser GHGs- nitrous oxide, ozone and fluorinated gases. Carbon cycle, CO_2 sources, Keeling curve and Natural 'sinks' for CO_2. Green house effect, climate change, global warming, acid rain, ozone layer depletion, role of CFCs in ozone depletion, and its mechanism, nuclear accidents and holocaust. Wasteland reclamation. Consumerism and waste products. Environment Protection Act (EPA). Air (prevention and control of pollution) Act. Water (prevention and control of pollution) Act, Wildlife Protection Act, Forest Conservation Act. Issues involved in the enforcement of environmental legislation. Introduction to the concept of green chemistry, atom economy (with suitable examples) and the twelve principles of green chemistry.

Module III: Population and Environmental issues

8 h

Human population growth, *Malthusian theory (basic idea) and* theory of evolution by natural selection*, Malthusian* catastrophe. Global challenges, *environmental* problems of population growth, impacts on human health and welfare, variation among nations, population explosion and Family Welfare Programme. Socio- economic, and geo-political dimensions of poverty, absolute and relative poverty, poverty scale, variation among nations, international food crisis. Resettlement and rehabilitation of project affected population. Environmental movements in India: Chipko, Silent valley, Bishnois of Rajasthan etc.

Module IV: Ecological Chemistry

18 h

Definition and scope of ecological chemistry, ecological stress posed upon ecosystems by the presence of chemicals. Origin of chemical toxicants; natural sources, and man-made. Organization of chemicals as xenobiotic, essential or nonessential substances. Release of chemicals in the environment, Transport Processes, Classification of transformation processes, biotic and abiotic. Structure- activity relationships in degradation and biodegradation of organic chemicals. Transformation processes including general, hydrolysis, oxidation, reduction, photochemical degradation, microbial degradation, and phytodegradation, environmental fate determining processes, bioavailability, exposure of species to (bio)available fractions, uptake (accumulation), metabolism, biomagnifications, distribution in organisms, and subsequent toxic effects. Risk assessment of chemicals-assessment of contaminated soils.

Persistent organic pollutants (POPs), natural and anthropogenic origin of POCs and characteristic properties; half-lives, K_{ow}, K_{aw} and K_{oa}. Adverse effects of persistent chemicals. Legislation on the use of POPs and twelve persistent organic pollutants. The sources, the uses, some of the physico-chemical properties, the half-lives in the environmental compartments of air, water and soil. Behaviour of the priority persistent organic pollutants identified by the United Nations Economic Commission for Europe (UNECE) including; polychlorinated biphenyls, dieldrin, aldrin, dichlorodiphenyltrichloroethane (DDT), Mirex, Heptachlor and Polychlorinated furans. Agency for Toxic Substances and Disease Registry (ATSDR) list, **the ATSDR 2017 Substance Priority List,** Restriction of Hazardous Substances (RoHS) directive, Material Safety Data Sheet (MSDN), Toxic Substances Control Act (TSCA) and banned/severely restricted chemicals list.

Suggested reference books

1. S. Manahan, *Fundamentals of environmental chemistry*, CRC-Press, 1993.
2. S. Manahan, *Fundamentals of Environmental and Toxicological Chemistry*: Sustainable Science, CRC Press, 2013
3. R.C. Brunner, *Hazardous Waste Incineration*, McGraw Hill Inc., 1989
4. W.P. Cunningham, T.H. Cooper, E Gorhani, and M.T. Hepworth, *Environmental Encyclopedia*, Jaico Publishing House, Mumbai, 2001.
5. A.K. De, *Environmental Chemistry*, Wiley Eastern Ltd.
6. V. Subramanian, *A Textbook of Environmental Chemistry*, I.K. International Publishing House Pvt. Ltd. 2011.
7. S.K. Tiwari, *Environmental Science: Volume I and II*, Atlantic Publishers and Distributers Pvt. Ltd., 2011.
8. R. M. Harrison (ed.), *Understanding Our Environment An Introduction to Environmental Chemistry and Pollution*, Royal Society of Chemistry, 1999
9. D. E. Newton, *Chemistry of the Environment*, Facts On File Inc., 2007
10. V. Udai, Modern *Teaching of Population Education*, Anmol Publications Pvt. Ltd., 2005.
11. B. McGuire, Global *Catastrophes: A Very Short Introduction*, Oxford University Press, 2002.
12. A. E. Dessler, E. A. Parson, *The Science and Politics of Global Climate Change*, Cambridge University Press, 2006.
13. J. Firor, J. Jacobsen, *The Crowded and Greenhouse- Population, Climate Change, and Creating a Sustainable World,* Yale University Press, 2002.
14. B. Lomborg, *Cool It: The Skeptical Environmentalist's Guide to Global Warming,* Alfred A. Knopf Publisher- New York, 2007.

Further readings

1. S. V. S. Rana, *Essentials of Ecology and Environmental Science*, 5th Edition, Rupa publications, 2013.
2. V.H. Heywood, and R.T. Waston, *Global Biodiversity Assessment*. Cambridge Univ. Press 1995.
3. H. Jadhav, V.M. Bhosale, *Environmental Protection and Laws*. Himalaya Pub. House, Delhi 1995.
4. M.L. Mckinney, and R.M. School, *Environmental Science Systems and Solutions*, Web enhanced edition. 1996.

5. P. H., H. Raven, D.M. Hassenzahl, and L. R. Berg, *Environment*, 8th Edn. John Wiley & Sons, 2012.
6. A. Wreford, D. Moran, N. Adger , *Climate Change and Agriculture: impacts, adaptation and mitigation*, OECD publications, 2010.
7. R.S. Boethling D. Mackay, *Handbook of Property Estimation Methods for Chemicals.* Boca Raton, FL, USA: Lewis Publishers, 2000.
8. J.L.M. Hermens C. J. Van Leeuwen *Risk Assessment of Chemicals: An Introduction, Dordrecht,* The Netherlands, Kluwer Academic Press, 1995.
9. D. Mackay, W.Y.,Shiu, K.C. Ma *Physical-Chemical Properties and Environmental Fate, Degradation Handbook.* (CD-ROM), Boca Raton, FL, USA, Chapman & Hall CRC netBASE, CRC, 1999.
10. W. J. G. M. Peijnenburg, *Ecological Chemistry*, *Environmental and Ecological Chemistry- Vol. III*, *Encyclopedia of Life Support Systems* (EOLSS).
11. M. Ali, *Climate Change Impacts on Plant Biomass Growth*, Springer Dordrecht Heidelberg, 2013

Special Notes and Suggestions:

The purpose of the paper is to create general awareness on various dimensions of environmental sciences with a special focus on contemporary issues. The BoS in Chemistry recommend case studies or sample surveys (maybe in groups) rather than seminars. Students can undertake an assignment based on any of the following highly relevant and current topic;

- Edutainment film *"Samaksham",* produced by Mahatma Gandhi University, Kottayam.
- Case Studies on the *important natural resources* of Kerala.
- Case Studies on the Indian *mining scams and consequent environmental* damages of; illegal mining in the *Aravali Ranges, Goa, Ganges river bed, Bellary* etc.
- Case Studies on the *disaster management mechanisms* of floods, landslides, earthquake, cyclone etc.
- Case Studies on the water conservation, rain water harvesting, watershed management in a local contest.
- Case studies on environmental movements like Narmada Bachao Andolan, Appiko Movement, Save Ganga Movement etc.

Module - V (18 h)

V.I Human Rights

An Introduction to Human Rights, meaning, concept and development –History of Human Rights- Different Generations of Human Rights- Universality of Human Rights- Basic International Human Rights Documents
- UDHR, ICCPR, ICESCR.-Value dimensions of Human Rights

V-II Human Rights and United Nations

Human Rights co-ordination within UN system- Role of UN secretariat- The Economic and Social Council- The Commission (of) Human Rights?-The Security Council and Human rights- The Committee on the Elimination of Racial Discrimination- The Committee on the Elimination of Discrimination Against Women- the Committee on Economic, Social and Cultural Rights- The Human Rights Committee- Critical Appraisal of UN Human Rights Regime.

V-III Human Rights National Perspective

Human Rights in Indian Constitution – Fundamental Rights- The Constitutional Context of Human Rights- directive Principles of State Policy and Human Rights- Human Rights of Women-children –minorities- Prisoners- Science Technology and Human Rights- National Human Rights Commission- State Human Rights Commission- Human Rights Awareness in Education.

References and suggested readings

1. H.O. Agarwal, *Implementation of Human Rights Covenants with Special Reference to India*,
2. P. Alston, *The United Nations and Human Rights*, Clarendon Press, London, 1995.
3. Amnesty International, *Political Kings by Governments*, Amnesty International, London, 1983.
4. Bajwa, G.S. and D.K. Bajwa, *Human Rights in India: Implementation and Violations* , D.K. Publishers, New Delhi, 1996.
5. UNESCO, Yearbook on Human Rights.
6. NHRC, Annual Reports since 1993.
7. V.K. Bansal, *Right to Life and Personal Liberty*, Deep and Deep, New Delhi, 1986.
8. M. Banton, *International Action against Racial Discrimination* Clarendon Press, Oxford, 1996.
9. D.D. Basu, Human Rights in Constitutional Law, Prentice Hall, New Delhi, 1994.
10. N.Bava (ed.,) *Human Rights and Criminal Justice Administration in India*, Uppal Publishing House, New Delhi, 2000.
11. UN Centre for Human Rights, *Civil and Political Rights: The Human Rights Committee*, World Campaign for Human Rights, Geneva, 1997.
12. UN Centre for Human Rights, *Discrimination against Women*, World Campaign for Human Rights, Geneva, 1994.
13. UN Centre for Human Rights, Minority Rights, World Campaign for Human Rights, Geneva, , 1998.
14. UN Centre for Human Rights, *Human Rights Machinery*, World Campaign for Human Rights, Geneva, 1987.
15. Ian Brownlie, *Basic Documents Human Rights*
16. Jack Donelli, *Universal Human Rights in Theory and practice*
17. Upendra Baxi, *Future of Human Rights*
18. O P Dhiman, *Understanding Human Rights-An Overview*
19. D P Khanna, *Reforming Human Rights*
20. Chiranjivi J Nirmal, *Human Rights in India-Historical, social and political perspectives*
21. *Human Rights in Post-Colonial India,* Edited by Om Prakash Dwivedi and V G Julie Rajan

MAHATMA GANDHI UNIVERSITY

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CURRICULUM OF
CHOICE BASED CREDIT SYSTEM
FOR
UNDERGRADUATE

ZOOLOGY PROGRAMME

2017 ADMISSION ONWARDS

MODEL-1 (1-VI SEMESTERS)
(TOTAL CREDITS 120)
(TOTAL HOURS 150 Hrs.)

Semester 1

No	Course Code	Course Title	Course Category	Hrs per week	Credits	Marks ratio	
						Intl	Extl
1		English - 1	Common Course I	5	4	1	4
2		English - 2	Common Course II	4	3	1	4
3		Second Language – 1	Common Course III	4	4	1	4
4	ZY1CRT01	General perspectives in Science & Protistan Diversity	Core Course I : Theory	2	2	1	4
5		Practical : General perspectives in Science & Protistan Diversity	Core Course I : Practical	2	0	0	0
6		Chemistry 1/ Biochemistry 1	Complementary Course I : Theory	2	2	1	4
7		Chemistry 1	Complementary Course I : Practical	2	0	0	0
8		Botany 1	Complementary Course II : Theory	2	2	1	4
9		Botany 1	Complementary Course II : Practical	2	0	0	0
Total				**25 hrs**	**17**		

Semester 2

No	Course Code	Course Title	Course Category	Hrs per week	Credits	Marks ratio	
						Intl	Extl
1		English 3	Common Course	5	4	1	4

			IV				
2		English 4	Common Course V	4	3	1	4
3		Second Language -2	Common Course VI	4	4	1	4
4	ZY2CRT02	Animal Diversity- Non Chordata	Core Course II : Theory	2	2	1	4
5	ZY2CRP01	Animal Diversity – Non Chordata	Core Course II : Practical	2	2	1	4
6		Chemistry – II / Biochemistry - II	Complementary Course I : Theory	2	2	1	4
7		Chemistry – II / Biochemistry - II	Complementary Course I : Practical	2	2	1	4
8		Botany – II	Complementary Course II : Theory	2	2	1	4
9		Botany – II	Complementary Course II : Practical	2	2	1	4
Total				**25 hrs**	**23**		

Semester 3

No	Course Code	Course Title	Course Category	Hrs per week	Credits	Marks ratio	
						Intl	Extl
1		English 5	Common Course VII	5	4	1	4
2		Second Language 3	Common Course VIII	5	4	1	4
3	ZY3CRT03	Animal Diversity - Chordata	Core Course III : Theory	3	3	1	4
4	ZY3CRPO3	Animal Diversity- Chordata	Core Course III : Practical	2	0	0	0
5		Chemistry – III / Biochemistry - III	Complementary Course I : Theory	3	3	1	4
6		Chemistry – III / Biochemistry - III	Complementary Course I : Practical	2	0	0	0

7		Botany III	Complementary Course II : Theory	3	3	1	4
8		Botany III	Complementary Course II : Practical	2	0	0	0
Total				**25 hrs**	**17**		

Semester 4

No	Course Code	Course Title	Course Category	Hrs per week	Credits	Marks ratio	
						Intl	Extl
1		English - 6	Common Course IX	5	4	1	4
2		Second language - 4	Common Course X	5	4	1	4
3				3	3	1	4
4	ZY4CRP02	Research methodology, Biophysics & Biostatistics	Core Course IV : Practical	2	2	1	4
5		Chemistry – IV / Biochemistry - IV	Complementary Course I : Theory	3	3	1	4
6		Chemistry – IV / Biochemistry - IV	Complementary Course I : Practical	2	2	1	4
7		Botany - IV	Complementary Course II : Theory	3	3	1	4
8		Botany - IV	Complementary Course II : Practical	2	2	1	4
Total				**25 hrs**	**23**		

Semester 5

No	Course Code	Course Title	Course Category	Hrs per week	Credits	Marks ratio	
						Intl	Extl
1				3	3	1	4
2	ZY5CRPO5	Environmental Biology & Human rights	Core Course V : Practical	2	0	0	0
3				3	3	1	4
4	ZY5CRPO6	Cell Biology & Genetics	Core Course VI : Practical	2	0	0	0
5	ZY5CRT07	Evolution, Ethology & Zoogeography	Core Course VII : Theory	3	3	1	4
6	ZY5CRPO7	Evolution, Ethology & Zoogeography	Core Course VII : Practical	2	0	0	0
7	ZY5CRT08	Human Physiology, Biochemistry & Endocrinology	Core Course VIII : Theory	3	3	1	4
8	ZY5CRPO8	Human Physiology, Biochemistry & Endocrinology	Core Course VIII : Practical	2	0	0	0
9	ZY5OPT01	1 – Vocational Zoology (Apiculture, Vermiculture, Ornamental fish culture)	Open Courses for other streams *(Select any one out of three)*	4	3	1	4
	ZY5OPT02	2 – Public health and Nutrition					
	ZY5OPT03	3 – Man, nature & Sustainable Development					
10	ZY6CRPRP	Project work (Credit 2 will be given in 6th semester with investigatory project).	Project	1	0		
Total				**25 hrs**	**15**		

Semester 6

No	Course Code	Course Title	Course Category	Hrs per week	Credits	Marks ratio	
						Intl	Extl
1				3	3	1	4
2	ZY6CRP09	Developmental Biology	Core Course IX : Practical	2	2	1	4
3	ZY6CRT10	Microbiology & Immunology	Core Course X : Theory	3	3	1	4
4	ZY6CRP10	Microbiology & Immunology	Core Course X : Practical	2	2	1	4
5				3	3	1	4
6	ZY6CRP11	Biotechnology, Bioinformatics and Molecular Biology	Core Course XI : Practical	2	2	1	4
7				3	3	1	4
8	ZY6CRP12	Occupational Zoology (Aquaculture, Apiculture, Vermiculture & Quail farming)	Core Course XII : Practical	2	2	1	4
9	ZY6CBT01	Elective 1: Ecotourism & Sustainable Development	Choice Based Core Elective Courses *(Select any one out of four)*	4	3	1	4
	ZY6CBT02	Elective 2: Agricultural pest management					
	ZY6CBT03	Elective 3: Vector & Vector borne Diseases					
	ZY6CBT04	Elective 4: Nutrition, Health & life style management					
10	ZY6CRPRP	Project Work	Project	1	2		
Total				**25 hrs**	**25**		

Pectoral and pelvic girdles of Frog and Rabbit

Bird - Keel and Synsacrum

Turtle/Tortoise - plastron and carapace

5. Study of sections.

Amphioxus T. S. through pharynx/T.S. through intestine

6. Identification:-

General identification-

Identify, classify and describe the following animals by their generic names and 30 % of them by their scientific names.

Protochordata-1, Pisces-5, Amphibia-5, Reptilia- 5, Aves-2, Mammalia-2.

Taxonomic identification with key:-

i) Identification of fishes up to the level of order.

ii) Identification of snakes up to family.

SEMESTER IV. ZY4CRT04

CORE COURSE IV

RESEARCH METHODOLOGY, BIOPHYSICS AND BIOSTATISTICS

54 Hrs

3 Credits

Objectives

1. To familiarise the learner the basic concept of scientific method in research process.

2. To have a knowledge on various research designs.

3. To develop skill in research communication and scientific documentation.

4. To create awareness about the laws and ethical values in biology.

5. To equip the students with the basic techniques of animal rearing collection and preservation

6. To help the student to apply statistical methods in biological studies.

RESEARCH METHODOLOGY

Module I **13 Hrs**

Basic concepts of research: Meaning, Objectives, Approaches, Types of research.

Research Process: Scientific method in research (eight steps).

Importance of literature reviewing in defining a problem,

Identifying gap areas from literature review.

Research Communication and scientific documentation: Project proposal writing,

Research report writing, (Structure of a scientific paper), Thesis, dissertation, research article.

Presentation techniques: Oral presentation, Assignment, Seminar, Debate, Workshop, Colloquium, Conference

Sources of Information: Primary and secondary sources. Library- Books, Journals, Periodicals, Reviews, Internet.

Search engines Online libraries, e-Books, e-Encyclopedia, Institutional Websites.

Module II **12 Hrs**

Animal Collection – Tools &techniques

Sampling techniques

- Quadrate
- Line transect

Measurements

- Density
- Abundance
- Frequency

Biodiversity indices – concepts

- Simpson index

Collection methods, techniques and equipments

- Plankton
- Insects
- Fish

Bird

Preservation techniques – Taxidermy

Rearing techniques

Laboratory and field.

Units of measurements- units, SI system, Equivalent weight, normality, molarity

BIOPHYSICS

Module III **14 Hrs**

Basic understanding on principle and uses of the following:

Microscopy

(a) Light microscopy, Bright field (Compound Microscope), Phase contrast, Dark field microscopy, Fluorescence, Polorization microscopy, Video microscopy.

(b) Electron - Scanning (SEM), Transmission (TEM) and STEM

Micrometry – Stage and Eyepiece micrometers

Camera Lucida

Instrumentation

pH Meter

Separation Techniques: Centrifuge, Chromatography, Electrophoresis

Analytical techniques: Colorimeter, Spectrophotometer, X-ray crystallography

BIOETHICS

Module IV **5 Hrs**

BIOSTATISTICS **10 Hrs**

Module V

Sample & Sampling techniques: Collection of data, classification of data, frequency distribution tables, graphical representation: - Bar diagrams, Histogram, Pie diagram and Frequency curves - Ogives.

Measures of Central Tendency: Mean, Median, Mode (Problem - Direct method only)

Measures of dispersion: Range, Quartile Deviation, Mean Deviation, Standard Deviation, Standard error. (Merits & demerits and problems on SD).

Correlation: Definition, Types of correlation.(mention in brief)

Test of Hypothesis and Test of Significance: Basic concept, Levels of significance, test of significance, Procedure for testing hypothesis, types of hypothesis- Null hypothesis and Alternate hypothesis.

References

1. Gupta K.C, Bhamrah, H.S and G.S.Sandhu (2006) Research Techniques in Biological Sciences. Dominant Publishers and Distributors, New Delhi.
2. Khan and Khanum, (1990) Fundamentals of biostatistics.Press, Chicago,
3. Rastogi, V.B (2009) Fundamentals of Biostatistics, Ane Books Pvt. Ltd. New Delhi.
4. Ackoff, R.L. (1962) Scientific Method, New York : John Wiley Press.
5. Aggarwal. S.K.(2009) Foundation Course in Biology, 2nd Ed.. Ane's Student Edition. Ane Books Pvt. Ltd.
6. Anderson, J, Durston, B.H. and Poole, M. (1992). Thesis and assignment writing. Wiley Eastern Ltd.
7. Best, J.W.and K.V. James, (1986) Research in Education.5th Edn. Prentice- Hall of India Pvt.Ltd.

8. Campell, R. (1990). Statistics for biologists. CBS Publishers and distributors.

9. Day, R.A. (1993). How to write and publish a scientific paper. Cambridge University Press.

10. Day, R.A. (2000) Scientific English: A guide for Scientists and other Professionals. Universities Press.

11. Fischer, R.A.(1960)The Design of Experiment. 7th rev.edn. New York: Hafner Publishing Co.,

12. Hawkins C. and Sorgi, M. (1987). Research: How to plan, speak and write about it. Narosa Publishing House.

13. Killick, H.J. (1971). Beginning ecology. Ibadan University Press.

14. Kleinbaum, D.G. and M.Klein (2009) Survival analysis-Statistics for Biology & Health 2nd Ed. Springer International ed.

15. Knudsen J. W (1966) Biological Techniques: Collecting,Preserving, and Illustrating Plants and Animals.

16. Kothari, C.R. and G.Garg. (2014) Research Methodology. Methods and Techniques. 3rd edn.

17. Marie, M. (2005). Animal Bioethics: Principles and Teaching Methods Wageningen Academic Publishers.

18. Norman T.J. (2007) Bailey Statistical methods in biology, Cambridge University press.

19. Roberts, M. T. King and M. Reiss.(1994) Practical Biology for Advance Level. Thomas Nelson and Sons Ltd. Surrey, UK.

20. Ruxton, G.D. and Colegrave, N. (2006), Experinmental design for the life sciences. Oxford University Press.

21. Sateesh, M.K. (2008) Bioethics and Biosafety; I.K. International Publishing House .

7. Graphical representation of data. Construction of bar diagrams, Histograms, Pie diagram and Line graphs.

SEMESTER V. ZY5CRT05

CORE COURSE V

ENVIRONMENTAL BIOLOGY AND HUMAN RIGHTS

54 Hrs

Objectives

To instill the basic concepts of Environmental Sciences, Ecosystems, Natural Resources, Population, Environment and Society

To make the students aware of natural resources, their protection, conservation, the factors polluting the environment, their impacts and control measures.

To teach the basic concepts of toxicology, their impact on human health and remedial measures

To create a consciousness regarding Biodiversity, environmental issues & conservation strategies

To develop the real sense of Human rights – its concepts & manifestations

MODULE 1 ECOSYSTEM 12 Hrs

MODULE 2 CONCEPTS OF POPULATION AND COMMUNITY 8 Hrs

MODULE 3 BIODIVERSITY AND ENVIRONMENTAL ISSUES 16 Hrs

MODULE 4 CONSERVATION OF BIODIVERSITY 12 Hrs

MODULE 5 HUMAN RIGHTS 6 Hrs

References

1. Erach Bharucha 2008 (UGC). Text Book of Environmental Studies of Undergraduate course. University Press.
2. J.B Sharma (2009), Environmental studies' - 3rd Ed. University science Press
3. Misra S.P., Pandy S.N. 2009Essential Environmental Students, Ane books Pvt. Ltd.
4. P.D Sharma (2012), Ecology and Environment' - 11th Ed. Rastogi Publications

5. R.B Singh & Suresh Mishra PaulamiMaiti (1996), Biodiversity – Perception, Peril and Preservation' — PHI Learning , Environmental Law in India: Issues and Responses
6. Rajagopalan,R. 2005.*Environmental Studies from Crisis to Cure*. Oxford University Press, New Delhi.
7. Paul R.C., 2000.Situations of Human Rights in India. Efficient offset printers. ·
8. Arun kumar Palai(1999) National Human Rights Commission of India, Atlantic publishers
9. Sharma P.D. (2005)Environmental biology and Toxicology, Rastogi publication
10. Meera Asthana and Astana D.K.1990 Environmental pollution and Toxicology Alka printers.
11. Odum, E.P. 1971.Fundamentals of Ecology.W.B. Saunders College Publishing,Philadelphia
12. Alan Beeby, 2006 Anne – Maria Brennan First Ecology, Ecological principles and Environmental issues . International students edition Sec. edition Oxford University Press.
13. Robert Ricklefs (2001). The Ecology of Nature. Fifth Edition. W.H. Freeman and Company.
14. Stiling Peter (2002). Ecology: Theories and applications. Prentice Hall of India pvt.Ltd. New Delhi.
15. Landis, Wayne and Hing-hoYu, Baca Raton, 1995. Introduction to Environmental Toxicology: Impacts of chemicals upon Ecological systems: Lewis Publishers.

PRACTICAL

ENVIRONMENTAL BIOLOGY & TOXICOLOGY

36 HRS

CREDIT 1

1. Estimation of dissolved Oxygen
2. Estimation of carbon di oxide
3. Estimation of soil organic carbon (Demonstration only)
4. Identification of marine/ fresh water planktons
5. Counting of plankton using plankton counting chamber
6. Study of equipments - Sechi disc, Plankton net
7. Study of sandy shore fauna, rocky shore fauna.
8. Study of animal Association
9. Visit to any two important areas of bio diversity: 1. Forest, 2.Sea shore, 3. Mangrove, 3.

Wet lands, 4. Bird sanctuary, 5. Wild life sanctuary, 6. Sacred groves

Field study (compulsory)

SEMESTER V. ZY5CRT06

CORE COURSE VI
CELL BIOLOGY AND GENETICS

54 Hrs

Credits 3

Objectives

1. To understand the structure and function of the cell as the fundamentals for understanding the functioning of all living organisms.
2. To make aware of different cell organelles, their structure and role in living organisms.
3. To develop critical thinking, skill and research aptitudes in basic and applied biology
4. To emphasize the central role of genes and their inheritance in the life of all organisms.

CELL BIOLOGY — 22 HRS

Module I — **6 Hrs**

Introduction of cell and Diversity of cells: History, Cell theory, Prokaryotes, Eukaryotes, Mycoplasmas, Virus, Virions and Viroids, Prions.

Cell membrane & Permeability: Molecular models of cell membrane (Sandwich model, Unit membrane model, Fluid mosaic model). Cell properties - permeability, Transport [Diffusion, Osmosis, Passive transport, Active transport, bulk transport], Cell coat and Cell recognition.

Module II — **10 Hrs**

Cell Organelles : Structure and functions of following cell organelles: Endoplasmic reticulum - Structure and functions. Ribosomes (Prokaryotic and Eukaryotic) Golgi complex - Structure and functions. Lysosomes - Polymorphism - GERL concept, functions.

Mitochondria - Structure and functions. Nucleus: Structure and functions of interphase nucleus, Nuclear membrane, pore complex, structure and functions of nucleolus

Chromosomes – Structure & organization, Heterochromatin, Euchromatin, Nucleosomes, Polytene chromosomes-Balbiani rings, Endomitosis, Lamp brush chromosomes.

Module III **6 Hrs**

Cell Communication: Basic principles of cell communications,Cell signaling(in brief), Types of signaling, Mention signaling molecules (neurotransmitters, hormones, Growth Factors, Cytokines Vitamin A and D derivatives),

Cell Division: Cell cycle - G_1, S, G_2 and M phases,.Mitosis and Meiosis.The difference between Mitosis and Meiosis.

References

1 Zoological Society of Kerala Study material. 2002. *Cell Biology, Genetics and Biotechnology*

2. Karp, G. (2010). *Cell and Molecular Biology: Concepts and Experiments*. VI Edition. John Wiley and Sons.Inc.

3. Koshy Thomas & Joe Prasad Mathew (Editors) (2011) *Cell Biology and Molecular Biology*.

4. Sarada K & Mathew Joseph (Editors) (1999) *Cell Biology, Genetics and Biotechnoloy*,

.5. Thomas A.P (Editor) (2011) *Cell & Molecular Biology The Fundamentals*. Green leaf publications. TIES. Kottaya

6. Rastogi S. C. (1998) Cell Biology. Tata Mc.Graw Hill Publishing Co., New Delhi.

7.Powar C.B. (1983) Cell Biology (Himalaya Pub. Company)

8. Ali, S (2014) The Cell: Organization Function and Regulatory Mechanisms ,Pearson

9. Becker, W.M., Kleinsmith, L.J., Hardin. J. and Bertoni, G. P. (2009).*The World of the Cell*.VII Edition. Pearson Benjamin Cummings Publishing, San Francisco. 4

10. Bruce Albert, Bray Dennis, Levis Julian, Raff Martin, Roberts Keith and Watson James (2008). *Molecular Biology of the Cell*, V Edition, Garland publishing Inc., New York and London.

11. Cooper, G.M. and Hausman, R.E. (2009). *The Cell: A Molecular Approach*. V Edition. ASM Press and Sunderland, Washington, D.C.; Sinauer Associates, MA.

12. De Robertis, E.D.P. and De Robertis, E.M.F. (2006).*Cell and Molecular Biology*. VIII Edition. Lippincott Williams and Wilkins, Philadelphia.

.13. Gupta, P. K (2002) *Cell and Molecular Biology*, (2ed), , Rastogi Publications., Meerut

14. James Darnell. (1998) *Molecular Biology*. Scientific American Books Inc

15. Ariel G Loewy Philip Sickevitz, John R. Menninger and Jonathan A.N. Gallants (1991) cell structure and function. Saunder's College Publication

16. James Darnell. (1998) Molecular Biology.Scientific American Books Inc.

GENETICS **32 Hrs**

Module I **10 Hrs**

MendelianGenetics: Mendel's experiments- Monohybrid Cross, Dihybrid Cross, Mendel's Laws, Test Cross, Back Cross and Reciprocal Cross. Chromosome Theory of Inheritance

Interaction of genes: Allelic: Incomplete Dominance (Four O Clock Plant).Co- Dominance (Skin colour in Cattle) Lethal Alleles: Dominant lethal gene[Creeper chicken] and recessive lethal gene
[cystic fibrosis].
Non Allelic: Complementary (Flower colour in Sweet Pea), Supplementary (Coat colour in mice), Epistasis - dominant (Plumage in poultry) and recessive (Coat colour in mice). Polygenes (Skin colour inheritance in man), Pleiotropism (Vestigial wing gene in Drosophila).

Multiple alleles – ABO Blood group system, Rh group and its inheritance. Erythroblastosis foetalis.

Module II **12 Hrs**

Sex determination: Chromosome theory of sex determination (Autosome and Sex chromosomes), male heterogamy and female heterogamy, (xx-xy, xx-xo, ZZ-ZW, ZZ-ZO), Genic Balance theory of Bridges. Barr bodies, Lyon's hypothesis, Gynandromorphism, sex

mosaics, intersex (Drosophila), Hormonal [free martin in calf] and Environmental (Bonelia) influence on Sex determination

Recombination and Linkage: Linkage and recombination of genes based on Morgan's work in Drosophila, Linked genes, Linkage groups, Chromosome theory of Linkage, Types of linkage- complete and incomplete. Recombination, cross over value, chromosome mapping. [Definition]

Sex Linked inheritance : Characteristics of Sex Linked inheritance, X Linked inheritance of man (Hemophilia), Y linked inheritance [Holandric genes] , Incompletely Sex Linked genes or pseudoautosomal genes (Bobbed bristles in *Drosophila*), Sex limited genes (Beard in man) and Sex influenced genes (inheritance of baldness in man).

Module III **10 Hrs**

Mutation: Types of mutations - Somatic, germinal, spontaneous, induced, autosomal and allosomal, chromosomal mutations, structural and numerical changes. Gene mutations. [Addition, Deletion and substitution].

HumanGenetics: Karyotyping, Normal Human chromosome Complement, Pedigree analysis, Aneuploidy and Non- disjunction. Autosomal abnormalities (Down syndrome, Cry du chat syndrome) Sex chromosomal abnormalities (Klinefelters syndrome, Turner's syndrome) Single gene disorder (Brief mention) Autosomal single gene disorder [sickle cell anaemia), Inborn errors of metabolism such as phenylketonuria, alkaptonuria, , Albinism. Multifactorial traits – polygenic disorder- cleft lip and cleft palate.

-Brief account only

References

1. Gardner, J.E., Simmons, J.M and Snustad D.P..(2007). *Principles of Genetics* (8th edn.). John Wiley and Sons, India.
2. Klug, W.S and Cummings,M.R. (2011). *Concepts of Genetics* (7th edn).Pearson Education Inc.India.
3. Sarada K & Mathew Joseph (Editors) (1999) *Cell Biology, Genetics and Biotechnology*,
4. Shirly Annie Oommen, Sampath Kumar S., and Jinsu Varghese (Editors) (2012), *Gene toGenome*. Zoological Society of Kerala, Kottayam.
5. Singh,B.D.(2006). *Biotechnology*.Kalyani Publishers, New Delhi.
6. Thomas A. P (Editor), (2012). *Genetics and Biotechnology- The Fundamentals. Green Leaf Publications*, TIES, Kottayam.
7. Vijayakumaran Nair K. (2012). *Genetics and Biotechnology*. Academica, Trivandrum.

8. Benjamin Lewin. (2004). *Gene VIII.*Oxford University Press.
9. Brown C.H., Campbell I and Priest F, G. (1987). *Introduction of Biotechnology*. Blackwell Scientific Publishers, Oxford.
10. Das, H.K. (2007). *Text Book of Biotechnology*. Willey India Pvt. Ltd. New Delhi.
11. Hartl, L.D. and E.W.Jones. (2009). *Genetics: Analysis of Genes and Genomes* (7th edn) Jones and Barlett Publishers Inc, USA.
12. Primrose, S.B., Twyman, R.M. and Old, R.W. (2001). *Principles of Gene Manipulation* (6th edn.) Blackwell Science Ltd., London.
13. Sobti, R.C. and Pachauri, S.S. (2009). *Essentials of Biotechnology*. Ane's Book Pvt. Ltd.New Delhi.
14. Sinnat Dunn & Dobzhansky 1959. Principles of Genetics (T.M.H. New Delhi)

SEMESTER V

CORE COURSE VI

CELL BIOLOGY AND GENETICS

(PRACTICAL)

36 Hrs

2 Credits

PART A: CELLBIOLOGY

1. Squash preparation of onion root tip for mitotic stages
2. Mounting of polytene chromosome (Drosophila/Chironomous.) Demonstration
3. Tissues (permanent slides of epithelial tissues, striated muscle, smooth muscle, cartilage, bone)
4. Identification of cell organelles
5. Preparation of temporary whole mount.
6. Preparation of permanent whole mount (demonstration)
7. Preparation of human blood smear and identification of Leucocytes

PART B : GENETICS

1. Genetic problems on Monohybrid, Dihybrid Crosses and Blood group inheritance
2. Study of normal male and female human karyotype (use photographs or Xerox copies)
3. Abnormal human karyotypes - Down, Edwards , Klinefelter and Turner syndromes

ENDOCRINOLOGY

1. Cockroach – Corpora cardiaca &Corpora allata (Demonstration)

2. Effect of adrenalin on heart beat of Cockroach (Demonstration)

SEMESTER VI. ZY6CRT09

CORE COURSE IX

DEVELOPMENTAL BIOLOGY

54 Hrs

3 Credits

Objectives:

1. To achieve a basic understanding of the experimental methods and designs that can be used for future studies and research.
2. To provide the students with the periodicclass discussions of current events in science which will benefitthem in their future studies in the biological/physiological sciences and health-related fields
3. To contribute tocritical societal goal of a scientifically literate citizenry.

Module 1 **10 Hrs**

Introduction: Definition, Scope of developmental biology, sub-divisions (descriptive, comparative, experimental and chemical), historical perspectives, basic concepts and theories.

Reproductive Physiology: Gonads- anatomy of testis and ovary, spermatogenesis, oogenesis, gonadal hormones and their functions. Hormonal control of human reproduction - Female reproductive cycles (Estrous cycle, Menstrual cycle). Structure of mammalian sperm and egg, Pregnancy, parturition and lactation.Reproductive health and importance of sex education.

.**Egg types:** Classification of eggs based on the amount, distribution and position of yolk. Mosaic and regulative, cleidoic and noncleidoic eggs.Polarity and symmetry of egg.

Fertilization: Mechanism of fertilization-(Encounter of spermatozoa and Ova, Approach of the Spermatozoon to the Egg, Acrosome Reaction and Contact of Sperm and Ovum, Activation of Ovum, Migration of Pronuclei and Amphimixis,), Significance of fertilization, Polyspermy, Parthenogenesis- Different types and significance.

Module II **14 Hrs**

Cleavage: Types, planes and patterns of cleavage, Cell lineage of Planaria. Influence of yolk on cleavage.

Blastulation: Morula, blastula formation, types of blastula with examples.

Fate maps: Concept of fate maps, construction of fate maps (artificial and natural), structure of a typical chordate fate map. Significance of fate map.

Gastrulation: Major events in gastrulation. Morphogenetic cell movements. Influence of yolk on gastrulation. Exogastrulation.Concept of germ layers and derivatives.

Cell differentiation and gene action: Potency of embryonic cells (Totipotency, Pleuripotency, Unipotency of embryonic cells). Determination and differentiation in embryonic development, Gene action during development with reference to Drosophila (maternal effect genes), Zygotic genes.

Module III **20Hrs**

Embryology of Frog: Gametes, fertilization, cleavage, blastulation, fatemap, gastrulation, neurulation, notogenesis. Differentaition of Mesoderm and Endoderm, Development of eye.Metamorphosis of frog, Hormonal and environmental onrol.

Embryology of chick: Structure of egg, fertilization, cleavage, blastulation, fate map, gastrulation. Development and role of Primitive streak, Salient features of 18hour, 24 hour, 33 hour & 48 hour chick embryo.Extra embryonic membranes in chick.

Human development: Fertilisation, cleavage, blastocyst, implantation, placenta. Gestation, parturition and lactation.Human intervention in reproduction, contraception and birth control. Infertility, Invitro fertilization (test tube baby)

Module IV **5Hrs**

Experimental embryology: Spemann's constriction experiments, Organizers and embryonic induction. Embryo transfer technology,

Teratology / Dysmorphology, Developmental defects:

Developmental defects: Prenatal death (miscarriage and still birth). Intrauterine Growth Retardation (IUGR).

Module V **5 Hrs**

General topics: Classification and functions of placenta in mammals. Prenatal diagnosis (Amniocentesis, Chorionic villi sampling, Ultra sound scanning, Foetoscopy, Maternal serum alpha-fetoprotein, Maternal serum beta-HCG).Regeneration in animals.

References

Anthony S. Fauci, Eugene Braunwald, Dennis L. Kasper,Stephen L. Hauser, Dan L. Longo, J. Larry Jameson and Joseph Loscalzo; 2008; Harriosns Principles of Internal Medicine; Chruch Livingston 17th Ed.

Balnisky B.I.; 1981 An Introduction to Embryology, W.B. Saunders and Co.

Berril, N..J.; and Kars, G.; 1986. Developmental biology, Mc Graw Hills

Dutta 2007 Obstrestics , Church Livingston 17 Ed

Majumdar N. N -1985 Vetebrate embryology; Tata McGraw-Hill, New Delhi

Melissa A & Gibbs, 2006; A practical Guide to Developmental Biology, Oxford university press (Int. student edition)

Scott F. Gilbert; 2003; Developmental biology; Sinauer Associates Inc.,U.S.; 7th Revised edition.

Vijayakumarn Nair, K. & George, P. V. 2002. A manual of developmental biology, Continental publications , Trivandrum

Taylor D J, Green NPO & G W Stout. (2008) Biological Science third edition. Cambridge

SEMESTER VI. ZY6CRT11

CORE COURSE XI.

BIOTECHNOLOGY, BIOINFORMATICS AND MOLECULAR BIOLOGY

BIOTECHNOLOGY **20 Hrs**

Module I **11Hrs**

Introduction: Scope, Brief History, Scope and Importance

Tools and Techniques in Biotechnology: Enzymes (restriction endonucleases, ligases, linkers & adapters), Vectors-[Plasmids, Phage vectors, Cosmids, Artificial Chromosomes] Host cells. Basic steps & techniques in rDNA technology

Gene Libraries, Construction of genomic library and cDNA Library. PCR technique and DNA amplification, Brief description of screening methods – Probes, Nucleic Acid hydridization, In situ Hybridization, Fluorescence in situ Hybridization (FISH), Colony hybridization. Methods of transfer of desired gene into target cell.Blotting Techniques-Southern, Northern, Western blotting.DNA Finger printing (DNA Profiling) and its application. Molecular markers - RFLP

Module II **9 Hrs**

Animal Cell Culture: Brief account on methods, substrates, media and procedure of animal cell culture, Stem Cells, types and potential use, Organismal Cloning- reproductive & therapeutic- brief account only.

Applications of Biotechnology: Applications in Medicine(insulin, growth hormone, gene therapy), Agriculture(GM plants and biopesticides),Environment(bioremediation), Industry (Single Cell Protein) and applications of Fermentation Technology- lactic acid, vitamins, food and beverages.

References

1. Singh B.D Biotechnology 2002. Kalyan Publishers New Delhi.

2. Brown C.H., Campbell I & Priest F, G. 1987. Introduction of Biotechnology (Blackwell scientific publishers Oxford).

3. Colin Ratledge Bijorn Kristiansesn, 2008. Basic Biotechnology 3 rd ed. Cambridge University.

4. Janarathanan S & Vincent S. 2007. Practical Biotechnology, Method of Protocols. University Press.

5. John E. Smith. Biotechnology Cambridge Low priced ed. (Third Ed) 2005 Madingan, Martinko and Parker 2002, Biology of Microorganisms, Brock Eighth Ed. Prentice Hall.

6. Singh B.D. Biotechnolgy 2002, Kalyan Publishers New Delhi.

7. Sudha Gangal 2007. Biotechnology Principles and & practice of Animal Tissue culture, Universities Press.

BIOINFORMATICS **14 Hrs**

Module III **8 Hrs**

Introduction: Definition, importance and role of bioinformatics in life sciences. Computational Biology.

Biological databases: Nucleotide sequence databases (NCBI- GENBANK, DDBJ and EMBL). Protein databases - structure and sequence databases (PDB, SWISSPROT and UNIPROT). Introduction to Sequences alignments: Local alignment and Global alignment, Pair wise alignment (BLAST and FASTA] and multiple sequence alignment. Phylogenetic Tree construction and Analysis

Module IV **6 Hrs**

Molecular visualization software - RASMOL. Basic concepts of Drug discovery pipe line, computer aided drug discovery and its applications. Human Genome Project.

MOLECULAR BIOLOGY **20 Hrs**

Module V **8 Hrs**

Nature of Genetic Materials: Discovery of DNA as genetic material – Griffith's transformation experiments. Avery Macarty and Macleod, Hershey Chase Experiment of Bacteriophage infection, Prokaryotic genome; Eukaryotic genome.Structure and.types of DNA & RNA.DNA replication. Modern concept of gene (Cistron, muton, recon, viral genes)., Brief account of the following-- Split genes (introns and exons), Junk genes, Pseudogenes, Overlapping genes, Transposons.

Module VI **12 Hrs**

Gene Expressions: Central Dogma of molecular biology and central dogma reverse, one gene-one enzyme hypothesis, One gene-one polypeptide hypothesis Characteristics of genetic code, Contributions of Hargobind Khorana.

Protein synthesis [prokaryotic]: Transcription of mRNA, Reverse transcription, post transcriptional modifications, Translation, Post translational modifications.

Gene regulations: Prokaryotic(inducible & repressible systems) Operon concept -Lac operon and Tryptophan operon, Brief account of Eukaryotic gene regulation.

References

1. Bruce Albert, Bray Dennis, Levis Julian, Raff Martin, Roberts Keith and Watson James (2008). Molecular Biology of the Cell, V Edition, Garland publishing Inc., New York and London.
2. De Robertis, E.D.P. and De Robertis, E.M.F. (2006).Cell and Molecular Biology.VIII Edition. Lippincott Williams and Wilkins, Philadelphia.
3. Gupta, P. K (2002) Cell and Molecular Biology, (2ed), , Rastogi Publications., Meerut
4. James Darnell. (1998) Molecular Biology. Scientific American Books Inc
5. Thomas AP(Editor). 2011 Cell &Molecular Biology The Fundamentals. Green leaf publications .TIES Kottayam
6. Zoological Society of Kerala Study material. (2011) Cell and Molecular Biology

PRACTICAL .

BIOTECHNOLOGY, BIOINFORMATICS & MOLECULAR BIOLOGY

BIOTECHNOLOGY

1. Identify and comment on the item provided: (Western blotting / Southern blotting / Northern blotting / PCR)
2. Write down the procedure involved in DNA isolation

BIOINFORMATICS

1. Download/use print out/pictures of genome sequences of any 2 organisms. Identify and mention the characteristic features of both.
2. Download/ use print out/pictures of a protein sequence , identify it & comment on its amino acid composition
3. Download / use print out/pictures of a macromolecule. Write a brief note on the bioinformatics tool used to visualize its structure.

MOLECULAR BIOLOGY

1. Identify and comment on its molecular composition / structural orientation / functional significance (Any tissue / Cell organelles/ DNA, DNA replication, RNA different types using models or diagrams)

V1 SEMESTER. ZY6CRT12
CORE COURSE XII
OCCUPATIONAL ZOOLOGY .
(APICULTURE, VERMICULTURE, QUAIL FARMING & AQUACULTURE)

54 Hrs
Credits 3

Objectives:

1. To equip the students with self employment capabilities.
2. To provide scientific knowledge of profitablefarming.

3. To make the students aware of cottage industries.

Module 1. APICULTURE **18 Hrs**

Activity :Visitto an apiculture unit.

Field visit and report submission - 10 Hrs

Field visit and report submission on any two items are taken for internal evaluation.

MODULE: 2. VERMICULTURE **8 Hrs**

Activity : Submission of a report after preparing a vermiculture unit or visiting a vermicomposting unit.

MODULE: 3.QUAIL FARMING (*Coturnix coturnix*) **4 Hrs**

MODULE: 4. AQUACULTURE. **24 Hrs**

Activity – Setting up of an Aquarium

Field visit – Visiting an Aquaculture farm

References

NPCS Board, The complete book on Bee keeping and honey processing, NIIR Project consultancy services, 106E, Kamala nagar, Delhi- 110007.

Shukla G.S, & Updhyay V.B, Economic zoology ,Rastogi Publ. Meerut.

Pradip.V.Jabde , Text book of applied zoology, 2005

Applied Zoology, Study Material Zoological Society of Kerala , CMS college Campus

Clive. A Edwards, Norman. Q. & Rhonda. 2011. Vermitechnology: earthworms, organic waste & environmental management.

Chauhan, H.V.S. Poultry, Disease, diagnosis and treatment, Wiley eastern Ltd Delhi.

Otieno.F.O 2014. Quail farming: markets & market strategies

Pillai T.V.R., Aquaculture, principles and practices.

Ronald j. Roberts (1978) Fish pathology , Cassel Ltd London.

Cowey C. B. *et. al*. (1985) Nutrition and feeding in fishes, academy press.

Farm made aquafeeds. FAO fisheries Technical paper, 343.

Harisankar J. Alappat& A. Bijukumar, Aquarium Fishes. B. R. Publ. Corporation, Delhi.

MPEDA, A hand Book on AquafarmingOrnamentalfishes, MPEDA, Kochi.

Amber Richards. 2014. Aquaponics at home.

Pradip.V.Jabde. 1993. Text book of applied zoology

Venkitaraman, P.R,1983, Text book of Economic zoology(SudharsanaPuubl. Kochi)

Addison Webb, Bee Keepingfor profit and pleasure, Agrobios Ltd.

Edwards.C.A.&Lafty, J.R.1972 Biology of earthworms(Chapman & Hall Led London)

Applied Zoology, Study Material Zoological Society of Kerala , CMS college Campus

Complementary course 4 Code: BO4CMT04
ANATOMY AND APPLIED BOTANY
(Theory 54 hrs; Practical 36 hrs; Credits 3 + 1)

Objectives:

- Understand different types of plant tissues.
- Understand the internal structure of different plant organs with reference to their functions.
- Understand the process of normal and anomalous secondary thickening in plants.
- Know the morphological and anatomical adaptations of plants growing in different habitats.
- Understand how botanical knowledge could be applied for crop improvement.
-

PLANT ANATOMY (27 hrs)

Module 1: Cells and tissues (9 hrs)
Gross structure of primary and secondary cell walls; structure and function of plasmodesmata; non-living inclusions - cystolith, raphides; Tissues – meristematic and permanent, types of meristems; simple and complex tissues, secretory tissues (nectaries, hydathodes, mucilage ducts and lactiferous tissue).

Module 2: Anatomy of plant organs (12 hrs)
Primary structure of stem and root in dicots and monocots; anatomy of monocot and dicot leaf. Secondary thickening in dicot stem and dicot root, heart wood and sap wood; tyloses; hard wood and soft wood; growth rings, dendrochronology. Anomalous secondary thickening in Bignonia.

Module 3: Ecological anatomy (6 hrs)
Study of the morphological and anatomical adaptations of the following groups: Hydrophytes – Nymphaea, Hydrilla; Xerophytes – Nerium; Epiphytes - Vanda.

APPLIED BOTANY: Plant breeding, Horticulture and Micropropagation (27 hrs)

Module 4: Plant breeding (12 hrs)
Objectives of plant breeding, methods of plant improvement - plant introduction, acclimatization, plant quarantine; selection - mass selection, pureline selection and clonal selection; hybridization - intervarietal, interspecific and intergeneric; procedure of hybridization.

Module 5: Artificial vegetative propagation methods (5 hrs)
Propagation of plants through cutting, layering - air layering; budding T and patch budding; grafting - tongue and splice grafting. Role of cambium in budding and grafting.

Module 6: Plant tissue culture (10 hrs)
Principles of tissue culture, micropropagation - different steps - selection of explants, culture media – general composition and preparation; sterilization of media and explants; callus. Regeneration of plants: organogenesis, somatic embryogenesis; artificial seeds. Applications of plant tissue culture.

Master of Science
Zoology

PROGRAM STRUCTURE AND
SYLLABUS 2019-20 ADMISSIONS
ONWARDS

(UNDER MAHATMA GANDHI UNIVERSITY PGCSS REGULATIONS 2019)

BOARD OF STUDIES IN ZOOLOGY
(PG) MAHATMA GANDHI
UNIVERSITY

2019

M.Sc. Zoology Degree Program

(Mahatma Gandhi University Regulations PGCSS2019 from 2019-20 Academic Year)

7. THE PROGRAM STRUCTURE

Course Code	Title of the Course	Type of the Course	Hours per week	Credits
FIRST SEMESTER				
ZL010101	Animal Diversity: Phylogenetic and Taxonomic Approaches	Theory	**4**	**4**
ZL010102	Evolutionary Biology and Ethology	Theory	**4**	**4**
ZL010103	Biochemistry	Theory	**4**	**4**
ZL010104	Biostatistics and Research Methodology	Theory	**3**	**3**
ZL010105	PRACTICAL 1 Animal Diversity: Evolutionary, Ethological and Biochemical methods &Approaches	Practical	**10**	**4**
SECOND SEMESTER				
ZL010201	Field Ecology	Theory	**4**	**4**
ZL010202	Developmental Biology	Theory	**4**	**4**
ZL010203	Genetics and Bioinformatics	Theory	**4**	**4**
ZL010204	Microbiology and Biotechnology	Theory	**3**	**3**
ZL010205	PRACTICAL 2 Diversity of Life: Ecological, Embryological, Hereditary and Microbial Methods and Approaches	Practical	**10**	**4**
THIRD SEMESTER				
ZL010301	Animal Physiology	Theory	**4**	**4**
ZL010302	Cell and Molecular Biology	Theory	**4**	**4**
ZL010303	Biophysics, Instrumentation and Biological Techniques	Theory	**4**	**4**

ZL010304	Immunology	Theory	**3**	**3**
ZL010305	Practical 3 Molecular, Physiological and Immunological Methods and Approaches in Biosciences	Practical	**10**	**4**
FOURTH SEMESTER				
ZL80-830401	Elective 1	Theory	**5**	**4**
ZL80-830402	Elective 2	Theory	**5**	**4**
ZL80-830403	Elective 3	Theory	**5**	**4**
ZL80-830404	Practical	Practical	**10**	**4**
ZL010401	Project			**5**
ZL010402	Viva			**2**

ELECTIVES	COURSE CODE	COURSE TITLE
A – FISHERY SCIENCE	ZL800401	Nutrition, Growth and Physiology of fishes
	ZL800402	Fishery Resource Management
	ZL800403	Fishery Science and Technology
	ZL800404	Practical : Fishery Science – Methods and Approaches
B – ENVIRONMENTAL SCIENCE	ZL810401	Environmental Science: Concepts and Approaches
	ZL810402	Environmental Pollution and Toxicology
	ZL810403	Environmental Management and Development
	ZL810404	Practical : Environmental Science
C -ENTOMOLOGY	ZL820401	Morphology and Taxonomy
	ZL820402	Anatomy and Physiology
	ZL820403	Applied Entomology

	ZL820405	Practical : Morphology, Aanatomy and Ttaxonomy, Insect Physiology and Applied Entomology
D- MEDICAL MICROBIOLOGY	ZL830401	General Microbiology and Parasitology
	ZL830402	Bacteriology, Virology and Mycology
	ZL830403	Clinical Microbiology
	ZL830404	Practical : Microbiology

ZL010101 ANIMAL DIVERSITY: PHYLOGENETIC AND TAXONOMIC APPROACHES

72 Hours (45+27) 4 hrs/week **Credit – 4**

Objectives:

- To understand the phylogenetic relationshipsamong the different groups of animals
- To provide the latest trend in animal taxonomy and phylogenetic systematics

PHYLOGENETIC APPROACHES 45hrs

Module 1 **(20hrs)**

Origin of Animals **(5hrs)**

Progenote, Prokaryotes and Eukaryotes. Extant and ancient stromatolites. Unicellularity to metazoans – consequences and complexity.

Multicellular organisms – Ediacaran fauna, Burgess Shale Fauna. Cambrian explosion, Cropping and Red Queen Principle. Different hypothesis of metazoan origin – Gastraea hypothesis, Planula hypothesis.

Invertebrate Phylogeny **(15hrs)**

Phylogeneticrelationships amongPorifera, Placozoa, Mesozoans; Cnidaria andCtenophora; Platyhelminthes and other acoelomates.

Phylogenetic relationships among the protostome lineage – Mollusca, Annelida and Arthropoda. Evolutionary advantages of Symmetry, Metamerism and Coelom. Reasons for the success of Arthropod.

Adaptive radiation in Mollusca, Annelida, Arthropod and Echinoderms. Position and phylogeny of Hemichordates.

Module II

Vertebrate Phylogeny **(10hrs)**

Affinity with invertebrates and protochordata.Paedomorphosis in vertebrate phylogeny. Jawless vertebrates – Ostracoderms and Cyclostomes. Properties and advantages of bone in vertebrate evolution. Evolution of jawed vertebrates – Acanthodian, Placoderm, Chondricthyes, Osteichthyes. Actinoptegygians and Sarcopterygians.

Module III **(15hrs)**

Phylogeny of Herpetofauna **(8 hrs)**

Amphibian phylogeny– Osteolepiforms, stem tetrapods and early amphibians. Lissamphibians – distribution, diversity, status and threats.

Reptilian phylogeny – amniotic egg, distinguishing features between amniotes from extant amphibians. Adaptive radiation in reptiles. Importance of skull in reptilian classification. Endothermy inDinosours. Causes of extinction.

Phylogeny of Birds and Mammals **(7 hrs)**

Evidences for the origin of birds from reptiles.Mammalian phylogeny and therapsids – significance of teeth, jaws and hearing. Adaptive radiation in mammals. Phylogeny of mammalian orders. Rare, endangered and endemic birds and mammals of Indian subcontinent.

Prerequisite: Classification of mammals

TAXONOMIC APPROACHES **27hrs**

Module IV **(16hrs)**

Biological Classification **(9 hrs)**

Hierarchy of categories and higher taxa. Taxonomic Procedures-collection, preservation, curetting and process of identification (Brief and general account only). Taxonomic characters of different kindsand analysis of variation. Concept of species.
Zoological type – Principles of typification,different kinds of type.
International code of Zoological Nomenclature – features, principles and rules. Phylocode. Zoobank.

New trends in Taxonomy **(7 hrs)**

Modern methods – Morphological, embryological, ecological, behavioural, cytological, biochemical, numerical, molecular. Cytotaxonomy, Chemotaxonomy.

Bar coding of life – basics of barcoding, application of barcode. Molecular operational taxonomic units (MOTU), Integrated operational taxonomic unit (IOTU). Global taxonomic initiative (GTI). Constraints of DNA taxonomy. Integrative taxonomy.
Microtaxonomy and macrotaxonomy. e-taxonomy. Cybertaxonomy. Significance of Taxonomy and biosystematics.

Module V **(11 hrs)**

Taxonomic Keys and Publications **(4 hrs)**

Different types of keys – single access keys, diagnostic and synoptic keys, dichotomous and polytomous keys. Taxonomic keys presentation. Computer aided keys. Merits and demerits of keys.
Types of taxonomic publications – atlas, catalogue, checklist, filed guide, field book, hand book, manual, monographs. Zoological records. Ethics in taxonomy.

Molecular Phylogeny and Systematics **(7 hrs)**

Use of protein and nucleotide sequence in molecular phylogeny. Protein sequence – haemoglobin and cytochrome. Nucleic acid phylogeny. Importance of molecular phylogeny.

Cladistic analysis – Apomorphy, Plesiomorphy, Symplesiomorphy and Synapomorphy. Characteristic features of cladistics. Methodology of cladistics analysis – construction of cladogram. Significance of phylogenetic systematics. Phylogenetic trees. Different kinds – cladogram, phenogram, phylogram, dendrogram, curvogram, eurogram, swoopogram, chronogram.

Recommended Text Books/Reference Books

Anderson,T.A.2001. *Invertebrate Zoology* (2nd edn). Oxford University Press, New Delhi.
Ashok Verma 2017. Principles of Animal Taxonomy. NarosaPublicing home pvt. Ltd.
Barnes, R. D.1987. *Invertebrate Zoology*. Saunders College Publishing/Harcourt Brace; 5th Revised edition
Barrington, E. J. W. 2012. *Invertebrate Structure and Functions*. Affiliated east-west press Pvt. Ltd. New Delhi, 2nd edition.
David, M. H, Craig Moritz and K.M. Barbara.1996. *Molecular Systematics*. Sinauer Associates, Inc.
Hickman Jr., Cleveland, Larry Roberts, Susan Keen, Allan Larson, and David Eisenhour.2011. *Animal Diversity*. McGraw-Hill Companies, Inc. NY
Kapoor, V.C. 2017. *Theory and Practice of Animal Taxonomy*. 8th edition, Oxford and IBH Publishing Co., Pvt. Ltd. New Delhi.
Margulis,Lynn and M.J.Chapman 2001. *Kingdoms and Domains: An Illustrated Guide to the*

Phyla of Life on Earth(4th edn.). W.H.Freeman&Company,USA
Mayer, E.2014. *Principles of Systematic Zoology*. 2nd edition, McGraw Hill Book Company, Inc., NY.
Narendran, T.C. 2008. *An introduction to Taxonomy*. Zoological survey of India.
Strickberger, M.W. 2013. *Evolution*. Jones and Bartett Publishers, London.
Simson G. G. 2012. Principles of animal taxonomy. Scientific publishers, India.
Winston, J.E.2000. *Describing species: Practical Taxonomic Procedures for Biologists*. Columbia University Press,Columbia, USA.

BIOSTATISTICS AND RESEARCH METHODOLOGY

54 hrs (30+24) 3 hrs/week **Credit – 3**

Objectives:

- To impart concepts of statistics and research methodology, and create awareness about the gadgets, tools and accessories of biological research
- To help students improve analytical and critical thinking skills through problem solving
- To enable learners to effectively apply suitable statistical tests in research
- To sensitize students about the ethics involved in research and enable them to come up with innovative research designs
- To equip learners to prepare research papers and project proposals

BIOSTATISTICS **30 hrs**

Module 1 **(9hrs)**

Basics of Biostatistics **(3 hrs)**

Scope and Significance of Biostatistics. Steps in Statistical Investigation, Data and Variable (Collection, Types, Sources).

Statistical Analysis Tools - Parametric and Non-Parametric; Bivariate and Multivariate Analysis. Interpretation and Forecasting.

Measures of Central Tendency – mean, median and mode.

Measures of Dispersion **(6 hrs)**

Introduction, Characteristics. Quartiles and Percentiles. Merits and Demerits of Range, Quartile Deviation, Mean Deviation and Standard Deviation. Relative Measures of Dispersion.

Calculations/Problems for frequency table. Standard error. Skewness and Kurtosis (Brief account only).

Module II **(11hrs)**

Correlation Analysis **(3 hrs)**

Correlation - types and methods of correlation analysis, Problems for Karl Pearson‟s correlation coefficient and Spearman‟s rank correlation.

Regression Analysis **(4 hrs)**

Regression and Line of Best Fit, Types and methods of regression analysis.
Graphic Methods (Scatter method, Curve fitting). Algebraic method (Fitting of strait line through regression equation). Comparing correlation and regression.
Probit Analysis (Brief account only).

Theory of Probability **(4 hrs)**

Measures of Probability and Theorems in Probability. Probability distributions – Binomial, Poisson and Normal (Brief Account only).

Module III **(10hrs)**

Testing of Hypothesis **(7 hrs)**

Hypothesis and types, Confidence Interval, Sampling, Methods and Errors.
Tests of significance (For large and small samples – Critical Ratio and P value).
Z Test (Problem for small samples), Chi- Square Test – test of independence and goodness of fit (Problem for 2×2 table only).
Student"s „t" test (Problem for small samples comparing mean of two variable).
F-test, Analysis of Variance (ANOVA - One way), Kruskal Wallis test (Brief account only). Mc Nemar and Mann Whitney U test (Brief account only).

Mathematical modeling in Biology **(3hrs)**

Introduction to mathematical modeling. Applications: Medicine - models to predict spread of infectious diseases, drug discovery, Systems Biology – Blue Brain project, Ecology – Lotka Volterra model. Length - Weight Relationship. Von- Bertalanffy"s Growth (VBG) Model.
Statistical Software: MS Excel, SPSS; Introduction to „R" (Basics only).

RESEARCH METHODOLOGY **24 hrs**

Module IV **(12hrs)**

Concepts of Research **(4 hrs)**

Scientific temper, Empiricism and Rationalism. Knowledge, Information and Data. Science and Pseudoscience. Basic concepts of research -Meaning, Objectives, Motivation and Approaches. Types of Research - Descriptive/Analytical, Applied/ Fundamental, Quantitative/Qualitative, Conceptual/Empirical. Research methods versus Methodology, Research Process.

Research Formulation **(4 hrs)**

Research formulation -Observation and Facts, Prediction and explanation, Induction, Deduction. Defining and formulating the research problem, Selecting the problem and necessity of defining the problem. Literature review - Importance of literature review in defining a problem, Critical literature review. Theory, Principle, Law and Canon

Research Designs **(4 hrs)**

Research Design -Basic principles, Meaning, Need and features of good design. Types of research designs.

Development of a research plan - Exploration, Description, Diagnosis, Experimentation, determining experimental and sample designs. Case-control studies and cohort studies.

Module V **(12 hrs)**

Scientific Documentation and Communication **(6 hrs)** Structure and components of Scientific Reports – types of Report – Technical Reports and Thesis/dissertations.

Preparing Research papers for journals, Seminars and Conference; Impact factor, Citation Index, h-index. DOI. ISBN & ISSN.

Conventions and strategies of authentication – citation styles, bibliography, referencing and foot notes. Software for managing bibliographies - EndNote.

Presentation techniques - Assignment, Seminar, Debate, Workshop, Colloquium, Conference, Oral presentation, Poster Presentation.

Preparation of Project Proposal. Project funding agencies – UGC, DST, BDT, MoEF. Women Scientists schemes.

Global Information System – BIOSIS, Medline and Medlars, AGRIS, Pubmed, Google Scholar.

Information Science, Extension and Ethics **(6 hrs)**

Sources of Information - Primary and secondary sources.

Library - books, journals, periodicals, reference sources, abstracting and indexing sources, Reviews, Treatise, Monographs.

Online resources – INFLIBNET, e-libraries, e-Books, e-Encyclopedia, e-Journals, e-Thesis, Shodhganga, PG-Pathshala, TED Talk, Institutional Websites. MOOC - SWAYAM, NPTEL. Networking platforms for researchers - Academia, ResearchGate.

Ethics in research - Plagiarism, Plagiarism checking softwares - Turnitin, Viper, Urkund; Citation and Acknowledgement.

Extension: Lab to Field, Extension communication, Extension tools.

Recommended Text Books/Reference Books

1. Chap T. Le.2003.*Introductory Biostatistics*. John Wiley &Sons, NJ, USA.
2. Clough, P. and C.Nutbrown.2002. *A Student's Guide to Methodology: Justifying Enquiry*. Sage, London.
3. Daniel W.W. 2006. *Biostatistics: A Foundation for Analysis in the Health Sciences* (7th edn). John Wiley & Sons, New York.
4. Freedman D. F., Pisani R. and Purves R. 2011. Statistics. Viva Books, New Delhi.
5. Dharmapalan Biju. 2012. *Scientific Research Methodology*. Narosa Publishing House, New Delhi.
6. Gupta S. P. 2014. Statistical methods for CA foundation course. Sultan Chand & Sons,

New Delhi.

7. Kothari C. R. 2009. *Research Methodology: Methods and Techniques* (2ndedn.). NewAge International Publishers, New Delhi.
8. Paul Oliver. 2005. *Writing Your Thesis*. Vistaar Publications.New Delhi.
9. Rajathi A. and P. Chandran, 2010. *SPSS for You*. MJP Publishers, Chennai
10. Samuels M. L., Witmer J. A. and Schaffner A. 2016. Statistics for Life Sciences (5th edn). Pearson Education Inc., New delhi.
11. Sundar Rao P.S.S. and Richard J. 2006. *.Introduction to Biostatistics and Research Methods* (4th edn). Prentice Hall, New Delhi.
12. Zar J. H. 2008. *Biostatistical Analysis* (3rd edn.). Pearson Education Inc., New Delhi

ZL010201 FIELD ECOLOGY

72 Hours (4 hrs./Week) **Credit – 4**

Objectives:

- To provide the knowledge of animal adaptations to a variety of environment
- To learn the different aspects of population and its interactions
- To understand the natural resources and manmade issues on environment and its management

Module I

Animal and Physical Environment **(18 hrs)**

Effect of cold and hot temperature on organisms. Global warming and change of species phenologies. Effect of soil development on nutrient level. Herbivore population and plant nutrient level. Availability of O_2 and Co_2 on growth and distribution of organisms. Water availability and abundance of organism. Significance of salt concentration in soil and water. Effect of soil and water pH on distribution of organisms.
Cybernetic nature of ecosystem, homeostasis and feedback systems.
Animals and nutrient acquisition – herbivory, carnivory, omnivory, detritus feeding.
Animal adaptations to thermal environment – thermal balance, poikilotherms, homeotherms, heterotherms. Animal adaptations to moisture environment – maintenance to water balance, response to drought and flooding. Animal adaptations to light environment.

Prerequisite: Ecosystem concept – structure and function, Productivity, Food chain and food web, Energy flow

Module II

Population Ecology **(15 hrs)**

Properties – patterns of dispersion, dispersal movements, age structure, sex ratio, life table, survivorship curve, density, population growth-exponential and logistic growth, time lags, carrying capacity. Population growth and global warming.
Density dependent and density independent influences. Population fluctuations and cycle.
Extinction – deterministic extinction and stochastic extinction.
Life history strategies – Reproductive strategies, *r* and *k* selection.
Human population growth. Concept of ecological foot print.
Population regulation – dispersal, social dominance, territoriality: types of territory, territorial defence, floaters, home range.
Aggregation, Allee‟s principle, Isolation
Metapopulation – Concept, Structure

Module III **(17 hrs)**

Population Interactions: Competition and Predation **(10 hrs)**

Interspecific competition – Competitive Exclusion Principle, Resource partitioning and utilization. Niche, Niche overlap, Niche width, Niche responses-niche compression and niche shift. Character replacement. Ecological and evolutionary effects of competition.
Predation – Antipredator adaptations.
Foraging theory – optimal diet, foraging efficiency, risk-sensitive foraging.
Animal prey defence – chemical defence, warning coloration and mimicry, cryptic colouration, armor and defence, behavioural defence, predatory sanitation.
Predator offence – hunting tactics, cryptic coloration and mimicry in predators, adaptations of hunting. Cannibalism, Intraguild predation (IGP).

Population Interactions: Parasitism and mutualism **(7 hrs)**

Characteristics and life-cycle of parasite, host response to parasitism –biochemical, abnormal growth, sterility, behavioural change, mate selection. Social parasitism – Brood parasitism and kleptoparasitism.
Types of defence against parasites by host. Invasive parasite. Parasitism and climate change. Non-native parasite and biological control.
Mutualism – Origin and types. Dispersive mutualism, defensive mutualism, resource based mutualism. Mutualistic relationship of human with crops.

Module IV

Applied Ecology **(10 hrs)**

Air, water, soil and radioactive pollution – Sources, causes and consequences. Disposal of radioactive waste. Ecological indicators.
Concept of waste – types and sources of solid waste. Health and environmental implications. E- waste-types and management aspect. Environmental biotechnology and solid waste management – aerobic and anaerobic systems. Concept of bioreactors in waste management. Liquid wastes and Sewages.
Scope of bioremediation. Phytoremediation, bio-augmentation, biofilms, bio filters, bio scrubbers and trickling filters.

Module V

Resource Ecology **(12 hrs)**

Currents status of forest resources and deforestation in India. Fresh water sources, water scarcity and water conservation measures. Wet lands, its importance, reclamation and conservation measures. Sand mining and its impacts.
Energy resources – solar, fossil fuels, hydro, tidal, wind, geothermal and nuclear. Recent issues in energy production and utilization. Green technology and sustainable development.
Depletion of natural resources and its impacts on life.
Ecosystem monitoring – GIS and its application, Role of remote sensing in ecology. Environmental Impact Assessment (EIA)-Tools and technique. Ecosystem modelling (Brief account only).

Recommended Text Books/Reference Books

Abbasi, S.A. and Ramasami, E.V 1998. Biotechnological Methods of Pollution Control. Oxford University Press, Hyderabad.

Benton, A.H. and Werner, W.E 1976. Field Biology and Ecology. Tata McGraw Hill, New Delhi. Boitani, L and T.K.Fuller2000.Research Techniques in Animal Ecology. Columbia University Press, USA

Daniel, C.D 2010.Environmental Science.(8thedn.).Jones and Bartlett Publishers.

Misra, S P and Pandey S. N.2009. Essential Environmental Studies. AneBooksPvt.

Ltd. Odum, E P. 2017.Fundamentals of Ecology, India edition.

Peter Stilling, 2012. Ecology: Global Insights and Investigations. The McGraw-Hill companies, New york

Peter, H.R., Berg, L.R., and Hassenzahl, D.M. 2008. Environment. (5thedn.).John Wiley Publishers. Pianka, E. R. 1981. Competition and Niche Theory in "Theoretical Ecology". (2ndedn.).In: May, R.M. (Ed.). Blackwell, London.

Rana,S.V.S. 2009.Essentials of Ecology and Environmental Science.(4thedn.). PHI learning Pvt. Ltd., New Delhi

Simons, I.G. 1981. Ecology of Natural Resources. Edwin-Arnold Ltd., London.

Robert Leo Smith and Thomas M Smith 2001. Ecology and Field biology (6th Edition), New York

ZL010202 DEVELOPMENTAL BIOLOGY

72 Hours (4hrs/week) **Credit – 4**

Objectives:

- To introduce the concepts and process in developmental biology
- To help students understand and appreciate the genetic mechanisms and the unfolding of the same during development
- To expose the learner to the new developments in embryology and its relevance to Man

Module I **(24hrs)**

Introduction: Basic Concepts of Development **(14 hrs)**

Potency of embryonic cells, Commitment, Specification (Autonomous and Conditional), Induction,eye lens induction, Regional specificity of induction, Genetic specificity of induction, Competence, Determination and Differentiation, Morphogenetic gradients, Cell fate and cell lineages.Genomic equivalence and Cytoplasmic determinants, DNA methylation, Genomic imprinting.

Fertilization and Early development **(10 hrs)**

Fertilization-(biochemical and molecular aspects, cell surface molecules in sperm-egg recognition), Polyspermy. Earlydevelopmentandaxisspecificationin*Caenorhabditiselegans*,

Vulval induction in *C.elegans*

Module II

Development of Model organisms—Drosophila (14 hrs)

Early development and axis specification in Drosophila (cleavage, midblastula transition, gastrulation).Anterior-posteriorpatterninginDrosophila(Maternaleffectgenes,zygoticgenes,gapgenes,pairrulegenes,segmentpolaritygenes;homeoticselectorgenes,realisatorgenes),Dorsal-ventralpatterningandleftrightpatterning,Dorsalproteingradient.

Module III

Axis and Pattern Formation in Amphibians (16 hrs)

Axis formation in amphibia -- Anterior-posterior patterning in Amphibia.Hox code hypothesis.Nieuwkoopcentreandmesodermalpolarity.Molecularbasisofmesoderminduction.Transcriptionfactorsinducedintheorganizer.Neuralinduction.Vertebrate limb development.

Module IV (14hrs)

Cellular Interactions in Development (6 hrs)

Paracrine factors - Hedgehog family, Wnt family, TGF, BMP. Surface receptors and signal transduction pathway - RTK pathway,Smadpathway,Wnt pathway, Hedgehog pathway and cell death pathway.

Metamorphosis and Regeneration (8 hrs)

Metamorphosis of Amphibians and Insects; Hormonal control of metamorphosis.Heterochrony- neoteny, progenesis (Brief accounts); regeneration - different types of regeneration; Histological processes during regeneration; Polarity and Metaplasia in regeneration; Lens regeneration in amphibia.

Module V

Human Welfare and Developmental Biology (4 hrs)

Stem cells and their applications, ethical issues. Malformations and disruptions,Gene – phene relationship, Autophene, Allophene and Pleiotrophy; Environmental oestrogens.

Recommended Text Books/Reference Books

Balinsky, B.I.2004. An Introduction to Embryology.W.B.SaundersCo.,Philadelphia.

Berril, N.J. 1979. Developmental Biology.Tata McGraw-Hill Pub.Co.Ltd.,New

Delhi.

Gilbert, S.F. 2016. Developmental Biology (11thedn).Sinauer Associates Inc., Publishers, Masachusettes, USA

Hopper, A.F. and Hart ,N.H.1985. Foundations of Animal Development.Oxford University Press, Oxford.

Lewis Wolpert. 2007. Principles of Development. Oxford University Press.Oxford Saunders,

J.W.1982. Developmental Biology-Patterns,Principles and Problems. Macmillan Publishing Co.,New York.

Subramanian, T. 2002. Developmental Biology.Alpha Science International Ltd.,New Delhi

Sunstard,D.P., Simmons, M. J. and J.B Jenkins.1997. Principles of Genetics.John Wiley and sons, New York.

Wolpert L. and C. Tickle. 2011. Principles of Development.(4thedn). Oxford University Press, Oxford.

ZL010204 MICROBIOLOGY AND BIOTECHNOLOGY

54 Hours (18+27) (3hrs/week) **Credit- 3**

Objectives:

- To provide an over view of the microbial world, its structure and function
- To understand the fundamental aspects of the basic biology of bacteria and viruses
- To give students an intensive and in-depth learning in the field of biotechnology
- To familiarize the student with emerging field of biotechnology
- To understand the modern biotechnology practices and approaches with an emphasis in technology application, medical, industrial, environmental and agricultural areas and nanomedicine
- To familiarize the students with public policy, biosafety, and intellectual property rights issues related to biotechnology

MICROBIOLOGY **18hrs**

Module I **(10hrs)**

General Characters and Classification of microbes **(4 hrs)** General characters of microorganisms- bacteria, virus, fungi, Outline classification of microrganisms

Functional Anatomy of Prokaryotic Cells - Cell structure, plasma membrane, cytoskeleton, cytoplasm, nucleoid, cytoplasmic inclusions. The prokaryotic cell envelope, peptidoglycan

structure, gram positive and negative cell walls.Components outside the cell wall: capsules, slime layers, pili and fimbriae, flagella and motility.

Methods in Microbiology **(6 hrs)**

Culture medium, methods of isolation, pure culture techniques, microbial strain identification – cultural and biochemical, Control of microorganism- physical, chemical and antimicrobial agents.

Module II

Microbial Growth and Interactions **(8 hrs)**

Nutrient requirements, growth factors, uptake of nutrients by the cell. Growth curve. Physical requirements for bacterial growth and influence of environmental factors on growth. Mirobes in nutrient cycling.

Symbiosis, commensalism. Mutualism between microbes, microbes and plants, microbes and animals. Cooperation, competition, predation, antagonism. Parasitism, plant parasites, animal parasites. Microbial communication system- Quorum sensing, Biofilms.

BIOTECHNOLOGY **36 hrs.**

Module III

Recombinant DNA Technology - Tools and Techniques **(12 hrs)**

Introduction – rDNA and cloning, Restriction enzymes and DNA modifying enzymes.

Vectors: cloning and expression vectors - Plasmids, Ti and Ri plasmids, cosmids, phagemids, bacteriophage, SV40, vectors with combination features; PUC19 and Bluescript vectors, shuttle vectors, viral vectors, BAC and YAC vectors. Adaptors, Linkers

Methods of gene transfer: chemical transfection methods: calcium chloride, PEG, polyplex, DEAE dextran. Physical methods: electroporation, microinjection, particle bombardment, ultrasonication, liposome mediated transfer. Biological methods: use of vectors, Selection and screening of recombinants, insertional activation- blue white screening, Generation of cDNA and genomic library.

Basic techniques in Biotechnology

Polymerase chain Reaction- different types and applications, Gene cloning, Chromosome walking, chromosome jumping, DNA foot printing.

DNA sequencing methods- Maxam and Gilberts chemical degradation method, Sanger and Coulson method, Automated DNA sequencers.

Protein sequencing methods

Module IV

Animal Biotechnology and health care **(12 hrs)**

Cell and Tissue culture: Basic techniques of mammalian cell culture Growth media- types,

biology and characterization of cultured cells.Measurement of viability and cytotoxicity, organ culture.
Cryopreservation and maintenance of cell line
Transgenic animals – production and its applications. Gene knockout and gene knock, Site directed mutagenesis, molecular chimeras
Gene therapy:Exvivo, Invivo, Insitu- Cell and tissue engineering, Gene products in medicine – Humulin, Erythropoietin, Growth Hormone/Somatostatin, tPA, Interferon. DNA vaccine
Biosensors and Biochip.

Module VI. Biotechnology in Industry, Agriculture and Environment (5 hrs) Fermentation technology – Stages of fermentation - Fermentation products (antibiotics, alcohol, amino acids, organic acids, vinegar, vitamins, and fuels). Enzyme engineering and applications. Transgenic plants, Biological nitrogen fixation; Nif genes, Nitrogen fixers – Bio fertilizers (Rhizobium, Azotobacter, Azospirillum, VAM) - Bio pesticides (Bacterial, Fungal, Viral). Terminator gene technology

Module V

Nanobiotechnology (3 hrs)

Introduction, Nanobiotechnological devices, Types and applications of Nanobiosensors, Drug delivery technologies, personalized nanomedicine.

Intellectual Property Rights, Biosafety and Bioethics (4 hrs)

Introduction to Intellectual PropertyRights, Types of IP: Patents, Trademarks, Copyrights.
Basics of Patents Types of patents; Indian Patent Act 1970; Recent Amendments, Protection of New GMOs. IPs of relevance to Biotechnology and few Case Studies (Rice, Neem, Curcumin). Introduction to History of GATT, WTO, WIPO and TRIPS.
Biosafety concepts and issues. Biosafety protocol 2000.
Bioethics: Principles of bioethics: autonomy, human rights, beneficence, privacy, justice, equity

Recommended Text Books/Reference

Books Microbiology

Ananthanarayanan, R. and Jayaram Panikar, C.K. (2013). Text Book of Microbiology. University Press, Hyderabad.
Arora,D.R. and Arora,B. (2008). *Text Book of Microbiology*. CBS Publishers and Distributers, New Delhi
Atlas RM. (2005). *Principles of Microbiology*. 4th edition. WMT.Brown Publishers.
Chakraborty, P. A. (2009). *Text Book of Microbiology*. New Central Book Agency.New Delhi
Harma and Kanika (2009). *Manual of Microbiology Tools and Techniques*. Ane Books Pvt. Ltd. New Delhi
Ingraham, J. L. and Ingraham, C. A. (2000). *Microbiology* (2ndedn). Brooks/Cole-Thomson Learning,MA,USA
Pelczar MJ, Chan ECS and Krieg NR. (2010). *Microbiology*. 8th edition. McGraw Hill Book

Company.
Talaro, Park.,Kathelee, N and Talaro,Arthur. (2002). *Foundations of Microbiology*.McGraw Hill Higher Education,NY
Wheelis Mark (2010). *Principles of Modern Microbiology*. Jones and Bartlett Publishers,NY,USA.
Willey JM, Sherwood LM, and Woolverton CJ. (2008). *Prescott, Harley and Klein's Microbiology*. 8th edition. McGraw Hill Higher Education.

Biotechnology

Sathyanarayana, U. (2009), Biotechnology, Books and allied (p) Ltd
Singh, B.D. (2009). Biotechnology, Kalyani publishers.
Click, B. R. and Pasternak (2002). Molecular Biotechnology: Principle and applications of recombinant DNA. ASM Press.
Dale, Jeremy W and Schantz, Malcom V. (2002). *From Gene to Genomes*. John Wiley and SonsLtd,NY,USA
Das, H.K. (2007). *Text book of Biotechnology*.Wiley India Pvt. Ltd. New Delhi
Doyle, Alan and Griffith Bryan J. (1999). *Cell and Tissue Culture- Laboratory Procedures in Biotechnology*.WileyInternational,NY.
Freshney, Ian, R. (2006). *Culture of Animal Cell* (5th edn).Wiley- Liss publications.
Jenkins, N (Ed) (1999). Animal cell biotechnology: Methods and Protocols. Humana press, New Jersey.
Pandian, T.T. and Kandavel, D. (2008). *Text Book of Biotechnology*. I.K International Publishing House, New Delhi.

ZL010303 BIOPHYSICS, INSTRUMENTATION AND BIOLOGICAL TECHNIQUES

72Hours (18 + 54)4hrs/week **Credit – 4**

Objectives:
To understand the biological system and processes based on physical principles
To provide and insight on the tools and techniques of various instruments available for biochemical and biophysical studies
To train the learner the operational skills of different instruments required in Zoology

BIOPHYSICS **18hrs**

Module 1

Diffusion and Osmosis **(6hrs)**
Diffusion – Kinetics of diffusion. Fick‟s law and diffusion coefficient.Gibb‟s Donnan equilibrium. Application of diffusion processes in biology: haemolysis. Vant Hoff‟s laws. Osmotic concentration, Osmotic pressure and osmotic gradient.

Biological significance of osmosis in animals and plants.

Bioenergetics **(6hrs)**

Reversible thermodynamics and irreversible thermodynamics; Systems – open, closed and isolated. Photo bioenergetics. Photosynthesis – light and dark reactions, Redox couple and redox potential. Chemo-bioenergetics: electron transport and oxidative phosphorylation, Chemiosmotic theory and binding change mechanism of ATP synthesis.

Radiation Biophysics **(6hrs)**

Interaction of radiation with matter – Photoelectric effect, ion pair production, absorption and scattering of electrons. Biological effects of radiation: effect on nucleic acids, proteins, enzymes and carbohydrates. Cellular effects of radiation: somatic and genetic. Nuclear medicine: Internally administered radioisotopes. Radioiodine in thyroid function analysis.

INSTRUMENTATION & BIOLOGICAL TECHNIQUES **54hrs**

Module II

Microscopy and Histological Techniques **(18hrs)**

Microscopy **(10hrs)**

Differential Interference contrast (Nomarsky) microscopy, Fluorescence microscopy,Confocal microscope, Scanning Tunnelling, Electron microscope - TEM, SEM,Specimen preparation-Shadow casting, Freeze fracturing, Freeze etching,Negative staining. Microphotography, Atomic force microscope

Histological Techniques **(8hrs)**

Types of microtomes and microtomy.Fixation, preparation of temporary and permanent slides, whole mounts, smears, squashes and sections.Cytochemical and histological method, Histochemistry of nucleic acids, detection of carbohydrates, proteins and lipids.

Module III

Separation Techniques **(20hrs)**

Centrifugation **(2hrs)**

Basic principle and application. Differential, density and ultracentrifugation.

Chromatography **(10 hrs)**

Basic principles, working and applications of Thin-layer chromatography, Ion – exchange and Affinity chromatography; High performance liquid chromatography (HPLC), Fast protein liquid chromatography (FPLC),Gel permeation chromatography.

Electrophoresis **(8 h rs)**

Gel electrophoresis– PAGE, SDS and non SDS,2D Gel electrophoresis, Isoelectric focusing,Density gradient gel electrophoresis, Disc electrophoresis, High voltage electrophoresis, Capillary gel electrophoresis, Electrophoretic mobility shift assay (EMSA).

Module IV

Advanced Techniques and Applications (12hrs)

Colorimetry (2 hrs)

Principle and applications of colorimetry and spectrophotometry- Beer Lambert law

Spectroscopy (10hrs)

Fourier-Transform infrared spectroscopy (FTIR), Raman spectroscopy, Circular dichroism spectroscopy,Flame emission spectroscopy, Atomic absorption spectroscopy, Nuclear Magnetic- resonance spectroscopy (NMR)and Electron Spin Resonance (ESR) spectroscopy, Mass spectroscopy- Different types and applications: MALDI-TOF, LCMS, Tandem Mass Spectrometry.

Module V (4hrs)

Radioisotope Detection and Measurement (2hrs)

Dosimetry: Ionization chamber, GM counter, Solid and liquid scintillation counters, Autoradiography.

Biomimetics technology (2 hrs)

Principles and applications-Bio-Nanorobotics,Artificial muscles using Electroactive polymers, Multifunctional materials

Recommended Text Books/Reference Books

Alonso, A., and Arrondo, J.L.R.2006. *Advanced Techniques in Biophysics*.Springer,UK

Arora, M. P. 2007. *Biophysics*. Himalaya Publishing House, New Delhi

Bar-Cohen, Yoseph. *Biomimetics: Biologically-Inspired Technologies*. 2006. CRC Press.

Das, D. 1991. *Biophysics and Biophysical Chemistry*. Academic Publishers, Calcutta

Edward, A.L. 1997. *Radiation Biophysics*. Academic Press,NewYork,USA

Ernster, L. (Ed.). 1985. *Bioenergetics*. Elsevier, NewYork,USA

Ghatak K.L. 2011.*Techniques and Methods in Biology*. PHI Learning Pvt. Ltd. New Delhi Gupta A. 2009. *Instrumentation and Bio-Analytical Techniques*.PragatiPrakashan,

Meerut Hoope, W. et.al. 1983. *Biophysics*. Springer Verlag, Berlin

Keith Wilson and John Walker. 2010. *Principles and techniques of Biochemistry and Molecular Biology*.7th Edition.

Lehninger, A.L.1971. *Bioenergetics*. W.A. Benjamin, London,UK

Narayanan, P. 2000. *Essentials of Biophysics*.New Age International (P) Ltd. Publishers, New Delhi

Nelson D.L. & Cox, M.M., 2006. *Lehninger's Biochemistry*, W.H. Freeman and company, USA Pradeep T. 2007. *NANO: The Essentials. Understanding Nanoscience and Nanotechnology*.Tata McGraw Hill Education Pvt. Ltd., New Delhi

Roy, R.N. 1996. *A Textbook of Biophysics*. New Central Book Agency (P) Ltd. Calcutta

Sandhu, G.S. 1990. *Research Techniques in Biological Sciences*. Anmol Publications, New Delhi

Srivastava,P.K. 2006. *Elementary Biophysics.AnIntroduction*.Narosa Publishing House, New Delhi

Trunk Dung Ngo. 2015. *Biomimetic Technologies: Principles and Applications.*Woodhead Publishing

Varghese, T. and Balakrishna, K.M.2012. *Nanotechnology-An Introduction to Synthesis, Properties and Applications of Nanomaterials*. Atlantic Publishers and Distributors. (P) Ltd. New Delhi

ZL800402 FISHERY RESOURCES AND MANAGEMENT

90 Hours (5 hrs./Week) **Credit – 4**

Objectives:

- To impart knowledge in inland and marine fishery resources of India
- To educate the students on the oceanographic concepts related to fisheries
- To impart theoretical knowledge on application of remote sensing and GIS in fisheries
- To impart theoretical knowledge of benthic ecology.
- To impart knowledge on interactions between aquaculture and the environment.

Module I **(30hrs)**

Inland Fishery Resources **(10 hrs)**

Categorization of different fresh water and brackish water resources – Ponds, lakes, tanks, rivers, reservoirs, estuaries, brackish water lagoons, wetlands, mangroves and derelict water bodies.Important economically important fin and shell fish resources of Kerala. Scope of inland fishery in Kerala.

Riverine fishery resources – major riverine fisheries in India. Penninsularrivers and its fishery diversity with special reference to endemic species in Kerala. Present status of riverine fishery in Kerala.

Reservoir fisheries – Classification of reservoirs. Reservoir fishery of Kerala. Methods for enhancement of productivity.

Estuarine fisheries – Classification of estuaries. Status and potential of estuarine fisheries in Kerala. Status of mangrove fishery in India.

Inland Fishery – Problems, conservation and management (20 hrs)

Direct and indirect effects of human intervention and management challenges in riverine fishery. Present trend of dwindling riverine fishery resources. Habitat modification and improvement – restoration, rehabilitation of channels and flood plain. Stock enhancement strategies.

Methods for conservation, management and enhancement of productivity in reservoirs.

Effect of dam on riverine fishery. Protection and restoration of fish movements – different types of fish passes and enhancement of fish migration.

Strategies for the conservation and management of estuarine system.

Mangrove ecosystem – degradation and its problems on fisheries.

Derelict water bodies – problem and fishery management aspects.

Riverine sand mining and its effect on benthic biodiversity and fisheries. Invasive species and its effect of indigenous species and fishery.

Activities of FIRMA. Matsyafed – objectives and different activities for the development of fishery of Kerala.

Module II (15hrs)

Marine fishery resources (7 hrs)

Major fishing regions of the sea. Important finfish and shellfish resources in demersal and pelagic system. Sea weeds.

Issues and challenges of managing multi-gear fisheries.

Mud bank formation and significance. Mud bank fishery in Kerala.

Marine Biodiversity and conservation (8 hrs)

Marine biodiversity – threats, planning and management aspects.

IUCN criteria – Red list, Wild life Protection Act, International treaties and conventions, Marine protected areas, Sanctuaries and Biosphere reserves. Establishment of National marine parks, *in situ* and ex *situ* conservation. Coastal tourism.

Module III

Fisheries Oceanography (20 hrs)

Oceanographic factors in fisheries – effects of physicochemical (Salinity, temperature, pH, light, pressure, dissolved gasses and nutrients) and biological oceanographic factors on

adaptation, behaviour, abundance and production of organisms.

Synoptic oceanographic analysis – currents, waves, tides, amplitudes, stratification, related chemical factors, upwelling and circulation patterns.

Fisheries forecasts – Remote sensing, Global positioning system (GPS). Application of remote sensing in fisheries. Eco-sounders and Sonar – applications in fishery. Interpretation and use of thermal structure in fisheries.

Factors affecting coastal marine fishery – environmental factors influencing the seasonal variations in fish catches in the Arabian Sea. Potential fish zones (PFZ). Fishery trawling ban in Kerala.

Module IV

Aquaculture and Management Aspects **(20 hrs)**

Fresh water fish farm – survey of site, layout, soil and water quality requirements. Pond fertilization. Different kinds of fertilizers and manures. Bio-fertilizers, use of treated sewage for pond fertilization.

Methods of culture fishes of Indian major Carps, exotic Carps, Catfishes, Murrels, Tilapiaand Prawns.

Methods of culture of grey mullet, milk fish, crabs, shrimps. Traditional (Bheries, Pokkali) and modern methods of prawn culture. Culture of pearl oyster, edible oyster and sea mussels.

Integrated fish culture. Composite fish culture. Integrated farming and aquaponics. Benefits of aquaponics.

Ornamental fishery and its export from India. Aquarium fishes. Setting up and maintenance of an aquarium.

Management of hatcheries and farms. Methods for control and management of aquatic weeds in the system.Role of microorganisms in fish production, microbial load and algal bloom. Algal bloom control.

Module V

Fisheries Education **(5 hrs)**

Objectives and functions of Fisheries Institutes – Central Institutes of Fisheries Education (CIFE), Central Inland Capture Fisheries Research Institute (CICFRI), Central Marine Fisheries Research Institute (CMFRI), Central Institute of Fisheries, Nautical and Engineering Training (CIFNET), Central Institute of fisheries technology (CIFT), National Institute of Oceanography (NIO), National Institute of Fisheries Post Harvest Technology and Training (NIFPHATT).Central Institute of Brackish water Aquaculture (CIBA), Fishery survey of India (Brief account only).

Recommended Text Books/Reference Books

Aravind Kumar, 2004. *Fishery Management*. APH Publ. Corpn., New Delhi, 371 pp
Badapanda, K.C. 2012. *Aquaculture*Vol.1 .Narendra Publishing House, Delhi, 496pp.
Balakrishnan Nair N and Thampi D M 1980. *A text book of marine ecology*. Publisher Macmillan
Carter RWG. 1998. *Coastal Environments: An Introduction to the Physical, Ecological and Cultural Systems of Coastlines*. Academic Press.
Dholakia A D 2001. *Fisheries and Aquatic Resources of India*. Daya Publishing House, New Delhi.
De Silva SS & Anderson TA. 1995. *Fish Nutrition in Aquaculture*. Chapman & Hall.
Jhingran VG. 1991. *Fish and Fisheries of India*. Hindustan Publ. Corp.
Laevastu T & Hayes ML. 1981. *Fisheries Oceanography and Ecology*. Fishing News Books. Lalli CM & Parsons TR. 1993. *Biological Oceanography: An Introduction*. Elsevier.
Long, A.C. 2012. *Fish feeding and integrated fish farming*. Cybertech Publications, Delhi.
Miller CB. 2004. *Biological Oceanography*. Blackwell.
Patro&Lingaraj. 2012. *Fisheries & Aquaculture*. Sonali Publication, Delhi, 473pp
Pillay TVR &Kutty MN. 2005. *Aquaculture: Principles and Practices*. 2nd Ed. Blackwell.
Pillai N.G.K 2011. *Marine fisheries in India*, ICAR, New Delhi
Pandey N &Davendra SM. 2008. *Integrated Fish Farming*. Daya Publ.
House. Reddy MPM. 2007. *Ocean Environment and Fisheries*. Science Publ.
Sakhare, V.B. 2012. *Inland fisheries*. Daya publishing house, Delhi, 326pp.
Sharma A.P. 2012. *Management issues in Inland Fisheries and Aquaculture.*Narendra Publishing House, Delhi, 243pp.
Sugunan, V.V. 1995. *Riverine Fisheries of India*. FAO Publication, 423 pp.
Sugunan V.V. 1997. *Reservoir Fisheries of India*. Daya Publ. House.
Welcomme RL. 2001. *Inland Fisheries: Ecology and Management*. Fishing News Books.
Society of Fisheries Technology (India), 2000. *Riverine and Reservoir fisheries of India*. Proceedings of the National Seminar on Riverine and Reservoir Fisheries – Challenges and Strategies, 2001, Cochin.

ZL800403 Fishery Science and Technology

90 Hours (5 hrs./Week) **Credit-4**

Objectives:

- To understand the advances in aquaculture
- To outline an overview on the potential marine resources for bioactive compounds and pharmaceuticals
- To give detailed insight into various aspects of freezing of fish and thermal/ heat processing.
- To understand various aspects of quality assurance system, quality management and national/international certification system.
- To learn factory sanitation and hygiene, water quality and standard
- To provide information on various fish by-products and fishing methods

Module I **(27hrs)**

Aquaculture Biotechnology **(20 hrs)**

Fish breeding – Induced breeding and hypophysation: synthetic and natural hormones, cryopreservation of gametes and artificial fertilization. Application of biotechnology for accelerating gonadal growth and manipulation of the duration of spawning.

Transgenesis – methods of gene transfer in fishes, screening for transgenics, applications, regulation of GMOs, IPR, evaluation of GFP transgenics.

Gene bank and conservation – conservation of gametes and embryos.

Algal technology – microalgae: indoor and mass culture methods, biotechnological approaches for production of important microalgae, single cell protein from Spirulina, raceway system of micro algae culture, vitamins, minerals and omega3 fatty acids from micro algae, enrichment of micro algae with micronutrients.

Post harvest biotechnology – delaying spoilage, detection of toxic substances and pathogenic microbes, biosensors for toxins.

Marine Biotechnology **(7 hrs)**

Marine resources – biodiversity, marine natural products, valuable chemicals, biomedical and bioactive compounds from marine organisms, commercial bio-products from marine organisms, green fluorescent protein form jelly fish and its application, marine organisms as a sources of polysaccharides, antiviral, anticancer and anti-inflamatory compounds. Commercially important enzymes-xylanase, agarase, proteaess, chitinases, lipases, cellulae and phytase.

Module II

Advances in Feed Technology **(15 hrs)**

Feed formulation – least cost formulation, linear programming. Quality of feed ingredients and their biochemical composition. Protein and energy supplements. Premixes of vitamins and

minerals. Antioxidants in diets. Toxins in feeds. Exogenous enzymes. Feed probiotics and their role. Feed additives. Water stability of diets.

Feed technology – micro encapsulated feeds, micro coated feeds, micro particulate feeds and bio capsulated feeds, mycotoxins and their effects on feeds.

Feed manufacture – processing of feed mixtures, steam pelleting. Stability of nutrients. Factors affecting feed manufacture. Effects of processing on the nutritional value of feeds. Process of reducing anti-nutritional factors. Feed mills. Quality control of feed. Storage of

feed and feed deterioration.

Module III

Technology of fish freezing **(12 hrs)**

Crystallization, homogeneous and heterogeneous nucleation, super cooling, crystal growth eutectic point, location of ice crystals in tissue, physical changes during freezing.
Technological aspects of freezing: slow and rapid freezing, methods of freezing, comparison of various freezing methods, selection of a freezing method, product processing, packaging and different types of freezers.
Chemical treatments prior to freezing: antioxidants, cryoprotectants and other addictives, theories of cryopreservation, glazing
Frozen storage: physical and chemical changes, freezer burn and recrystallization, different types of recrystallization.
Different methods of thawing frozen fish, advantages and disadvantages. Recent advances in fish thawing.

Module IV **(21hrs)**

Thermal processing of fishery products **(8 hrs)**

Principles of thermal processing. Mechanism of heat transfer: conduction, convention, radiation and dielectric and microwave heating, heat resistant of bacteria and spores. Thermal death time. Significance of thermal death curve. Heating equipment.
Canning process, steps involved, process flow, addictives, HTST processing and aseptic canning, principles and process details, canning machinery and equipment.
Spoilage of canned food, physical, chemical and microbial. Thermo bacteriology, death of bacteria, auto sterilisation bacteriology of canned/heat processed fishery product, examination of canned and seams.

Fishery By-products **(5 hrs)**

Traditional fishery by-products: fish meal and fish oil – preparation and uses. Processing of wastes – prawn heads, chitin, chitosan, fish protein concentrate (FPC) preparation. Uses of shell, isinglass, glue, guano, fins and leathers. Packaging, storage and transport of fish products.

Quality control in processing industry **(8 hrs)**

Plant sanitation and hygiene. Water quality and standard. Inspection system.
Quality assessment of fish and fishery products – physical, organoleptic and microbiological quality standards. National and International standards. Integrated food law.

Sensory evaluation of fish and fish products, basic aspect, different methods of evaluation.

Module V

Fishing Methods **(15 hrs)**

Crafts and gears used for fishing in inland and marine waters. Gears – types and designs, operation and efficiency. Destructive and prohibited fishing practices. Recent advances in fishing method. Fishing using electricity, light. Bycatch reduction devices: definition, types of bycatch reduction devices and the principles of operation. Fish finders – ecosounders and sonar and their use. Different type of turtle excluder devices (TEDs). Advanced communication systems – VHF, SSB, Inmarsat system. Vessel monitoring systems (VMS): Important uses, role in fisheries management.

Fishing harbours – classification, facilities, layout of a typical fishing harbour. Fishing harbours of Kerala coast.

Recommended Text Books/Reference Books

Balachandran KK. 2001. *Post-harvest Technology of Fish and Fish Products*. DayaPubl.House.

Fingerman M, Nagabushana M & Thompson R. 1998. *Recent Advances in Marine Biotechnology*. Vol.II. Science Publ.

Fingermann, Milton, Nagabhushanam&Rachakonda. 2000. *Recent Advances in Marine Biotechnology*. Oxford & IBH publishing Co. Pvt. Ltd., Delhi, 382pp

Fusetani N. 2000. *Drugs from Sea*. Karger Publ.

Gopakumar K. (Ed.) 2002. *Text Book of Fish Processing Technology*. ICAR

Huss HH, Jakobsen M & Liston J. 1991. *Quality Assurance in the Fish Industry*. Elsevier.

Lakra WS, Abidi SAH, Mukherjee SC &Ayyappan S. 2004. *Fisheries Biotechnology*. Narendra Publ. House.

Nair PR. 2008. *Biotechnology and Genetics in Fisheries and Aquaculture*. Dominant Publ.

Nagabhushanam R, Diwan AD, Zahurnec BJ &Sarojini R. 2004. *Biotechnology of Aquatic Animals*. Science Publ.

Nambudiri DD. 2006. *Technology of Fishery Products*. Fishing Chimes.

Ninawe A. S &Khedkar G D, 2009. *Nutrition in Aquaculture*. Narendra Publishing house, Delhi Pandian TJ, Strüssmann CA & Marian MP. 2005. *Fish Genetics and Aquaculture Biotechnology*. Science Publ.

Reddy PVGK, Ayyappan S, Thampy DM &Gopalakrishna. 2005. *Text Book of Fish Genetics and Biotechnology*. ICAR.

Sen DP. 2005. *Advances in Fish Processing Technology*. Allied Publ.

Venugopal V. 2006. *Seafood Processing*. Taylor & Francis.

Vincent K &Omachonu JER. 2004. *Principles of Total Quality.* CRC Press.

Zeathen P. 1984. *Thermal Processing and Quality of Foods*. Elsevier.

Training Programme on Seafood quality Assurance. Central Institute of Fisheries Technology (ICAR).

Quality Assurance in seafood processing, 2000. Published by CIFT and Society of Fisheries Technology.

MODEL III-
(B.Sc. Food Science & Quality Control) under Choice Based Credit System

Consolidated Scheme for All Semesters in the Format

SEM	Title with Course Code	Course Category	Hours Per Week	Credit	Marks	
					Intl	Extl
I	Common- English	Common	5	4	20	80
	Complementary-Chemistry (T)	Complementary	4	2	20	80
	Complementary-Zoology(T)/ Mathematics(optional)	Complementary	4 / 4	2 / 3	20	80
	Complementary-Chemistry Practicals ***(Practical Exam only in II ndSemester)***	Complementary Practical	1	1	-	-
	Complementary-Zoology Practicals ***(Practical Exam only in II ndSemester)***	Complementary Practical	1	1	-	-
	Core- Basic Nutrition-FS1CRT01	Core	3	3	20	80
	Core- Basic Food Chemistry-FS1CRT02	Core	3	3	20	80
	Core- -Methodology in the Discipline of Food Science - FS1CRT03	Core	4	3	20	80
TOTAL			**25**	**19(ZOOLOGY)/ 19(MATHS)**		
	Common- English	Common	5	4	20	80
	Complementary-Chemistry(T)	Complementary	4	2	20	80

II	Complementary-Zoology(T)/ Mathematics(optional)	Complementary	4 /4	2/ 3	20	80
	Complementary Chemistry (P) ***(Univ.Practical Exam)***	Complementary Practicals	1	1	40	60
	Complementary-Zoology (P) ***(Univ.Practical Exam)***	Complementary Practicals	1	1	40	60
	Core- Food Commodities- FS2CRT04	Core	3	3	20	80

	Core- Food Preservation- FS2CRT05	Core	3	3	20	80
	Core- Food Microbiology, Sanitation and Hygiene -FS2CRT06	Core	4	3	20	80
	Core- (OJT)Industrial Training- FS2OJP07	Core		2		100
	TOTAL		**25**	**21(ZOOLOGY)/ 21(MATHS)**		
III	Complementary Chemistry (T)	Complementary	4	3	20	80
	Complementary- Zoology (T) / Mathematics (optional)	Complementary	4/4	3/4	20	80
	Complementary- Chemistry Practicals ***(Practical Exams in IVth Semester)***	Complementary Practical	1	1	-	-
	Complementary- Zoology Practicals ***(Practical Exams in IVth Semester)***	Complementary Practical	1	1	-	-
	Core- Processing Technology of AnimalsFoods - FS3CRT08	Core	5	3	20	80

	Core-Sensory Evaluation-FS3CRT09	Core	5	3	20	80
	Core-Food Packaging Materials & Testing-FS3CRT10	Core	5	3	20	80
	TOTAL		**25**	**17(ZOOLOGY)/ 17(MATHS)**		
IV	Complementary-Chemistry(T)	Complementary	4	3	20	80
	Complementary-Zoology(T)/ Mathematics(Optional)	Complementary	4/4	3/4	20	80
	Complementary-Chemistry Practical ***(Univ.Practical Exam)***	Complementary Practical	1	1	40	60

	Complementary - Zoology Practical ***(Univ.Practical Exam)***	Complementary Practical	1	1	40	60
	Core- Processing Technology of Plant foods- FS4CRT11	Core	5	3	20	80
	Core- Analytical Instrumentation- FS4CRT12	Core	5	4	20	80
	Core- Food Safety & Quality Assurance- FS4CRT13	Core	5	4	20	80
	Core (OJT)- IndustrialTraining- FS4OJP14			2		100
	TOTAL		**25**	**21(ZOOLOGY/ 21(MATHS)**		
V	Core- Food Analysis (Theory)-FS5CRT15	Core	2	4	20	80
	Core-Food Toxicology- FS5CRT16	Core	2	4	20	80
	Core- Environmental studies and Human Rights- FS5CRT17	Core	4	4	20	80
	Open Course -FS5OPT18, FS5OPT19, FS5OPT20	Core	4	3	20	80
	Practical-Core- Basic Microbiology FS5CRP21	Core Practical	5	2	20	80

	Practical-Core- Food Analysis & Adulteration testing -Practical I FS5CRP22	Core Practical	4	2	20	80
	Practical-Core- Food Chemistry Practical FS5CRP23	Core Practical	4	2	20	80
	TOTAL		**25**	**21**		
VI	Core- Entrepreneurship Development & Management in food Industry-FS6CRT24	Core	3	4	20	80
	Core- Food Adulteration & Testing- FS6CRT25	Core	3	4	20	80

	Choice Based -FS6CBT26, FS6CBT27, FS6CBT28	Core	4	4	20	80
	Advanced Food Microbiology - FS6CRP29	Core Practical	5	2	20	80
	Food Analysis & Adulteration testing -Practical II – FS6CRP30	Core Practical	4	2	20	80
	Advanced Food Chemistry Practical- FS6CRP31	Core Practical	4	2	20	80
	Core- Project/ Dissertation- FS6DSP32	Core	2	3	20	80
	TOTAL		**25**	**21**		

SEMESTER V

FS5CRT17-ENVIRONMENTAL STUDIES AND HUMAN RIGHTS

Credit – 4 **72 hrs**

Module I

Unit 1 : Multidisciplinary nature of environmental studies

Definition, scope and importance

(**2 hrs**) Need for public awareness.

Unit 2 : Natural Resources :

Renewable and non-renewable resources : Natural resources and associated problems.

a) **Forest resources** : Use and over-exploitation, deforestation, case studies.
Timber extraction, mining, dams and their effects on forest and tribal people.

b) **Water resources** : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.

c) **Mineral resources** : Use and exploitation, environmental effects of extracting and using mineral resources, case studies.

d) **Food resources** : World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.

e) **Energy resources**: Growing energy needs, renewable and non renewable energy sources,
use of alternate energy sources, Case studies.

f) **Land resources**: Land as a resource, land degradation, man induced landslides, soil erosion and desertification

- Role of individual in conservation of natural resources.
- Equitable use of resources for sustainable life styles. (**10 hrs**)

Unit 3: Ecosystems

- Concept of an ecosystem
- Structure and function of an ecosystem
- Producers, consumers and decomposers
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids.
- Introduction, types, characteristic features, structure and function of the given ecosystem:- Forest ecosystem

(**6 hrs**)

Module II

Unit 1: Biodiversity and its conservation

- Introduction
- Biogeograhical classification of India

- Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values.
- India as a mega-diversity nation
- Hot-sports of biodiversity
- Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts
- Endangered and endemic species of India

(8 hrs)

Unit 2: Environmental Pollution

Definition

Causes, effects and control measures of: -

a. Air pollution
b. Water pollution
c. Soil pollution
d. Marine pollution
e. Noise pollution
f. Thermal pollution
g. Nuclear hazards

- Solid waste Management: Causes, effects and control measures of urban and industrial wastes.
- Role of an individual in prevention of pollution
- Pollution case studies
- Disaster management: floods, earthquake, cyclone and landslides. **(8 hrs)**

Unit 3: Social Issues and the Environment

- Urban problems related to energy
- Water conservation, rain water harvesting, watershed management
- Resettlement and rehabilitation of people: its problems and concerns, Case studies
- Environmental ethics: Issues and possible solutions
- Climate change, global warming, acid rain, ozone layer depletion , nuclear accidents and holocaust, Case studies
- Consumerism and waste products
- Environment Protection Act
- Air (Prevention and Control of Pollution) Act
- Water (Prevention and control of Pollution) Act
- Wildlife Protection Act
- Forest Conservation Act
- Issues involved in enforcement of environmental legislation
- Public awareness **(10 hrs)**

Module III

UNIT I : Waste Management in Food Industries 10 Hrs

- Classification and characterization of food industrial wastes from fruit and vegetable processing industry, beverage industry, fish, meat and poultry industry, sugar industry and dairy industry; Waste disposal methods – physical, chemical and biological;

Module – IV

Unit I: Treatment Methods of Liquid & Solid Wastes

10hrs

- Treatment methods for liquid wastes from food process industries; Design of activated sludge process, Rotating biological contactors, Trickling filters
- Treatment methods of solid wastes: Biological composting, drying and incineration; Design of solid waste management system: Landfill digester,

Module – V

Unit 1- Human Rights– An Introduction to Human Rights, Meaning, concept and development, Three Generations of Human Rights (Civil and Political Rights; Economic, Social and Cultural Rights).

Unit-2 Human Rights and United Nations – contributions, main human rights related organs - UNESCO,UNICEF, WHO, ILO, Declarations for women and children, Universal Declaration of Human Rights.

Human Rights in India – Fundamental rights and Indian Constitution, Rights for children and women, Scheduled Castes, Scheduled Tribes, Other Backward Castes and Minorities

Unit-3 Environment and Human Rights - Right to Clean Environment and Public Safety: Issues of Industrial Pollution, Prevention, Rehabilitation and Safety Aspect of New Technologies such as Chemical and Nuclear Technologies, Issues of Waste Disposal, Protection of Environment

Conservation of natural resources and human rights: Reports, Case studies and policy formulation. Conservation issues of western ghats- mention Gadgil committee report, Kasthurirengan report. Over exploitation of ground water resources, marine fisheries, sand mining etc. **(8 Hrs)**

Internal: **Field study**

- Visit to a local area to document environmental grassland/ hill /mountain
- Visit a local polluted site – Urban/Rural/Industrial/Agricultural Study of common plants, insects, birds etc
- Study of simple ecosystem-pond, river, hill slopes, etc (Field work Equal to 5 lecture hours)

REFERENCES

1. Bharucha Erach, Text Book of Environmental Studies for undergraduate Courses. University Press, IInd Edition 2013 (TB)
2. Clark.R.S., Marine Pollution, Clanderson Press Oxford (Ref)
3. Cunningham, W.P.Cooper, T.H.Gorhani, E & Hepworth, M.T.2001 Environmental Encyclopedia, Jaico Publ. House. Mumbai. 1196p .(Ref)
4. Dc A.K.Enviornmental Chemistry, Wiley Eastern Ltd.(Ref)
5. Down to Earth, Centre for Science and Environment (Ref)
6. Heywood, V.H & Watson, R.T. 1995. Global Biodiversity Assessment, Cambridge University Press 1140pb (Ref)
7. Jadhav.H & Bhosale.V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284p (Ref)
8. Mekinney, M.L & Schock.R.M. 1996 Environmental Science Systems & Solutions. Web enhanced edition 639p (Ref)
9. Miller T.G. Jr., Environmental Science, Wadsworth Publishing Co. (TB)
10. Odum.E.P 1971. Fundamentals of Ecology. W.B. Saunders Co. USA 574p (Ref)
11. Rao.M.N & Datta.A.K. 1987 Waste Water treatment Oxford & IBII Publication Co.Pvt.Ltd.345p (Ref)
12. Rajagopalan. R, Environmental Studies from crisis and cure, Oxford University Press, Published: 2016 (TB)
13. Sharma B.K., 2001. Environmental Chemistry. Geol Publ. House, Meerut (Ref)
14. Townsend C., Harper J, and Michael Begon, Essentials of Ecology, Blackwell Science (Ref)
15. Trivedi R.K., Handbook of Environmental Laws, Rules Guidelines, Compliances and Stadards, Vol I and II, Enviro Media (Ref)
16. Trivedi R. K. and P.K. Goel, Introduction to air pollution, Techno-Science Publication (Ref)
17. Wanger K.D., 1998 Environmental Management. W.B. Saunders Co. Philadelphia, USA 499p (Ref)
18. (M) Magazine (R) Reference (TB) Textbook

Human Rights

1. Amartya Sen, The Idea Justice, New Delhi: Penguin Books, 2009.
2. Chatrath, K. J.S., (ed.), Education for Human Rights and Democracy (Shimla: Indian Institute of Advanced Studies, 1998)
3. Law Relating to Human Rights, Asia Law House,2001.

4. Shireesh Pal Singh, Human Rights Education in 21st Century, Discovery Publishing House Pvt.Ltd, New Delhi,

5. S.K.Khanna, Children And The Human Rights, Common Wealth Publishers,1998. 2011.

6. Sudhir Kapoor, Human Rights in 21st Century,Mangal Deep Publications, Jaipur,2001.

7. United Nations Development Programme, Human Development Report 2004: Cultural Liberty in Today's Diverse World, New Delhi: Oxford University Press, 2004.

MAHATMAGANDHIUNIVERSITY

SYLLUBUS FOR ENGLISH LANGUAGE AND LITERATURE (MODEL1)

2017 ADMISSIONSONWARDS

SCHEME

Semester	Title	Course Category/Code	Hours Per Week	Credits	Internal Assessment	External Exam
1	Fine-tune YourEnglish	Common Course-1 EN1CCT01	5	4	20	80
1	Pearls fromthe Deep	Common Course-2 EN1CCT02	4	3	20	80
1	Second Language	Common Course	4	4	20	80
1	Methodologyof Literary Studies	Core Course-1 EN1CRT01	6	4	20	80
1	History/Political Science/ Sociology/ Psychology	ComplementaryCourse	6	4	20	80
2		Common Course-3 EN2CCT03	5	4	20	80
2	Savouring the Classics	Common Course-4 EN2CCT04	4	3	20	80
2	Introducing Language and Literature	Core Course -2 EN2CRT02	6	4	20	80
2	Second Language	Common Course	4	4	20	80
2	History /Political Science / Sociology/ Psychology	ComplementaryCourse	6	4	20	80
3		Common Course-5 EN3CCT05	5	4	20	80
3	Second Language	Common Course	5	4	20	80
3		Core Course -3 EN3CRT03	4	4	20	80
3	Symphonyof Verse	Core Course -4 EN3CRT04	5	4	20	80
3	Evolution ofLiterary Movements:the Shapers of Destiny	ComplementaryCourse3 - EN3CMT03	6	4	20	80
4		Common Course-6 EN4CCT06	5	4	20	80
4	Second Language	Common Course	5	4	20	80
4	Modes of Fiction	Core Course -5 EN4CRT05	4	4	20	80
4	Language andLinguistics	Core Course -6 EN4CRT06	5	4	20	80
4		ComplementaryCourse4	6	4	20	80

		- EN4CMT04				
5		EN5CROP01 Appreciating Films EN5CROP02 TheatreStudies EN5CROP03	4	3	20	80
5	Acts on the Stage	Core Course -7 EN5CRT07	6	5	20	80
5	LiteraryCriticismand Theory	Core Course -8 EN5CRT08	5	4	20	80
5	Indian Writing in English	Core Course -9 EN5CRT09	5	4	20	80
5		Core Course EN5CRENT0	5	4	20	80
6	Choice Based Course	EN6CBT01Comparative Literature EN6CBT02 Modern Malayalam Literaturein Translation EN6CBT03 Regional Literatures in Translation EN6CBT04 Voices from the Margins	4	4	20	80
6		Core Course -10 EN6CRT10	5	4	20	80
6		Core Course -11 EN6CRT11	5	4	20	80
6		Core Course -12 EN6CRT12	5	4	20	80
6	Modern World Literature	Core Course -13 EN6CRT13	5	4	20	80
6	Project	EN6PR01	1	2	20	80

MAHATMA GANDHI UNIVERSITY

SYLLABI FOR COMMON COURSES - UG PROGRAMMES

2017 ADMISSIONS ONWARDS

COURSE 3 - Issues that Matter

Course Code	**EN2CC03**
Title of the course	**Issues that Matter**
Semester in which the course is to be taught	**2**
No. of credits	**4**
No. of contact hours	**90**

AIM OF THE COURSE

To sensitize the learners to contemporary issues of concern.

OBJECTIVES

By the end of the course, the learner should be able to:

1. Identify the major issues of contemporary significance
2. Respond rationally and positively to the issues raised
3. Internalise the values imparted through the selections.

COURSE OUTLINE

Module 1 **(18 hours)**

Luigi Pirandello: War

Judith Wright: The Old Prison

Arundhati Roy: Public Power in the Age of Empire

Module 2 **(18 hours)**

Bertolt Brecht: The Burning of the Books

W. H. Auden: Refugee Blues

Romila Thapar: What Secularism is and Where it Needs to be Headed

Module 3 **(18 hours)**

Zitkala- Sa: A Westward Trip

Bandhumadhav: The Poisoned Bread

Temsula Ao: The Pot Maker

Module 4 **(18 hours)**

Khushwant Singh: A Hosanna to the Monsoons

Ayyappa Paniker: Where are the woods, children?

Sarah Joseph: *Gift in Green* [chapter 2] - Hagar: A Story of a Woman and Water

Module 5 **(18 hours)**

Ghassan Kanafani: Six Eagles and a Child

Sanchari Pal: The Inspiring Story of How Sikkim Became India‘s Cleanest State

Indrajit Singh Rathore: Hermaphrodite

Core Text: ***Issues that Matter***

MAHATMA GANDHI UNIVERSITY

SYLLABI FOR COMMON COURSES - UG PROGRAMMES

2017 ADMISSIONS ONWARDS

COURSE 5 - Literature and/as Identity

Course Code	**EN3CC05**
Title of the course	**Literature and/as Identity**
Semester in which the course is to be taught	**3**
No. of credits	**4**
No. of contact hours	**90**

AIM OF THE COURSE

The course is intended to sensitivise students to the various ways in which literature serves as a platform for forming, consolidating, critiquing and re-working the issue of _identity' at various levels.

OBJECTIVES OF THE COURSE

On completion of the course, the student should be aware of the following:
1. The subtle negotiations of Indigenous and Diasporic identities with-in Literature.
2. The fissures, the tensions and the interstices present in South Asian regional identities.
3. The emergence of Life Writing and alternate/alternative/marginal identities.

COURSE OUTLINE

Module 1 (Diasporic Identities) **(18 hours)**

Agha Shahid Ali: I See Kashmir from New Delhi at Midnight
M.G. Vassanji: Leaving
Imtiaz Dharker: At the Lahore Karhai
Chitra Banerjee Divakaruni: Indian Movie, New Jersey

Module 2 (South Asian Identities) **(18 hours)**

C. V. Velupillai: No State, No Dog
Sadaat Hasan Manto: The Dog of Tetwal
Intizar Hussain: A Chronicle of the Peacocks
Selina Hossain: Double War

Module 3 (Life Writings) **(18 hours)**

Malcolm X: ―Nightmare‖, excerpt from *The Autobiography of Malcolm X*.
Sashi Deshpande: Learning to be a Mother in *Janani – Mothers, Daughters, Motherhood*, (ed.) Rinki Bhattacharya.

Module 4 (Indigenous Identities) **(18 hours)**

Excerpts from *Binti*, the Santhal creation song of cosmology, the *Bhilli Mahabharat* and *Garhwali Songs* in *Painted Words - An Anthology of Tribal Literature* - Edited by G. N. Devy.
Amos Tutuola: *The Palm-Wine Drinkard*. [Excerpt]

Module 5 (Alter Identities) **(18 hours)**

Nathaniel Hawthorne: The Birth Mark
John Henrik Clarke: The Boy Who Painted Christ Black
Ruskin Bond: The Girl on the Train

Core Text: *Literature and/as Identity*

MAHATMA GANDHI UNIVERSITY

SYLLABI FOR COMMON COURSES - UG PROGRAMMES

2017 ADMISSIONS ONWARDS

COURSE 6 – Illuminations

Course Code	**EN4CC06**
Title of the course	**Illuminations**
Semester in which the course is to be taught	**4**
No. of credits	**4**
No. of contact hours	**90**

AIM OF THE COURSE

To acquaint the learners with different forms of inspiring and motivating literature.

OUTLINE OF THE COURSE

At the end of the course, the student shall be able to:
1. maintain a positive attitude to life.
2. evaluate and overcome setbacks based on the insights that these texts provide.

COURSE OUTLINE

Module 1 [Life Sketches] **(18 hours)**

Helen Keller: Three Days to See
Jesse Owens: My Greatest Olympic Prize
Dominic Lapierre: Mother Teresa

Module 2 [Essays] **(18 hours)**

Lafcadio Hearn: On Reading
Stephen Leacock: Are the Rich Happy?
A.G. Gardiner: On Courage

Module 3 [Speeches] **(18 hours)**

J. K. Rowling: The fringe benefits of failure and the importance of imagination
Malala Yousafzai: Nobel Lecture

Module 4 [Short Stories] **(18 hours)**

Oscar Wilde: The Nightingale and the Rose
George Orwell: The Miser

John Galsworthy: Quality
Paolo Coelho: The Beggar and the Baker

Module 5 [Poems] **(18 hours)**

William Ernest Henley: Invictus
Robert Frost: The Road Not Taken
Kahlil Gibran: Of Good and Evil
Joyce Kilmer: Trees

Core Text: *Illuminations*

MAHATMA GANDHI UNIVERSITY

SYLLABI FOR CORE COURSES - UG PROGRAMMES

2017 ADMISSIONS ONWARDS

COURSE 3 – Harmony of Prose

Course Code	**EN3CR03**
Title of the course	**Harmony of Prose**
Semester in which the course is to be taught	**3**
No. of credits	**4**
No. of contact hours	**90**

AIM OF THE COURSE

The student is given space to mature in the presence of glorious essays, both Western and Non-Western.

OBJECTIVES OF THE COURSE

On completion of the course, the student shall be:

1. familiar with varied prose styles of expression.
2. aware of eloquent expressions, brevity and aptness of voicing ideas in stylish language.

COURSE OUTLINE

Module 1 **(18 hours)**

Francis Bacon: Of Friendship

Jonathan Swift: The Spider and the Bee

Joseph Addison: Meditations in Westminster Abbey

Module 2 **(18 hours)**

Samuel Johnson: Death of Dryden

Charles Lamb: Dream Children; a reverie

William Hazlitt: The Fight

Module 3 **(18 hours)**

Robert Lynd: Forgetting

Virginia Woolf: A Room of One‘s Own (an extract)

Aldous Huxley: The Beauty Industry

Module 4 **(18 hours)**

Nirad C. Choudhari: Indian Crowds (extract from *The Autobiography of an Unknown Indian*)

Amartya Sen: Sharing the World

A. K. Ramanujan: A Flowery Tree: A Woman‘s Tale

Module 5 **(18 hours)**

Kamau Brathwaite: Nation Language

Pico Iyer: In Praise of the Humble Coma

William Dalrymple: The Dancer of Kannur (extract from *Nine Lives*)

Core Text: ***Harmony of Prose***

Semester 5

Name of the Course	**Environmental Studies and Human Rights**
Course Code	IEN5CR01
Semester	5
Number of credits	4
Number of contact hours	90

Core module syllabus for Environmental Studies& Human Rights for under- graduate courses of all branches of higher education

VISION

The importance of environmental science and environmental studies cannot be disputed. The need for sustainable development is a key to the future of mankind. Continuing problems of pollution, solid waste disposal, degradation of environment, issues like economic productivity and national security, Global warming, the depletion of ozone layer and loss of biodiversity have made everyone aware of environmental issues. The United Nations Conference on Environment and Development held in Rio de Janerio in 1992 and World Summit on Sustainable Development at Johannesburg in 2002 have drawn the attention of people around the globe to the deteriorating condition of our environment. It is clear that no citizen of the earth can afford to be ignorant of environment issues.

India is rich in biodiversity which provides various resources for people. Only about 1.7 million living organisms have been described and named globally. Still many more remain to be identified and described. Attempts are made to conserve them in ex-situ and in-situ situations. Intellectual property rights (IPRs) have become important in a bio diversity-rich country like India to protect microbes, plants and animals that have useful genetic properties.
Destruction of habitats, over-use of energy resource and environmental pollution has been found to be responsible for the loss of a large number of life-forms. It is feared that a large proportion of life on earth may get wiped out in the near future.

In spite of the deteriorating status of the environment, study of environment has so far not received adequate attention in our academic programme. Recognizing this, the Hon'ble

Supreme Court directed the UGC to introduce a basic course on environment at every level in college education. Accordingly, the matter was considered by UGC and it was decided that a six months compulsory core module course in environmental studies maybe prepared and compulsorily implemented in all the University/Colleges of India.

The syllabus of environmental studies includes five modules including human rights. The first two modules are purely environmental studies according to the UGC directions. The second two modules are strictly related with the core subject and fifth module is for human rights.

OBJECTIVES

Environmental Education encourages students to research, investigate how and why things happen, and make their own decisions about complex environmental issues by developing and enhancing critical and creative thinking skills. It helps to foster a new generation of informed consumers, workers, as well as policy or decision makers.

Environmental Education helps students to understand how their decisions and actions affectthe environment, builds knowledge and skills necessary to address complex environmental issues, as well as ways we can take action to keep our environment healthy and sustainable for the future. It encourages character building, and develops positive attitudes and values.

To develop the sense of awareness among the students about the environment and its various problems and to help the students in realizing the inter- relationship between man and environment and helps to protect the nature and natural resources.

To help the students in acquiring the basic knowledge about environment and the socialnorms that provides unity with environmental characteristics and create positive attitudeabout the environment.

Module 1: Regional 18 Hours

1. O N V Kuruppu – A Requiem for Earth
2. Vaikom Muhammed Basheer – The Inheritors of the Earth
3. Swarnalatha Rangarajan and Sreejith Varma- The Plachimada Struggle: A David-and-Goliath Story (extract from _Introduction‘ to Mayilamma)

Module 2: National 18 Hours

1. Ruskin Bond – An Island of Trees
2. Indra Munshi – Loss of Land and Livelihood (extract from _Introduction‘ to TheAdivasi Question)
3. Toru Dutt – Our Casuarina Tree

4. Ashish Kaul – Load Shedding

Module 3: Global 18 Hours

1. Walt Whitman – Give me the Splendid Silent Sun
2. K R Srinivasa Iyengar – An Unfinished Continent
3. Swarnalatha Rangarajan – Swamp speak

Module 4: Environmental Science 18 Hours

1. Erach Bharucha – Global Warming
2. Erach Bharucha – Environmental Values
3. Aloka Debi – Ecology: Types of Ecosystems
4. Aloka Debi - Waste Management

Module 5: Human Rights 18 Hours

Unit 1 - Human Rights: An Introduction to Human Rights

Meaning, concept and development –History of Human Rights-Different Generations of Human Rights- Universality of Human Rights- Basic International Human Rights Documents - UDHR,ICCPR,ICESCR.-Value dimensions of Human Rights

Unit 2 - Human Rights and United Nations

Human Rights co-ordination within UN system- Role of UN secretariat- The Economic and Social Council- The Commission Human Rights-The Security Council and Human rights- The Committee on the Elimination of Racial Discrimination- The Committee on the Elimination of Discrimination Against Women- the Committee on Economic, Socialand Cultural Rights- The Human Rights Committee- Critical Appraisal of UN Human Rights Regime.

Unit. 3- Human Rights National Perspective

Human Rights in Indian Constitution – Fundamental Rights- The Constitutional Contextof Human Rights-directive Principles of State Policy and Human Rights- Human Rights of Women and children –minorities- Prisoners- Science Technology and Human Rights- National Human Rights Commission- State Human Rights Commission- Human Rights Awareness in Education.
Core Text: Module 1 to 4- Nature Anthem: A Textbook on Environmental Studies

Reference texts for Module 5:

1. Basic Documents in Human Rights: Ian Brownlie
2. Universal Human Rights in Theory and Practice: Jack Donelly
3. Future of Human Rights: Upendra Baxi
4. Understanding Human Rights : An Overview: O P Dhiman
5. Reforming Human Rights: D.P.Khanna

6. Human Rights in India Historical, Social and Political Perspectives: Chiranjivi J Nirmal
7. Human Rights in Post colonial India: Edited by Om Prakash Dwivedi and VG Julie Rajan

CORE TEXT: Nature Anthem :A Textbook of Environmental Studies. Editors Anitha R, Jimmy James. Orient BlackSwan, 2019.

MAHATMA GANDHI UNIVERSITY

SYLLABI FOR CORE COURSES - UG PROGRAMMES

2017 ADMISSIONS ONWARDS

COURSE 10 – Postcolonial Literatures

Course Code	**EN6CR10**
Title of the course	**Postcolonial Literatures**
Semester in which the course is to be taught	**6**
No. of credits	**4**
No. of contact hours	**90**

AIM OF THE COURSE

To familiarize the students the varied dimension s of postcolonial subjectivity through theory and literature.

OBJECTIVES OF THE COURSE

On completion of the course, the student will:
1. be aware of the social, political, cultural aspects of postcolonial societies.
2. realise the impact of colonialism and imperialism on native cultural identities.
3. get an insight into the links between language, history and culture.

COURSE OUTLINE

Module 1 [The Domain] **(36 hours)**

Bill Ashcroft, Gareth Griffiths and Helen Tiffin: Introduction of *The Empire Writes Back*
Edward Said: Orientalism [an excerpt]
Frantz Fanon: The Fact of Blackness

Module 2 [Poetry] **(18 hours)**

Faiz Ahmed Faiz: A Prison Evening
A. K. Ramanujan: Small Scale Reflections on a Great House
David Malouf: Revolving Days
Wole Soyinka: Civilian and Soldier
Margaret Atwood: Journey to the Interior

Module 3 [Fiction] **(18 hours)**

Peter Carey: *Jack Maggs*

Module 4 [Drama] **(18 hours)**

Ngugi wa Thiong'o: *The Trial of Dedan Kimathi*

Core Text: *Postcolonial Literatures*

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SYLLABI FOR CORE COURSES - UG PROGRAMMES

2017 ADMISSIONS ONWARDS

COURSE 11 – Women Writing

Course Code	**EN6CR11**
Title of the course	**Women Writing**
Semester in which the course is to be taught	**6**
No. of credits	**4**
No. of contact hours	**90**

AIM OF THE COURSE

To introduce the theoretical and literary responses by women and the concerns that govern feminist literature.

OBJECTIVES OF THE COURSE

On completion of the course, the students will be able to:
1. Critically respond to literature from a feminist perspective.
2. Realize how the patriarchal notions pervade in the social and cultural scenario and howfeminism exposes these notions.
3. identify how stereotypical representations of women were constructed and how these are subverted by feminist writing

COURSE OUTLINE

Module 1 [Essays] **(36 hours)**

Betty Friedan: The Problem that has No Name (Chapter 1 of *The Feminine Mystique*)
Elaine Showalter: Towards a Feminist Poetics
Patricia Hill Collins: Mammies, Matriarchs and Other Controlling Images (Chapter 4 of *Black Feminist Thought* pp. 79-84

Module 2 [Poetry] **(18 hours)**

Anna Akhmatova: Lot‘s Wife

Mamta Kalia: After Eight Years of Marriage
Julia Alvarez: Women‘s Work
Meena Alexander: House of a Thousand Doors
Sutapa Bhattacharya: Draupadi
Kristine Batey: Lot‘s Wife
Vijayalakshmi: Bhagavatha

Module 3 [Short Fiction] **(18 hours)**

Charlotte Perkins Gilman: The Yellow Wallpaper
Willa Cather: A Wagner Matinee
Isabel Allende: And of the Clay We Created
Sara Joseph: The Passion of Mary

Module 4 [Fiction] **(18 hours)**

Alice Walker: *The Color Purple*

Core Text: *Women Writing*

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SYLLABI FOR CORE COURSES - UG PROGRAMMES

2017 ADMISSIONS ONWARDS

COURSE 12 – American Literature

Course Code	**EN6CR12**
Title of the course	**American Literature**
Semester in which the course is to be taught	**6**
No. of credits	**4**
No. of contact hours	**90**

AIM OF THE COURSE

To enable the students to have a holistic understanding of the heterogeneity of American culture and to study works of prose, poetry, drama, and fiction in relation to their historical and cultural contexts.

OBJECTIVES OF THE COURSE

At the end of the course, the student shall be:
1. familiar with the evolution of various literary movements in American literature.
2. acquainted with the major authors in American Literary History.

COURSE OUTLINE

Module 1 [Prose] **(18 hours)**

M. H Abrams: Periods of American Literature in *A Glossary of Literary Terms*
Robert E. Spiller: The Last Frontier in *The Cycle of American Literature*
Ralph Waldo Emerson: Gifts
James Baldwin: If Black English isn't Language, then Tell me, What is?

Module 2 [Poetry] **(18 hours)**

Walt Whitman: I Hear America Singing
Emily Dickinson: I dwell in Possibility
Robert Frost: Love and a Question
e. e. cummings: Let's Live Suddenly without Thinking
Langston Hughes: Let America be America Again
Allen Ginsberg: A Supermarket in California
Adrienne Rich: In a Classroom

Marianne Moore: Poetry

Module 3 [Short Story] **(18 hours)**

Nathaniel Hawthorne: My Kinsman, Major Molineux
Edgar Allan Poe: The Purloined Letter
Mark Twain: How I Edited an Agricultural Paper
Leslie Marmon Silko: Lullaby
Kate Chopin: A Respectable Woman

Module 4 [Drama] **(18 hours)**

Arthur Miller: *The Crucible*

Module 5 [Novel] **(18 hours)**

Harper Lee: *To Kill a Mocking Bird*

Core Text: ***American Literature***

MAHATMA GANDHI UNIVERSITY

SYLLABI FOR COMPLEMENTARY COURSES - UG PROGRAMMES

2017 ADMISSIONS ONWARDS
SEMESTER 4 (BA English Model 1 & Model 2)

COURSE 4: The Evolution of Literary Movements: The Cross Currents of Change

Course Code	**EN4CM04**
Title of the course	**The Evolution of Literary Movements: The Cross Currents of Change**
Semester in which the course is to be taught	**4**
No. of credits	**4**
No. of contact hours	**108**

AIM OF THE COURSE

To enable students to have a notion of the evolution of literature and to help them perceive the interplay of social processes and literature

OBJECTIVES OF THE COURSE

By the end of the course it is hoped that:
1. students will be competent to understand literature against the backdrop of history.
2. students will be inspired to contribute dynamically to historical and literary processes.

COURSE OUTLINE

Module 1 [Literature and Revolution] **(36 hours)**

a. The interaction between the French Revolution and the literature of the age
b. Literature in the context of the Russian Revolution

Module 2 [Literature and Renaissance] **(18 hours)**

a. The social context of the burgeoning of literature in Latin America
b. Kerala at the dawn of awakening

Module 3 [Literature and Liberation] **(36 hours)**

a. Literature and feminism
b. Dalit writing

Module 4 [Literature and the Third World] **(18 hours)**

a. Articulating the Postcolonial Experience
b. An overview of New Literatures

Core Text: Dr B Keralavarma. *Evolution of Literary Movements: The Cross-currents of Change*.

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SYLLABI FOR OPEN COURSES - UG PROGRAMMES

2017 ADMISSIONS ONWARDS

COURSE 3 – English for Careers

Course Code	**EN5CROP03**
Title of the course	**English for Careers**
Semester in which the course is to be taught	**5**
No. of credits	**4**
No. of contact hours	**72**

AIM OF THE COURSE

To make the students competent in their job-seeking, job-getting and job-holding needs. The course shall cater to equipping the students in Comprehensive Language Enhancement.

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OBJECTIVES OF THE COURSE

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

1. To develop communicative skills, which will enable them to prepare for a career and function effectively in it.
2. To equip themselves in oral and written communication to enhance their academic and professional use of language.
3. To train themselves in making effective presentations.

COURSE OUTLINE

Module 1[Oral and Written Skills for Jobs and Careers] **(18 hours)**

a. Applying for jobs—Preparing Resumes—Writing Cover letters.
b. Preparing for interviews—Taking Interviews—Post-Interview follow-up-Promotion
c. Interviews—Group Discussions

Module 2[Correctness of Language Usage] **(18 hours)**

a. Common errors in communication and how to avoid them.
b. Some Notions—Conventional and idiomatic expressions.
c. Today‘s Vocabulary
d. Grammar for Grown-ups

Module 3 [Facing People] **(18 hours)**

a. Structuring and delivering a presentation.
b. Communication in the Management context.
c. Importance of Words/Language.
d. Horizontal and Democratic Communication.

Module 4 [Keeping the Job] **(18 hours)**

a. Human relationships in academic and professional life.
b. Front Office Management and Keeping public relations (Telephone Skills)
c. Soft Skills for Team Building.
d. Keeping the Job—Professional Ethics
e. Managing Multiple Roles- Healthy Balancing of family and career.

Reading List

1. Samson et al. *English for Life - 4***.** New Delhi: Cambridge UP.

2. Vasudev, Murthy. *Effective Proposal Writing***.** New Delhi: Response, 2006.

3. *Towards Academic English: Developing Effective Writing Skills***.** New Delhi: Cambridge UP, 2007.

4. *Oxford Guide to Effective Writing and Speak*ing. OUP, 2007.

5. Bhatnagar, R. P. *English for Competitive Examinations***.** New Delhi: Macmillan, 2009.

6. *English for Careers***.** *Pearson*.

7. *ABC of Common Grammatical Errors*. Macmillan, 2009

8. Kaul, Asha. *The Effective Presentation*. New Delhi: Response

9. Shepherd, Kerry. *Presentations at Conferences, Seminars and Meetings***.** New Delhi: Response.

10. Vilanilam, J. V. *More Effective Communication: a Manuel for Professionals.* Response 2008

11. *English for Career Development***.** Orient Longman, 2006.

Core Text: *English for Careers*

BACHELOR OF BUSINESS ADMINISTRATION

M.G. UNIVERSITY KOTTAYAM

(FACULTY OF BUSINESS STUDIES)

REVISED SYLLABUS FOR THE ACADEMIC YEARS STARTING 2017-18

COURSE DESIGN

Semester	Title	Course	Credit	Hours/week
First semester				
BA1CRT01		Core	4	6
BA1CRT02	Business Accounting	Core	4	6
BA1CMT03	Fundamentals of Business Mathematics	Complementary	4	4
BA1CMT04	Fundamentals of Business Statistics	Complementary	4	4
BA1CCT05	English Paper –I	Common	4	5
			20	**25**
Second semester				
BA2CRT06	Cost and Management Accounting	Core	4	6
BA2CRT07		Core	4	6
BA2CMT08	Mathematics for Management	Complementary	4	4
BA2CMT09	Statistics for Management	Complementary	4	4
BA2CCT10	English Paper –II	Common	4	5
			20	**25**
Third Semester				
BA3CRT11		Core	4	5
BA3CRT12		Core	4	5
BA3CRT13		Core	4	5
BA3CMT14		Complementary	4	5
BA3PRP15	Personality Development and Management Skills (Minor Project)	Core	4	5
			20	**25**
Fourth Semester				
BA4CRT16	Financial Management	Core	4	5
BA4CRT17		Core	4	5
BA4CRT18		Core	4	5
BA4CMT19	Basic informatics for Management	Complementary	4	5
BA4CMT20		Complementary	4	5
			20	**25**

Fifth Semester				
BA5CRT21		Core	4	6
BA5OPT22	Open Course	Open	3	4
BA5CRT23		Core	4	5
BA5CMT24		Complementary	4	5
BA5CRT25	Operations Management	Core	2	2
BA5CRT26		Core	3	3
			20	25
Sixth Semester				
BA6OCT27		Optional (Core)	4	5
BA6OCT28		Optional (Core)	4	5
BA6CRT29	Strategic Management	Core	4	5
BA6CRT30	Communication Skills and Personality development	Core	4	5
BA6PRP31	Management Project	Core	4	5
			20	**25**
	Grand Total		**120**	**150**

FIRST SEMESTER

BA1CRT01. PRINCIPLES AND METHODOLOGY OF MANAGEMENT

Core Course	
No. of credit	4
No. of contact hour	6

Aim of the course

Principles and Methodology of Management are the basic foundation for management studies. This course offers a methodological perspective about this subject.

Objective of the course

- Methodological Perspective of Management as a discipline
- Principles and functions of Management
- Process of decision making
- Modern trends in management process

MODULE I:

Nature and scope of management process, definition of management- management: a science, an art or profession?, scientific management, administrative management, human relations management. Contributions of Taylor, Fayol, Max Webber, Gilberth, Gantt, Chester Bernard, Elton Mayo, Peter Drucker

MODULE II: Planning

Definition, meaning, Importance, steps in planning, characteristics types of plans - objectives, strategies, policies, procedures, rules, programmes and Budgets, Relationship between planning and controlling, limitations of planning.

Decision making - definition, meaning, objectives, steps in rational decision making, Types of decisions, Difficulties in decision making

MODULE III: Organizing

Meaning importance, process of organizing, organizations structure, Types of organization structure - line organizations, line and staff organizations, Functional organization, committees.

Delegation of authority, significance of delegation, process of delegation. Centralisation& decentralisation of authority.

MODULE IV: Staffing

Meaning and importance only (This topic in covered in detail in HRM)
Directing - Meaning, importance, elements of directing.

MODULE V: Controlling

Co-ordination, need for co-ordination, meaning and importance of controls, control process, budgetary and non-budgetary controls

Reference Books:

Sl No.	Title	Author	Publishing & Year
1	Principles of management	P.C. TRIPATHI &P.N. Reddy	Tata McGraw Hill publishing co.
2	Essentials of management	Harold Koontz &Weihrich	Tata McGraw Hill Publishing co. 2015
3	Fundamentals of Management Essential concepts and applications	Stephen P Robbins, Sangamitra Bhattacharya & et al.	Pearson 8th edition 2015
4	Management Global Perspectives	Harold Koontz &Weihrich	Tata McGraw Hill Publishing co. 2015
5	Principles and Practice of Management	L M Prasad	Sultan Chand And Sons 8th Edition

SECOND SEMESTER

BA2CRT07 BUSINESS COMMUNICATION

Core Course	
No. of credit	4
No. of contact hour	6

Aim of Course

To understand the nuances of business communication

This course should be taught by providing group discussion and seminars.

MODULE- I Basis of communication

Meaning, importance & process, Need & objectives of communication, 7c's of communication, Barriers of communication, How to overcome communication Barrier. (Practical exercises in communication)

MODULE- II

Means /Media of communication - verbal &Non-verbal communication channel of communication formal & informal communication.

Types of communication. Downward, upward, Horizontal or lateral, Diagonal or cross

MODULE- III Listening as a communication Tool

Importance types of listening, Barriers to effective Listening. How to make listening effective.

MODULE- IV Groups

Business Letter Writing: - Need, Functions and kinds, Letters, Request Letters, Sales Letters, Complaints and adjustments, Departmental Communication: Meaning, Need and Types, Interview Letters, Promotion Letters, Resignation Letters, News Letters, Circulars, Agenda, Notice, Office Memorandums, Office Orders.

MODULE-V. New Trends in Business communication.

E mail, Teleconferencing, video conferencing, SMS

References

Sl No.	Title	Author	Publishing & Year
1	Business communication	R.C. Bhatia.	Ane Books Pvt. Ltd.
2	Business communication	R.K. Madhukar	Vikas Publishing House Pvt Ltd
3	Effective Technical communication	Ashraf Rizvi	McGraw Hill Education (India) Private Limited
4	Business communication essentials	Courtland Bovée And John Thill	Pearson,2015
5	Fundamentals of business communication	P D Chaturvedi, MukeshChaturvedi	Pearson, 2012

THIRD SEMESTER

BA3CRT11 HUMAN RESOURCE MANAGEMENT

Core Course
No. of credit : 4
No. of contact hour: 5

MODULE- I

Definition, Nature, scope, role, objective of Personnel management, level of management, Organisation of Personnel Dept. its functions, Ergonounics, Challenger and relevance of HRM. Manpower planning.

MODULE- II

Recruitment - Sources of recruitment, Selection- Selection process, Training - Definition. Types of training Executive Development.

MODULE- III

Performance Appraisal, techniques Promotion, Career Planning.

MODULE- IV

Job analysis, Job Design, Job Evaluation Wage. Definition, Factors affecting wage policy, Wage Boards Fringe Benefits, Prerequisites, Incentives, Bonus, Profit sharing, VRS, Maintenance of service files pension.

MODULE- V

Drafting charge sheets, Model standing orders, code of conduct, Bond of service, wage & salary records, E.S.I, P.F. Gratuity, pension and bonus records.

Reference text:

Sl No.	Title	Author	Publishing & Year
1	Human Resource Management	Pravin Durai	Pearson
2	Personnel management	Edwin Philipo	
3	Personnel management	Mammoria&Mammoria	*Himalaya Publishing House, Mumbai*
4	A frame work for human resource management	Gary Desseler	
5	Human resource and personnel management	K. Aswathappa	
6	Personnel HRM	Subba Rao	*Himalaya Publishing House, Mumbai*

BA3CRT12 MARKETING MANAGEMENT

Core Course
No. of credit : 4
No. of contact hour: 5

Aim of the course

The aim of this course is to provide the students with a conceptual base on marketing management and also to equip them with the necessary skills for employment in the middle level cadre.

Objective of the course

On completion of the course students should be able:

- To have an awareness on market , market segments and consumer behaviour
- To know the meaning and importance of product mix.
- To understand pricing policies and the applicability of different pricing strategies
- To know the scope of advertising and sales promotion
- To identify and develop

salesmanship in them Course Outline

MODULE I

Introduction

Meaning and definition of different marketing concepts functions of marketing - environmental factors - market segmentation - buying motive and process consumer and customer - factors affecting consumer behaviour - marketing plan

MODULE II

Marketing mix

Marketing mix: meaning - product, product mix- - product life cycle - importance of branding -packaging and labelling

MODULE III

Pricing

Pricing policies objectives factors influencing pricing decisions - different pricing strategies: skimming- penetration
Market structure channel of distribution and its importance

MODULE IV

Promotion

Advertising objectives and functions - types of advertising - personal selling and direct marketing - sales promotion

MODULE V

Marketing research definition, scope and process. Marketing risk and marketing audit

Note on course work:

Module 1 and Module 2 should definitely follow text Marketing-Planning implementation and control by Philip Kotler and Marketing Management by Ramaswami& Namakumary. Every lecture should be complemented by case studies, group discussions and seminars.

Reference Books:

Sl. No	Title	Author	Publisher
1	Marketing Management:	Philip Kotler, Jha& Koshy	Pearson Education, New Delhi
2	Marketing-Planning implementation and control	Philip Kotler	Prentice Hall
3	Marketing Management Text and Cases	SHH Kazmi	Excel Books, New Delhi
4	Marketing Management	V. S Ramaswami S. Namakumary	MacMillan Publishers, New Delhi
5	Marketing Management	Cranfield	Ane Books, New Delhi
6	Marketing Research	D. D Sharma	Sultan Chand And Sons
7	A Framework for Marketing management	Philip Kotler &Kevin Keller	Pearson, 5th edition
8	Marketing management	Biplab S Bose	Himalaya Publishing House, Mumbai

BA3CRT13 RESEARCH METHODOLOGY

Core Course No. of credit : 4 No. of contact hour: 5

MODULE I

Research methodology- meaning. Research, meaning, objectives, significance. Research process- different steps, criteria for good research. Types of research- descriptive, analytical, applied, fundamental, quantitative, qualitative, empirical and conceptual.

MODULE II

Selection of research problem-sources-technique involved in defining a problem.

MODULE III

Research design-meaning-need, concepts-elements Sampling design-steps- criteria of selecting a sampling procedure-sampling process

MODULE IV

Types of data-primary data -meaning-advantages-disadvantages-methods of collecting primary data-sources. Secondary data-meaning, advantages- disadvantages-sources.

MODULE V

Interpretation-meaning-techniques-of interpretation. Report writing-significance- types of reports; (technical and popular) steps-layout-oral presentation.

Note on course work.

This course should not be taught in the conventional lecture method alone. Every lecture should be complemented by an appropriate activity (For example, reference, assignments, project reports etc.).

References:-
Research methodology, OR Krishnamoorthi, Himalaya publishing house, Mumbai

Sl No.	Title	Author	Publishing & Year
1	Research Methodology	Ranjith Kumar	Pearson, 2nd edition
2	Research Methods for management	Dr S.Shajahan	Jaico Publishing House
3	Research Methodology. methods and techniques	C.R.Kothari	New Age International publishers
4	Research Methods	Ram Ahuja	Rawat publications
5	Research Methodology	K.R.Sharma	National Publishing House

BA3CMT14 BUSINESS LAWS

Complementary Course No. of credit 4 No. of contact hour: 5

Aim of the course

To build a general awareness about the principles behind contract law and to introduce various type special contracts

Objective of the course

On completion of the course, student should be able

- ➢ To identify the principles behind law of contract
- ➢ To equip students to identify the validity of contracts
- ➢ To create awareness about various special contracts

MODULEI: General principles of law of contract

Law of contracts; Definition-essentials of a valid contract-kinds of contracts-Offer and accept revocation-communication-consideration. Doctrine of privity of contract-capacity to contract-con coercion-undue influence-misrepresentation-fraud-mistake-performance-discharge of contract-breac contract-remedies for breach of contract.

MODULEII: Contracts of indemnity and guarantee

Definition of indemnity–essential elements-rights of parties-definition of guarantee –essential elem rights of surety-nature of surety's liability-discharge of guarantee

MODULE III: Contract of bailment and pledge

Definition –essential elements- rights and duties of bailor and bailee-termination of bailment-finder o goods-Pledge-definition-rights and duties of pawnor and pawnee.

MODULEIV: Contract of agency

Definition- essentials-types of agency-mercantile agents-extent of agent's authority-delegation of auth personal liability of agent- liability of agent to third parties- termination of agency.

MODULE V: Contract of sale of goods

Sale of goods Act; Contract of sale and agreement to sell-conditions and warranties- transfer of propert title of goods-rights and duties of seller and buyer- rights of an unpaid seller.

References

1. Aswathappa, K., Business Laws, *Himalaya Publishing House*, *Bengaluru*.
2. Kapoor,N.D., Business Laws, *Sultan Chand publications*New Delhi.
3. Sharma,S.C., Business Law, *International Publishers,Bengaluru*

4. Tulsian, Business Law, *McGraw-Hill Education Mumbai*.

BA4CRT17 MANAGERIAL ECONOMICS

Core Course
No. of credit : 4
No. of contact hour: 5

MODULE -I

Introduction, Definition, Scope and uses of Managerial Economics. Role of a managerial economist. Difference between managerial economics and pure economics.

MODULE -II

Business cycles- Phases of a business cycle. Economic systems- Capitalist, Socialist, Mixed economy. Inflation: Definition, Courses of inflation, Control of inflation.
Banking: Functions of Central Banks, Functions of Commercial Banks. Monetary Policy, Fiscal Policy.

MODULE - III

Demand Analysis, Meaning of demand, the law of Demand, Determinants of demand, Types of demand, Law of Diminishing Marginal Utility, Consumer Surplus. Elasticity of demand, Price elasticity of demand, Income elasticity of demand, cross elasticity of demand.

MODULE-IV

Production function, Managerial use of Production function, Law of diminishing returns, Law of returns to scale, Economies of scale, Diseconomies of scale

Isoquants, Isocost curve, Optimum combination of inputs.

Pricing, Pricing policy and Practises, Cost plus pricing, rate of return pricing, pricing of competing firms, pricing of new products, price leadership, price discrimination.

MODULE-V

Market structure, Prefect competition, Monopoly, Monopolistic competition and oligopoly

Reference texts

1. Dean, Joel Managerial economics- Prentice Hall of India
2. Varshney, R.L., & Maheshwari, K.L., Managerial Economics, Sultan Chand & Sons Private Ltd., New Delhi
3. Kasi Reddy M., & Saraswathi, S., Managerial Economics and Financial Accounting, PHI Learning, New Delhi.,
4. DM Mithani, Managerial economics, Himalaya Publishing House Mumbai.
5. Mehta, P. L., Managerial Economics, Sultan & Chand, New Delhi
6. Trivedi, M.L., Managerial Economics Theory and Applications, McGraw Hill Education Private Ltd, New Delhi.
7. Dwivedi, D. N., Managerial Economics, Vikas Publishing House Private Limited, New Delhi.
8. Gopalkrishna, Managerial Economics,Himalaya Publishing House, Mumbai
9. Craig H Petersen, W Cris Lewis &Sudhir K Jain, Managerial Economics, Pearson, 4th edition

BA4CRT18 ENTREPRENEURSHIP

Core Course
No. of credit : 4
No. of contact hour: 5

MODULE I

To make the students understand about entrepreneurs and different classifications. Entrepreneur and entrepreneurship - Definition; traits and features; classification; Entrepreneurs; Women entrepreneurs; Role of entrepreneur in Entrepreneurs in India.

MODULE- II

Create an awareness about EDP. Entrepreneurial development programme concept; Need for training; phases of EDP; curriculum & contents of Training Programme; Support systems, Target Groups; Institutions conducting EDPs in India and Kerala.

MODULE- III

General awareness about edeutification of project financing new enterprises. Promotion of a venture; opportunity Analysis Project identification and selection; External environmental analysis economic, social, technological an competitive factors; Legal requirements for establishment of a new unit; loans; Overrun finance; Bridge finance; Venture capital; Providing finance in Approaching financing institutions for loans.

MODULE- IV

To identify different Discuss opportunities in small business. Small business Enterprise - Identifying the Business opportunity in various sectors - formalities for setting up of a small business enterprise - Institutions supporting small business enterprise - EDII (Entrepreneurship Development Institute of India), 0 SLDO (Small Industries Development Organization NSIC (National small Industries Corporation Ltd. (CNSIC) NIESBUD (National Institute for Entrepreneurship and small Business Development) Sickness in small business enterprise causes and remedies.

MODULE V

To understand about a project report relating to a small business. Project formulation - Meaning of a project report significance contents formulation planning, commission's guidelines for formulating a projectreport - specimen of a project report, problems of entrepreneurs case studies of entrepreneurs

Reference texts:

Sl No.	**Title**	**Author**	**Publishing & Year**
1.	Entrepreneurship Development	Dorden and Natarajan	Himalaya Publishing House, Mumbai
2.	Entrepreneurship Development and Small Business Enterprises	Poornima M.Charantimath	Pearson,2nd edition

BA4CMT20 CORPORATE LAWS

Complementary Course No. of credit 4 No. of contact hour: 5

Aim of the course

To build a general awareness about the principles behind, companies and partnerships.

Objective of the course:

On completion of the course, the student should be able

- ➢ To identify the various steps in the formation of a company
- ➢ To specify the basic principles of corporate laws
- ➢ To clarify the basic principles of partnership law
- ➢ To understand the basic features of limited liability partnership

MODULE I: Formation and incorporation of a company (The Companies Act, 2013)

Formation and incorporation of a company; characteristics and types of companies;

Promoters; corporate veil; pre-incorporation and preliminary contracts. Memorandum of association – articles of association- doctrine of ultra vires- doctrine of constructive notice- indoor management-prospectus and statement in lieu of prospectus-deemed prospectus-shelf prospectus-abridged prospectus- red- herring prospectus and information memorandum- liability for misstatement of prospectus.

MODULE II: Management of companies and Company meetings

Qualification and appointment of directors; powers, duties and liabilities of directors; kinds of company meetings; requisites of a valid meeting; Chairman- agenda-minutes-quorum; Motions and resolutions –proxy-ascertaining the sense of a meeting.

MODULEIII: Winding up of companies:

Modes of winding up; compulsory winding up- grounds and procedure; voluntary winding up-types-procedure-effects of winding up-liquidator-powers and functions- contributories; defunct companies.

MODULE IV: The Law Relating to Partnership and limited liability partnership Nature, test and types of partnership- partnership deed-rights and liabilities of partners- relations of partners to one another and to third parties- incoming and outgoing partners- Retirement-Registration and dissolution of partnership- limited liability partnerships.

MODULEV: Pollution control Act

Definitions- Air- water and sound pollution- pollution control measures.

References

1. Shukla, M.C., & Gulshan, Principles of Company Law, *S.Chand, New Delhi*.

2.Venkataramana, K., Corporate Administration, *Seven Hills Books Publications.*

3. Kapoor,N.D., Company Law and Secretarial Practice, Sultan Chand,*New Delhi*.

4. Elements of corporate Law, SN Maheswari and SK Maheswari, Himalaya Publications, Mumbai.

4. Bansa,lC.L., Business and Corporate Law, *Vikas Publishers, New Delhi.*

FIFTH SEMESTER

BA5CRT21 ORGANISATIONAL BEHAVIOUR

Core Course
No. of credit : 4
No. of contact hour: 6

Course Objectives

- Understand the implications of individual and group behaviour in organisational context.
- Understand the concept of organisational behaviour, social organisation and the diverse environment alongside with the management of groups and teams
- Appreciate the culture of organisational culture

Learning Outcome

- Manage conflict amongst groups in business environment
- Comprehend and apply motivational theories in the workplace
- Identify changes within organisations and power and politics in organisations

MODULE- I:

Introduction to Organisational Behaviour- Various discipline contributing to OB- Hawthorne experiment- foundation of individual behaviour- need and importance of organisational behaviour-nature and scope- framework of organisational behaviour

MODULE- II:

Personality-types-factors affecting personality-perception-importance-factors influencing perception-learning-types of learning styles-the learning process

MODULE- III:

Motivation-theories-importance –types –values and attributes-characteristics- components-formation and measurement-group dynamics group behaviour- formation-types of groups-stages of group development-conflict management- nature of conflict-types of conflict

MODULE-IV:

Leadership-meaning-importance-leadership styles-leaders Vs. managers-power and politics- sources of power

MODULE-V:

Organisational structure and design-organisational climate- factors affecting organisational climate- organisational development-organisational culture-organisational change- current trend in OB

Core texts

Sl No.	Title	Author	Publishing & Year
1	Essentials of Organisational Behaviour	Stephen P Robbins, Timothy A. Judge &SeemaSanghi	Pearson, 10th edition
2	Organizational behaviour	Bhattacharya	Oxford universit y Press
3	Organization behaviour	LM Prasad	Sultan Chand & Sons 2005

BA5CRT23 ENVIRONMENT SCIENCE AND HUMAN RIGHTS

Core Course
No. of credit : 4
No. of contact hour: 5

MODULE I

Multidisciplinary nature of environmental studies
Definition, scope and importance Need for public awareness.
Natural Resources : Renewable and non-renewable resources : Natural resources and associated problems.
a) Forest resources : Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people.
b) Water resources : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems.
c) Mineral resources : Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
d) Food resources : World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
e) Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, Case studies.
f) Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification

- Role of individual in conservation of natural resources.
- Equitable use of resources for sustainable

life styles. Ecosystems

- Concept of an ecosystem
- Structure and function of an ecosystem
- Producers, consumers and decomposers
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids.
- Introduction, types, characteristic features, structure and function of the given ecosystem:- Forest ecosystem

MODULE II

Biodiversity and its conservation

Introduction, Biogeographical classification of India ,Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values. India as a mega-diversity nation, Hot-sports of biodiversity, Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts, Endangered and endemic species of India

Environmental Pollution

Definition, Causes, effects and control measures of: -

a. Air pollution
b. Water pollution
c. Soil pollution
d. Marine pollution
e. Noise pollution
f. Thermal pollution
g. Nuclear hazards

Solid waste Management: Causes, effects and control measures of urban and industrial wastes, Role of an individual in prevention of pollution, Pollution case studies, Disaster management: floods, earthquake, cyclone and landslides

Social Issues and the Environment- Urban problems related to energy, Water conservation, rain water harvesting, watershed management, Resettlement and rehabilitation of people: its problems and concerns, Case studies, Environmental ethics: Issues and possible solutions, Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, Case studies, Consumerism and waste products, Environment Protection Act , Air (Prevention and Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act,Issues involved in enforcement of environmental legislation

MODULE III

Introduction to Environment and Business

Introduction of ways in which business has and is responding to environmental and business issues; business and sustainable development; issues of corporate/business greening.

MODULE IV

Green entrepreneurship

What is green entrepreneurship, definition, meaning, scope, nature and characteristics. Green entrepreneurship in India. Difference between conventional and green entrepreneurship.

MODULE V

Human Rights– An Introduction to Human Rights, Meaning, concept and development, Three Generations of Human Rights (Civil and Political Rights; Economic, Social and Cultural Rights).

Human Rights and United Nations – contributions, main human rights related organs - UNESCO,UNICEF, WHO, ILO, Declarations for women and children,

Universal Declaration of Human Rights.

Human Rights in India – Fundamental rights and Indian Constitution, Rights for children and women, Scheduled Castes, Scheduled Tribes, Other Backward Castes and Minorities Environment and Human Rights - Right to Clean Environment and Public
Safety: Issues of Industrial Pollution, Prevention, Rehabilitation and Safety Aspect
of New Technologies such as Chemical and Nuclear Technologies, Issues of Waste
Disposal, Protection of Environment

Conservation of natural resources and human rights: Reports, Case studies and policy formulation. Conservation issues of western ghats- mention Gadgil committee report, Kasthurirengan report. Over exploitation of ground water resources, marine fisheries, sand mining etc.

Internal: **Field study**

- Visit to a local area to document environmental grassland/ hill /mountain
- Visit a local polluted site – Urban/Rural/Industrial/ Agricultural Study of common plants, insects, birds etc
- Study of simple ecosystem-pond, river, hill slopes, etc

(Field work Equal to 5 lecture hours)

REFERENCES

1. Bharucha Erach, Text Book of Environmental Studies for undergraduate Courses. University Press, IInd Edition 2013 (TB)
2. Clark.R.S., Marine Pollution, Clanderson Press Oxford (Ref)
3. Cunningham, W.P.Cooper, T.H.Gorhani, E & Hepworth, M.T.2001 Environmental Encyclopedia, Jaico Publ. House. Mumbai. 1196p .(Ref)
4. Dc A.K.Enviornmental Chemistry, Wiley Eastern Ltd.(Ref)
5. Down to Earth, Centre for Science and Environment (Ref)
6. Heywood, V.H & Watson, R.T. 1995. Global Biodiversity Assessment, Cambridge University Press 1140pb (Ref)
7. Jadhav.H & Bhosale.V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi 284p (Ref)
8. Mekinney, M.L & Schock.R.M. 1996 Environmental Science Systems & Solutions. Web enhanced edition 639p (Ref)
9. Miller T.G. Jr., Environmental Science, Wadsworth Publishing Co. (TB)
10. Odum.E.P 1971. Fundamentals of Ecology. W.B. Saunders Co. USA 574p (Ref)
11. Rao.M.N & Datta.A.K. 1987 Waste Water treatment Oxford & IBII Publication Co.Pvt.Ltd.345p (Ref)
12. Rajagopalan. R, Environmental Studies from crisis and cure, Oxford University Press, Published: 2016 (TB)

13. Sharma B.K., 2001. Environmental Chemistry. Geol Publ. House, Meerut (Ref)

14. Townsend C., Harper J, and Michael Begon, Essentials of Ecology, Blackwell Science (Ref)

15. Trivedi R.K., Handbook of Environmental Laws, Rules Guidelines, Compliances and Stadards, Vol I and II, Enviro Media (Ref)
16. Trivedi R. K. and P.K. Goel, Introduction to air pollution, Techno-Science Publication (Ref)
17. Wanger K.D., 1998 Environmental Management. W.B. Saunders Co. Philadelphia, USA 499p (Ref)
18. (M) Magazine (R) Reference (TB) Textbook

Human Rights

1. Amartya Sen, The Idea Justice, New Delhi: Penguin Books, 2009.
2. Chatrath, K. J.S., (ed.), Education for Human Rights and Democracy (Shimla: Indian Institute of Advanced Studies, 1998)
3. Law Relating to Human Rights, Asia Law House,2001.
4. Shireesh Pal Singh, Human Rights Education in 21st Century, Discovery Publishing House Pvt.Ltd, New Delhi,
5. S.K.Khanna, Children And The Human Rights, Common Wealth Publishers,1998. 2011.
6. Sudhir Kapoor, Human Rights in 21st Century,Mangal Deep Publications, Jaipur,2001.
7. United Nations Development Programme, Human Development Report 2004: Cultural Liberty in Today's Diverse World, New Delhi: Oxford University Press, 2004.

BA5CMT24 INTELLECTUAL PROPERTY RIGHTS AND INDUSTRIAL LAWS

Complementary
Course No. of credit 4
No. of contact hour: 5

Aim of the course

To build a general awareness about the principles behind, intellectual property legislations and three important industrial laws.

Objective of the course:

On completion of the course, student should be able

To appreciate the concepts of patent and trademark protection.

To specify the various legal provisions in the Factories Act and Industrial Disputes Act. To identify the benefits offered by ESI Act.

MODULE - I Introduction to Intellectual property Rights

Concept; patents; term and registration of patents; Rights of patent holder; infringement of patents; Trademark: Meaning; procedure for registration; infringement of registered trademark; Collective marks - certification trademarks-well known trade mark.

MODULE - II: Law relating to factories

Approval, licensing and registration of factories; provisions regarding health, safety and welfare of workers; working hours; employment of women and young persons. Annual leave with wages.

MODULE -III: Law relating to Industrial Disputes

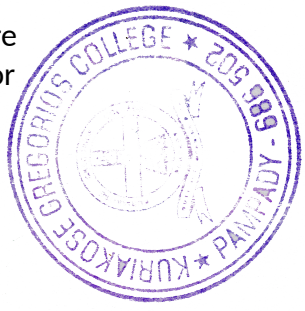
Meaning of industry; machinery for the prevention and settlement of industrial disputes. Provisions relating to strikes, lay off, retrenchment, lock out, closure and transfer of undertakings.

MODULE - IV: Law relating to employees' state insurance

Applicability of the Act- administration of the scheme- ESI corporation-standing committee and medical benefit council- inspectors- contributions-benefits under the Act – adjudication of disputes.

MODULE -V: Consumer Protection Act

Definitions- Consumer Protection Councils- central and state consumer protection councils-objects-consumer disputes redressal agencies-composition of the District Forum- Jurisdiction of the District Forum-procedure for filing complaints- composition and jurisdiction of State Commission-composition ,jurisdiction and powers of the National Commission-procedure applicable to state and national commission-Appeal-Dismissal of frivolous or vexatious complaints-penalties.



BA5CRT26 INDUSTRIAL RELATIONS

Core Course No. of credit : 3 No. of contact hour: 3

Aim of the course:

To make an awareness about relations between labour and management in an industry.

Objectives of the course:

Is to enable the student

- ➢ To have a basic idea regarding industrial relations.
- ➢ To understand various prospect of workers and employers
- ➢ To understand more about the employees performance and their carrier planning.
- ➢ To know how the …..are made in industries between workers and management.
- ➢ To know how the workers are participating in daws making programmes.
- ➢ To understand various welfare facilities of education programmes provided by employers to their employees.

MODULE I: Introduction

Nature of Industrial relations- meaning and importance- Industrial labour in India,- an overview of industrial growth- Private and Public Sector Employment trends- Industrial Labour force.

MODULE II: Bargaining agents

Workers Organization: Role of Trade Union in Industries- Multiplicity of trade unions- inside and outside leadership. Employers Organization-Role of Employers Organization in maintaining industrial relations, Recognition of trade Unions.

MODULE III: Industrial Unrest

Concepts- Causes- Problems- handling techniques and procedures relating to –go- slow-work –stoppage-gherao-retrenchment-lay –off.

MODULE IV: Settlement of Industrial Disputes

State Policy- need and nature of state labour policy and intervention-ILO Statutory Measures: Holding Negotiations-bipartite-tripartite negotiations-mediation- conciliation-arbitration-adjudication.

MODULE V: Promotion of Industrial Peace

Collective bargaining-works participation in management-works education-workers welfare-Industrial truce

Reference text:

1. Industrial relations, trade unions and labour registration -P.R.N. Sinha & InduBala Sinha & SeemaPriyadarshini Shekhar

2. Industrial relations -C.B. Mamoria

SIXTH SEMESTER

OPTIONAL I

BA6OCT27 (a) HEALTH CARE MANAGEMENT

Optional Course No. of credit 4 No. of contact hour: 5

Aim

The aim of this subject is to create awareness among the students and equip them with the necessary skills for employment in the middle level cadre.

Objectives

To orient students in health care
To enhance knowledge in the health care industry
To familiarize the students about the various services To familiarize the students with office management

MODULE I

Role of Hospitals in Health Care
Role of Hospitals in development of society

Types of Hospital Ownership (Private, Government), Specialization (Nursing Homes,

Diabetic clinic, General Hospital) and Service (Homeopathy, Ayurveda)

MODULE II

Management of Hospitals Importance of HRM and Staffing Financial

Management Budget Allocation

MODULE III

In patient and out patient

A study on Private and Government health care units Role of Government in health care sectors

MODULE IV

Hospital Services Clinical Services X-ray department, Lab Services.

Department in Hospitals Paediatric, Orthopaedic, Pathology etc.

MODULE V

Maintenance of different types of records.
New avenues of Health Care management - tourism

OPTIONAL II

BA6OCT28. (a) ADVERTISING AND SALESMANSHIP

Optional Course	
No. of credit	4
No. of contact hour:	5

Aim

The aim of this subject is to create awareness among the students and equip them with the necessary skills for employment in the middle level cadre.

Objectives

To orient students in Marketing Management. To encourage entrepreneurial skills.

To meet the demand of the various industrial sectors.

MODULE I

Advertising definition, objectives. Types of Advertising Newspaper, Magazines, Journals. Outdoor Ads, Theatre Ads. Radio, TV Advertisement. Product placement

MODULE II

Ad Agencies Its Types and functions. Ethics in Advertisement. Advertisement Budget

MODULE III

Element of Advertisement Copy Writing. Advertisement lay out, Proof reading, Typography, Lithography. Use of Symbols, Slogans Caption Catch Phrase.

MODULE IV

Salesmanship Importance of Salesman, Steps in selling. Direct Marketing. Different Salesman retailer, wholesaler etc. Negotiation

MODULE V

Knowledge, Skills and Qualities required in salesmanship. Training

and supervising the salesman. Motivating the salesman perks, commission,incentives,remuneration,awards and rewards

Note on Course

Every lecture should be complemented with Case studies, Group Discussion, Seminars

REFERENCE BOOKS:

Sl No.	Title	Author	Publishing & Year
1	Advertising Management	Rajeev Batra, John G Myers, David A Aaker	Pearson, 5th edition
2	Salesmanship and Advertisement	Dawar S.R	
3	Sales Promotion	Cummins. J	Kogan Page; 5 edition
4	New patterns in Sales Management	Birth and Boyd	
5	Marketing	Debbie Gilliland	

COMMON COURSE
(ENGLISH, MALAYALAM, HINDI)

COURSE 1- Fine-tune Your English : EN1CC01

AIM OF THE COURSE

The course is intended to introduce the students to the basics of grammar, usage and effective communication.

OBJECTIVES OF THE COURSE

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

1. confidently use English in both written and spoken forms.
2. Use English for formal communication effectively.

COURSE OUTLINE

Module 1 (18 Hours)

The Sentence and Its Structure - How to Write Effective Sentences – Phrases -What Are They? - The Noun Clauses - The Adverb Clause - —If All the Trees Were Bread and Cheesell - The Relative Clause - How the Clauses Are Conjoined - Word-Classes and Related Topics - Understanding the Verb - Understanding the Auxiliary Verb - Understanding the Adverbs - Understanding the Pronoun - The Reflexive Pronoun - The Articles I - The Articles II - The Adjective - Phrasal Verbs - Mind Your Prepositions 4

Module 2 (18 Hours)

To Err Is Human - Concord - A Political Crisis - Errors, Common and Uncommon - False Witnesses - The Anatomy of Mistakes- A Fault-finder Speaks - A Lecture on AIDS - A Test for You, Reader - Ungrammatical Gossip - Round Circles and Equal Halves: A Look at Tautology - Comparisons are Odious - In Defence Of A Friend - An Invitation Spelling and Pronunciation - Pronunciation: Some Tips - More Tips on Pronunciation – Spelling - An Awesome Mess? - Spelling Part II

Module 3 (18 Hours)

Singleness of Meaning - Shades of Meaning - Confusing Pairs - What Is the Difference? - Mismatching Mars the Meaning The Tense and Related Topics - ‗Presentness' and Present Tenses- The ‗Presentness' of a Past Action - Futurity in English - Passivization Idiomatic Language- ‗Animal' Expressions - Idiomatic Phrases - ‗Heady' Expressions - Body Language

Module 4 (18 Hours)

Interrogatives and Negatives - Negatives- How to Frame Questions -What's What? The Question Tag Conversational English - Polite Expressions - Some Time Expressions - In Conversation - Is John There Please? Miscellaneous and General Topics - On Geese and Mongooses - Pluralisation - On Gender and Sexisms Reading – Kinds of Reading – Recreational Reading – Study-type Reading Survey Reading – The Process of Reading – Readability – The Importance of Reading – Previewing - Skimming

Module 5 (18 Hours)

The world of words- have a hearty meal- word formation-Use the specific word- word games-the irreplaceable word- Let‘s play games- body vocabulary

Very Good but Totally Incompetent - Long Live the Comma - The Possessive Case- Letter Writing- Academic Assignments

Get your doubts cleared

Core Text: Fine-tune Your English by Dr Mathew Joseph. Orient Blackswan and Mahatma Gandhi University

COURSE 2 - Pearls from the Deep - EN1CC02

AIM OF THE COURSE

To introduce students to the different genres of literature and to the niceties of literary expression.

OBJECTIVES OF THE COURSE

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

1. appreciate and enjoy works of literature.
2. appreciate the aesthetic and structural elements of literature.

COURSE OUTLINE

Module 1 [Fiction] (18 hours)

Ernest Hemingway: The Old Man and the Sea

Module 2 [One Act Plays] (18 hours)

Susan Glaspell: Trifles

Asif Currimbhoy: The Refugee

A. A. Milne: The Boy Comes Home

Module 3 [Short Stories] (18 hours)

Guy De Maupassant: Two Friends

O. Henry: The Gift of the Magi

K. A. Abbas: Sparrows

Flora Annie Steel: Valiant Vicky, the Brave Weaver

Module 4 [Poems] (18 hours)

Rumi: The Chance of Humming

Walter Scott: Lochinvar

John Keats: La Belle Dame sans Mercy

Robert Frost: After Apple Picking

Chinua Achebe: Refugee Mother and Child

Kamala Das: My Grandmother‘s House

Ted Hughes: Jaguar Pablo Neruda: Tonight I can Write the Saddest Lines

P. P. Ramachandran: How Simple!

Core Text: Pearls from the Deep. Cambridge University Press and Mahatma Gandhi University

COURSE 3 - Issues that Matter : EN2CC03

AIM OF THE COURSE

To sensitize the learners to contemporary issues of concern.

OBJECTIVES

By the end of the course, the learner should be able to:

1. Identify the major issues of contemporary significance
2. Respond rationally and positively to the issues raised
3. Internalise the values imparted through the selections.

COURSE OUTLINE

Module 1 (18 hours)

Luigi Pirandello: War

Judith Wright: The Old Prison

Arundhati Roy: Public Power in the Age of Empire

Module 2 (18 hours)

Bertolt Brecht: The Burning of the Books

W. H. Auden: Refugee Blues

Romila Thapar: What Secularism is and Where it Needs to be Headed

Module 3 (18 hours)

Zitkala- Sa: A Westward Trip

Bandhumadhav: The Poisoned Bread

Temsula Ao: The Pot Maker

Module 4 (18 hours)

Khushwant Singh: A Hosanna to the Monsoons

Ayyappa Paniker: Where are the woods, children?

Sarah Joseph: Gift in Green [chapter 2] - Hagar: A Story of a Woman and Water

Module 5 (18 hours)

Ghassan Kanafani: Six Eagles and a Child

Sanchari Pal: The Inspiring Story of How Sikkim Became India's Cleanest State

Indrajit Singh Rathore: Hermaphrodite

Core Text: Issues that Matter

COURSE 4 - Savouring the Classics : EN2CC04

AIM OF COURSE

To introduce the students to the taste of time tested world classics.

OBJECTIVES OF THE COURSE

On completion of the course, the student should:

1. become familiar with the classics from various lands.
2. understand the features that go into the making of a classic.

OUTLINE OF THE COURSE

Module 1 [Poems] (18 hours)

Homer: Odysseus tells Eurycleaia to conceal his identity (Odyssey - Book 19: 476 - 507)

Sappho: Jealousy

Kalidasa: Look to This Day

Omar Khayyam: Rubaiyat (last four quatrains: 72-75)

Dante - Dante meets Virgil (Inferno - Canto 1: 61-99)

Matsuo Basho: Haikus

Alexander Pushkin: The Song of the Kazak

Module 2 [Shakespeare Excerpts] (18 hours)

Romeo and Juliet: ACT II, Scene ii The Merchant of Venice: ACT IV, Scene i

Module 3 [Novel Excerpts] (18 hours)

Victor Hugo: Les Miserables (Part 1- Fantine Book II)

Mark Twain: The Adventures of Huckleberry Fin (Raft Passage)

Module 4 [Short Fiction] (18 hours)

Dostoyevsky: A Christmas Tree and a Wedding

Arthur Conan Doyle: The Adventure of the Dancing Men

Core Text: Savouring the Classics

COURSE 5 - Literature and/as Identity : EN3CC05

AIM OF THE COURSE

The course is intended to sensitivise students to the various ways in which literature serves as a platform for forming, consolidating, critiquing and re-working the issue of ‗identity' at various levels.

OBJECTIVES OF THE COURSE

On completion of the course, the student should be aware of the following:

1. The subtle negotiations of Indigenous and Diasporic identities with-in Literature.
2. The fissures, the tensions and the interstices present in South Asian regional identities.
3. The emergence of Life Writing and alternate/alternative/marginal identities.

COURSE OUTLINE

Module 1 (Diasporic Identities) (18 hours)

Agha Shahid Ali: I See Kashmir from New Delhi at Midnight

M.G. Vassanji: Leaving Imtiaz Dharker: At the Lahore Karhai

Chitra Banerjee Divakaruni: Indian Movie, New Jersey

Module 2 (South Asian Identities) (18 hours)

C. V. Velupillai: No State, No Dog

Sadaat Hasan Manto: The Dog of Tetwal

Intizar Hussain: A Chronicle of the Peacocks

Selina Hossain: Double War

Module 3 (Life Writings) (18 hours)

Malcolm X: ―Nightmarell, excerpt from The Autobiography of Malcolm X.

Sashi Deshpande: Learning to be a Mother in Janani – Mothers, Daughters, Motherhood, (ed.) Rinki Bhattacharya.

Module 4 (Indigenous Identities) (18 hours)

Excerpts from Binti, the Santhal creation song of cosmology, the Bhilli Mahabharat and Garhwali Songs in Painted Words - An Anthology of Tribal Literature - Edited by G. N. Devy. Amos Tutuola: The Palm-Wine Drinkard. [Excerpt]

Module 5 (Alter Identities) (18 hours)

Nathaniel Hawthorne: The Birth Mark

John Henrik Clarke: The Boy Who Painted Christ Black

Ruskin Bond: The Girl on the Train

Core Text: Literature and/as Identity

COURSE 6 – Illuminations : EN4CC06

AIM OF THE COURSE

To acquaint the learners with different forms of inspiring and motivating literature.

OUTLINE OF THE COURSE

At the end of the course, the student shall be able to:

1. maintain a positive attitude to life.
2. evaluate and overcome setbacks based on the insights that these texts provide.

COURSE OUTLINE

Module 1 [Life Sketches] (18 hours)

Helen Keller: Three Days to See

Jesse Owens: My Greatest Olympic Prize

Dominic Lapierre: Mother Teresa

Module 2 [Essays] (18 hours)

Lafcadio Hearn: On Reading Stephen Leacock: Are the Rich Happy?

A.G. Gardiner: On Courage

Module 3 [Speeches] (18 hours)

J. K. Rowling: The fringe benefits of failure and the importance of imagination

Malala Yousafzai: Nobel Lecture

Module 4 [Short Stories] (18 hours)

Oscar Wilde: The Nightingale and the Rose

George Orwell: The Miser

John Galsworthy: Quality

Paolo Coelho: The Beggar and the Baker

Module 5 [Poems] (18 hours)

William Ernest Henley: Invictus

Robert Frost: The Road Not Taken

Kahlil Gibran: Of Good and Evil

Joyce Kilmer: Trees

Core Text: Illuminations

ബി. എ./ബി. എസ്സി.

സെമസ്റ്റർ 1 കോമൺ കോഴ്സ്

കോഴ്സ് കോഡ് : ML1CCT01

കഥാസാഹിത്യം

പഠനലക്ഷ്യങ്ങൾ

1. സാമാന്യമായ സാഹിത്യപരിചയവും വായനാഭിരുചിയും ആസ്വാദനശേഷിയും വളർത്തിയെടുക്കുക
2. മലയാളകഥാസാഹിത്യത്തിൽ സംഭവിക്കുന്ന ഭാവുകത്വപരിണാമങ്ങൾ തിരിച്ചറിയുക
3. കാലഘട്ടത്തിന്റെ പൊതുപ്രവണതകളും ഉദാത്തമായ ജീവിതവീക്ഷണവും എഴുത്തിൽ പ്രകടമാവുന്നത് അനുഭവിച്ചറിയുക

പാഠപുസ്തകം - യൂണിവേഴ്സിറ്റി പ്രസിദ്ധീകരണം.

ഖണ്ഡം ഒന്ന് - ചെറുകഥ

1. പൂവമ്പഴം - കാരൂർ
2. ഭൂമിയുടെ അവകാശികൾ - വൈക്കം മുഹമ്മദ് ബഷീർ
3. കടൽ - ടി. പത്മനാഭൻ
4. പെരുമഴയുടെ പിറ്റേന്ന് - എം.ടി വാസുദേവൻ നായർ
5. മാനാഞ്ചിറ ടെസ്റ്റ് - വി.കെ. എൻ
6. തരിശുനിലം - മാധവിക്കുട്ടി
7. ആർക്കറിയാം - സക്കറിയ
8. ഓരോ എഴുത്തുകാരിയുടെ ഉള്ളിലും - സാറാജോസഫ്
9. തിരുത്ത് - എൻ.എസ് മാധവൻ
10. മോഹമഞ്ഞ - കെ. ആർ മീര
11. അഗ്നി - സിതാര എസ്.
12. ബിരിയാണി - സന്തോഷ് ഏച്ചിക്കാനം
13. മോദസ്ഥിരനായ് അങ്ങ് വസിപ്പൂ മലപോലെ - എസ്. ഹരീഷ്
14. പ്രാണിലോകം -ഉണ്ണി ആർ.
15. ചില സ്വപ്നങ്ങളിൽ..... സീതാലക്ഷ്മിയുടെ കറുത്ത മുടിയിഴ - ഇന്ദുമേനോൻ

ഖണ്ഡം രണ്ട് - നോവൽ

ആടുജീവിതം - ബന്യാമിൻ

സഹായകഗ്രന്ഥങ്ങൾ

1. ചെറുകഥ ഇന്നലെ ഇന്ന് - എം. അച്യുതൻ
2. ചെറുകഥാപ്രസ്ഥാനം - എം. പി. പോൾ
3. ചെറുകഥ വാക്കും വഴിയും - ഡോ. കെ.എസ് രവികുമാർ
4. നോവൽ സാഹിത്യ ചരിത്രം - പ്രൊഫ. കെ.എം തരകൻ

ബി. എ./ബി. എസ്സി.

സെമസ്റ്റർ 2 കോമൺ കോഴ്സ്

കോഴ്സ് കോഡ് : ML2CCT02

കവിത

പഠന ലക്ഷ്യങ്ങൾ

1. സാമാന്യമായ കവിതാസാഹിത്യപരിചയവും വായനാഭിരുചിയും കാവ്യാസ്വാദനശേഷിയും വളർത്തിയെടുക്കുക
2. മലയാള കവിതാസാഹിത്യത്തിൽ സംഭവിക്കുന്ന ഭാവുകത്വപരിണാമങ്ങൾ തിരിച്ചറിയുക
3. കാലഘട്ടത്തിന്റെ പൊതുപ്രവണതകളും ഉദാത്തമായ ജീവിതവീക്ഷണവും എഴുത്തിൽ പ്രകടമാവുന്നത് അനുഭവിച്ചറിയുക

കവിതകൾ

1. മാംസനിബദ്ധമല്ലരാഗം - കുമാരനാശാൻ (ലീലയിലെ 47 മുതൽ 74 വരെയുള്ള 28 ശ്ലോകങ്ങൾ)
2. സ്നേഹസുന്ദരപാതയിലൂടെ - വൈലോപ്പിള്ളി ശ്രീധരമേനോൻ 'കുടിയൊഴിക്കലി' ലെ അവസാന ഖണ്ഡം
3. ഒറ്റയ്ക്കിരിക്കാൻ പഠിച്ചു കഴിഞ്ഞു ഞാൻ - സുഗതകുമാരി
4. കോഴി -കടമ്മനിട്ട രാമകൃഷ്ണൻ
5. പഴഞ്ചൊല്ലുകൾ - സച്ചിദാനന്ദൻ
6. മുള്ളൻ പന്നി - കെ.ജി. ശങ്കരപ്പിള്ള
7. തിരുത്ത് - പി.പി. രാമചന്ദ്രൻ
8. പിറക്കാത്ത മകന് -ബാലചന്ദ്രൻ ചുള്ളിക്കാട്
9. മൃഗശിക്ഷകൻ - വിജയലക്ഷ്മി
10. ആടിയാടി അലഞ്ഞ മരങ്ങളേ.... - അൻവർ അലി
11. കൽവീട് - വി.എം. ഗിരിജ
12. ആഴങ്ങൾ അടച്ചിട്ട പുഴ- എസ്. ജോസഫ്
13. സ്മാരകം - വീരാൻകുട്ടി
14. കുട്ടമ്മാൻ - എം. ആർ. രേണുകുമാർ
15. നാഷണൽ ജ്യോഗ്രഫി -എസ്. കണ്ണൻ
16. വെറ്റിലച്ചെല്ലം - ടി.പി. രാജീവൻ
17. പഴയ ചിലത് - പി. രാമൻ
18. ഗോതമ്പു ശില്പം - കവിത ബാലകൃഷ്ണൻ
19. കുന്നിമണികൾ - കുഞ്ഞുണ്ണിക്കവിതകൾ

(കറന്റ് ബുക്സിന്റെ 2004 ജൂലൈ എഡിഷൻ 'കുഞ്ഞുണ്ണിക്കവിത'കളിൽ നിന്ന് 460, 463, 464, 465, 466, 469, 490, 491 ക്രമനമ്പറുള്ള കവിതകൾ)

പാഠപുസ്തകം - യൂണിവേഴ്സിറ്റി പ്രസിദ്ധീകരണം

ബി.എ./ബി.എസ്‌സി.

സെമസ്റ്റർ 3 കോമൺ കോഴ്‌സ്

കോഴ്‌സ് കോഡ് : ML3CCT03

ദൃശ്യകലാസാഹിത്യം

പഠനലക്ഷ്യങ്ങൾ

1. കേരളത്തിന്റെ സമ്പന്നമായ ദൃശ്യകലാപാരമ്പര്യത്തെക്കുറിച്ച് കുട്ടികൾക്ക് അറിവ് നൽകുക.
2. സിനിമ പോലെയുള്ള ദൃശ്യകലകളെ പരിചയപ്പെടുത്തുക.

ഖണ്ഡം ഒന്ന് - സംസ്കൃത നാടകം.

മലയാളശാകുന്തളം നാലാമങ്കം-ഏ.ആർ രാജരാജവർമ്മ
ഊരുഭംഗം - ഭാസൻ -കാവാലം നാരായണപ്പണിക്കരുടെ തർജമ
(വിഷ്കംഭം കഴിഞ്ഞ് ബലദേവന്റെ സംഭാഷണം മുതൽ അവസാനം വരെ)

ഖണ്ഡം രണ്ട്- ആട്ടക്കഥ

നളചരിതം (ഒന്നാം ദിവസം)- ഉണ്ണായിവാര്യർ (തുടക്കം മുതൽ "എന്നുംചൊല്ലിക്ഖഗ പതി പറന്നംബരേ പോയ്മറഞ്ഞാൻ"(നാലാം രംഗത്തിന്റെ അവസാനം) വരെ)

ഖണ്ഡം മൂന്ന് - തുള്ളൽ

കല്യാണസൗഗന്ധികം (ശീതങ്കൻ തുള്ളൽ) - കുഞ്ചൻ നമ്പ്യാർ
(തുടക്കം മുതൽ'ശ്രീരാമദാസന്റെ വംശേ ജനിക്കയാൽ പാരം നിനക്കുമഹംഭാവ-മിങ്ങനെ' വരെയുള്ള ഭാഗങ്ങൾ)

ഖണ്ഡം നാല്- മലയാളനാടകം

'1128 ൽ ക്രൈം 27' - സി.ജെ. തോമസ്.

ഖണ്ഡം അഞ്ച് - സിനിമ

സിനിമയുടെ സാംസ്കാരിക പ്രതിനിധാനങ്ങളെ സൂക്ഷ്മതലത്തിൽ വിശകലനം ചെയ്യുന്ന ഡോ. പി.എസ് രാധാകൃഷ്ണന്റെ സിനിമാപഠനങ്ങൾ - 5 ലേഖനങ്ങൾ.

പാഠപുസ്തകം

1. ഖണ്ഡം 1,2, 3 ചേർത്തുകൊണ്ട് യൂണിവേഴ്സിറ്റി പ്രസിദ്ധീകരിക്കുന്ന പുസ്തകം.
2. 1128 -ൽ ക്രൈം 27 - സി.ജെ തോമസ്
3. സിനിമ: ദേശം, സംസ്കാരം, ചരിത്രം- ഡോ. പി.എസ് രാധാകൃഷ്ണൻ

ബി. എ./ബി. എസ്സി.

സെമസ്റ്റർ 4 കോമൺ കോഴ്സ്

കോഴ്സ് കോഡ് : ML4CCT04

മലയാളഗദ്യരചനകൾ

മലയാള ഗദ്യത്തിന്റെ ശക്തിയും സാധ്യതയും മനസ്സിലാക്കാൻ പര്യാപ്തമായ ലേഖനങ്ങളാണ് ഇവിടെ പഠനവിഷയം. ഒപ്പം ഓർമ്മക്കുറിപ്പുകളിലൂടെ എഴുത്തുകാരെയും എഴുത്തുകാരെ രൂപപ്പെടുത്തിയ സമൂഹത്തെയും തിരിച്ചറിയുന്നത് എങ്ങനെയെന്ന് മനസ്സിലാക്കാൻ സാധിക്കുന്നു.

1. ലേഖനങ്ങൾ

പുസ്തകം - യൂണിവേഴ്സിറ്റി പ്രസിദ്ധീകരണം

1. കാളിദാസനും കാലത്തിന്റെ ദാസൻ- ജോസഫ് മുണ്ടശ്ശേരി
2. മാതൃഭാഷയിലേക്കുവീണ്ടും- എൻ.വി.കൃഷ്ണവാരിയർ
3. ഭൂമിയിൽ ഏകാന്തതയ്ക്കുമാത്രമായി ഒരിടമില്ല- സിയാറ്റിൽ മൂപ്പൻ
4. വാക്കുകളുടെ വിസ്മയം - എം.ടി.വാസുദേവൻ നായർ
5. മാറുന്ന മലയാള സംസാരഭാഷ-ടി.ബി. വേണുഗോപാലപ്പണിക്കർ
6. നമ്മുടെ അടുക്കള തിരിച്ചുപിടിക്കുക- സാറാജോസഫ്
7. മലയാളിയുടെ രാത്രികൾ- കെ.സി. നാരായണൻ
8. ചെമ്പൈ വൈദ്യനാഥഭാഗവതർ സംഗീതത്തിലെ സിംഹനാദം -ഇന്ദിരാമേനോൻ
9. ഈശ്വരപിള്ളയെ ആരോർക്കുന്നു- പി.കെ. രാജശേഖരൻ
10. പ്രകാശത്തിന്റെ ആയിരം തടവറകൾ - ജീവൻ ജോബ് തോമസ്
11. പുരികം-ഡെസ്മണ്ട് മോറിസ്
12. രവിവർമ്മ- വിജയകുമാർ മേനോൻ

2. അനുഭവം, ആത്മകഥ

പച്ചവിരൽ -ദയാബായി (ഡി.സി.ബുക്സ്, കോട്ടയം, 2015)

ബി.കോം

സെമസ്റ്റർ 1 കോമൺ കോഴ്സ്

കോഴ്സ് കോഡ് : ML1CCT05

കഥയും കവിതയും

പാഠപുസ്തകം - യൂണിവേഴ്സിറ്റി പ്രസിദ്ധീകരിക്കുന്നത്

പഠനലക്ഷ്യങ്ങൾ

1. സാമാന്യമായ സാഹിത്യപരിചയവും വായനാഭിരുചിയും ആസ്വാദനശേഷിയും വളർത്തിയെടുക്കുക
2. മലയാളസാഹിത്യത്തിൽ സംഭവിക്കുന്ന ഭാവുകത്വപരിണാമങ്ങൾ തിരിച്ചറിയുക
3. കാലഘട്ടത്തിന്റെ പൊതുപ്രവണതകളും ഉദാത്തമായ ജീവിതവീക്ഷണവും എഴുത്തിൽ പ്രകടമാവുന്നത് അനുഭവിച്ചറിയുക

കഥകൾ

1. ഉറൂബ് -ഇറ്റാർസിയിലേക്ക് തിരികെ പോകുന്ന വണ്ടി.
2. ഒ.വി വിജയൻ - കാറ്റു പറഞ്ഞ കഥ
3. എം. മുകുന്ദൻ -ദൽഹി 1981
4. സി.വി ശ്രീരാമൻ - ചിദംബരം
5. എൻ. പ്രഭാകരൻ- മറുപിറവി
6. സുഭാഷ് ചന്ദ്രൻ - തല്പം
7. ഗ്രേസി- തീച്ചാമുണ്ഡി
8. സി.എസ് ചന്ദ്രിക - ക്ലിനിക്കലി എക്സ്പയേർഡ്
9. അയ്മനം ജോൺ - കടിക്കുന്ന അമ്മച്ചിയും കൊച്ചുമകൾ ആൻസിയും
10. ഇ. സന്തോഷ് കുമാർ - ചേക്ക
11. ടി.വി കൊച്ചുബാവ - അടുക്കള

10 കവിതകൾ

1. മൈനാകശൃംഗം - ഇടശ്ശേരി
2. കടുക്ക - അയ്യപ്പപ്പണിക്കർ
3. പാടുന്ന പിശാചിന് - ഡി. വിനയചന്ദ്രൻ
4. വിളക്കു കൊളുത്തൂ വിളക്കു കൊളുത്തൂ - സാവിത്രി രാജീവൻ
5. ഇഷ്ടമുടിക്കായൽ - കുരീപ്പുഴ ശ്രീകുമാർ
6. വേനലിൽ ഒരുപുഴ - റോസ് മേരി.
7. കൈക്കലത്തുണികൾ - വിജില ചിറപ്പാട്
8. നായകടിക്കും സൂക്ഷിക്കുക - കൽപ്പറ്റ നാരായണൻ
9. തോരാമഴ - റഫീക്ക് അഹമ്മദ്
10. ശിലകളെ പൂവുകളാക്കുവാൻ - പി. രാമൻ

ബി.കോം

സെമസ്റ്റർ 2 കോമൺ കോഴ്സ്

കോഴ്സ് കോഡ് : ML2CCT06

ആത്മകഥ, ലേഖനം

ലക്ഷ്യം.

മലയാള ഗദ്യത്തിന്റെ സൗന്ദര്യവും ശക്തിയും തിരിച്ചറിയാൻ കഴിയും വിധമുള്ള ലേഖനങ്ങളാണ് ഈ സെമസ്റ്ററിലെ പഠന വിഷയം. വ്യത്യസ്ത മേഖലകൾ പഠിക്കുന്ന വിദ്യാർത്ഥികൾക്ക് പല വിഷയങ്ങളെയും മാതൃഭാഷയിൽ സമീപിക്കുവാൻ കഴിയുമെന്ന ബോധ്യം ഇതുവഴി ലഭ്യമാക്കാനാകും.

1. പാഠഭാഗങ്ങൾ

1. ഉത്തുംഗ സ്നേഹഗോപുരം-കല്പറ്റ നാരായണൻ
2. എതിർവാക്കുകൾ-ശാരദക്കുട്ടി
3. മഹാനടൻ- ചിദംബരസ്മരണ-ബാലചന്ദ്രൻചുള്ളിക്കാട്
4. അനുജന്റെ ഭാര്യ- ലളിതാംബിക അന്തർജനം
5. ഇന്ത്യയിലെ സ്വത്വബോധവും ഭാഷാ മനോഭാവവും-പി.എം. ഗിരീഷ്
6. അരങ്ങിലുയരുന്ന സ്ത്രീശബ്ദങ്ങൾ- സജിത മഠത്തിൽ
7. മാധ്യമസംസ്ക്കാരം-ജനകീയതയും ജനപ്രിയതയും- സി.എസ്. വെങ്കിടേശ്വരൻ.
8. സാധുജനപരിപാലനസംഘവും പുലയമഹാസഭയും- പി.ഗോവിന്ദപിള്ള

പാഠപുസ്തകം- യൂണിവേഴ്സിറ്റി പ്രസിദ്ധീകരണം

2. ആത്മകഥ

കണ്ടൽക്കാടുകൾക്കിടയിൽ എന്റെ ജീവിതം-പൊക്കുടൻ

COMMON COURSE
HINDI

B.A/ B.Sc Model I (Hindi)

SEMESTER I

Paper- 1- गद्य और एकाँकी (Prose & One Act Plays) (Text Book-साहित्य दर्पण)

Course Code-HN1CCT01

गद्य/ Prose

1. आईये हम वृक्ष देवता की आराधना करें - डॉ. किशोरी लाल व्यास
2. भय -रामचंद्र शुक्ल
3. हिमाच्छादित उत्तुंग शिखर और धुली हरियाली - विजय कुमार सन्देश
4. कफ़न चोर का बेटा -उषा बाला
5. जब मैं फेल हुआ- ए पी जे अब्दुल कलाम
6. जब इंतिज़ार हुसैन अपनी जन्मभूमि आये -अजहर वजाहत

एकाँकी /One Act Plays

1. दीपदान – रामकुमार वर्मा
2. जान से प्यारे – ममता कालिया
3. बहु की विदा – विनोद रस्तोगी
4. सती – जी. के. हरिजीत
5. हरी घास पर घंटे भर – सुरेन्द्र वर्मा

(Module-wise Distribution)

MODULE- I	MODULE- II	MODULE- III	MODULE- IV
आईये हम वृक्ष देवता की आराधना करें	हिमाच्छादित उत्तुंग शिखर और धुली हरियाली	जब मैं फेल हुआ	जब इंतिज़ार हुसैन अपनी जन्मभूमि आये
भय	कफ़न चोर का बेटा	बहु की विदा	हरी घास पर घंटे भर
दीपदान	जान से प्यारे	सती	

SEMESTER II

Paper- 2- कहानी और उपन्यास (Short stories & Novel)

Course Code-HN2CCT02

उपन्यास/ Novel

1. अंतिम साक्षय – चंद्रकांता

कहानी/ Short stories (Text Book-कथा संसार)

1. ईदगाह- प्रेमचंद
2. हीलिबोन की बतखें- अज्ञेय
3. अमरूद का पेड -ज्ञानरंजन
4. जंगल का दाह- स्वयंप्रकाश
5. छुट्टी का दिन- उषा प्रियंवदा
6. बाज़ार में रामधन- कैलाश बनवासी
7. माँ रसोई में रहती है – कुमार अम्बुज

(Module-wise Distribution)

MODULE- I	MODULE- II	MODULE- III	MODULE- IV
अंतिम साक्षय	अंतिम साक्षय	अंतिम साक्षय	अंतिम साक्षय
ईदगाह	अमरूद का पेड	छुट्टी का दिन	माँ रसोई में रहती है
हीलिबोन की बतखें	जंगल का दाह	बाज़ार में रामधन	

SEMESTER III

Paper- 3- कविता, व्याकरण और अनुवाद (Poetry, Grammar & Translation)

कविता/ Poetry (Text Book-काव्य कुसुम)

Course Code-HN3CCT03

1. कबीरदास – दोहा (4)
2. तुलसीदास – पद (2)
3. मीराबाई – पद (2)
4. बिहारी – दोहा (3)
5. जागो फिर एक बार - सूर्यकांत त्रिपाठी निराला
6. वे मुस्काते फूल नहीं – महादेवी वर्मा
7. खेवली – धूमिल
8. छीनने आये हैं वे – सर्वेश्वर दयाल सक्सेना
9. आज़ादी उर्फ गुलामी- ज्ञानेन्द्रपति
10. तुम्हें कुछ करना चाहिए – चंद्रकांत देवताले
11. सबूत – अरुण कमल
12. दिल्ली दरवाज़ा – कुमार विकल
13. जंगल के उजाड में – विनोद कुमार शुक्ल
14. बाज़ार – मंगलेश डबराल
15. बीसवीं शती के अंतिम दिनों का एक आश्चर्य – राजेश जोशी
16. दो हाथियों की लड़ाई – उदयप्रकाश
17. ठंडे पानी की मशीन - एकांत श्रीवास्तव
18. अच्छे आदमी – कुमार अम्बुज

व्याकरण और अनुवाद (Grammar & Translation)

1. सामान्य हिंदी व्याकरण तथा रचना –श्रीकृष्ण पाण्डेय (Page -19-58 & 111-117)

(Module-wise Distribution)

MODULE- I	MODULE- II	MODULE- III	MODULE- IV
कबीरदास तुलसीदास बिहारी मीराबाई	जागो फिर एक बार वे मुस्काते फूल नहीं खेवली छीनने आये हैं वे आज़ादी उर्फ गुलामी	तुम्हें कुछ करना चाहिए सबूत दिल्ली दरवाज़ा जंगल के उजाड में बाज़ार	बीसवीं शती के अंतिम दिनों का एक आश्चर्य दो हाथियों की लड़ाई ठंडे पानी की मशीन अच्छे आदमी
व्याकरण			व्याकरण
अनुवाद			अनुवाद

SEMESTER IV

Paper- 4- नाटक और लंबी कविता (Drama & Long Poem)

Course Code-HN4CCT04

नाटक/ Drama

1. कोणार्क – जगदीश चन्द्र माथुर

लंबी कविता (Long Poem) (Text Book-पांच लंबी कविताएँ)

1. नगई महुरा- त्रिलोचन
2. शहंशाह की नींद – उमाशंकर चौधरी
3. ढाबा – नीलेश रघुवंशी
4. इतनी दूर मत व्याहना बाबा – निर्मला पुत्तुल
5. जवाहर टनल –अग्निशेखर

(Module-wise Distribution)

MODULE- I	MODULE- II	MODULE- III	MODULE- IV
कोणार्क	कोणार्क	कोणार्क	कोणार्क
नगई महुरा	शहंशाह की नींद	ढाबा	जवाहर टनल
		इतनी दूर मत व्याहना बाबा	

B.Com Model I

SEMESTER I

Paper- 1- गद्य और संचार मीडिया (Prose & Mass Media)

Course Code-HN1CCT01

गद्य/ Prose (Text Book-साहित्य सागर)

1. नेहरु का रास्ता - माधव हाड़ा
2. जूठन- ओमप्रकाश वात्मीकी
3. चूहा और मैं- हरिशंकर परसाई
4. अग्नि की उड़ान- ए पी जे अब्दुल कलाम
5. आस्था और रोमांच की यात्रा- पवन चौहान
6. गौरी का गुस्सा-स्वयं प्रकाश

संचार मीडिया (Mass Media) (Text Book-संचार मीडिया एवं व्यावसायिक पत्र लेखन)

1. दर्शकों को अब भी अच्छे सिनेमा की तलाश – ओमपुरी
2. विज्ञापन और स्त्री – कुमुद शर्मा
3. माध्यम् की तलाश – राही मासूम रज़ा
4. चक दे इण्डिया – रामशरण जोशी

(Module-wise Distribution)

MODULE- I	MODULE- II	MODULE- III	MODULE- IV
नेहरु का रास्ता	चूहा और मैं	आस्था और रोमांच की यात्रा	गौरी का गुस्सा
जूठन	अग्नि की उड़ान		
दर्शकों को अब भी अच्छे सिनेमा की तलाश	विज्ञापन और स्त्री	माध्यम् की तलाश	चक दे इण्डिया

SEMESTER II

Paper- 2- कविता, व्यावसायिक पत्र लेखन और अनुवाद
(Poetry, Commercial Correspondence & Translation)

Course Code-HN2CCT02

कविता/ Poetry (Text Book-साहित्य सागर)

1. कबीरदास – दोहा (4)
2. तुलसीदास – पद (2)
3. बादल राग -सूर्यकांत त्रिपाठी निराला
4. कुमुद दल से वेदना के दाग को – महादेवी वर्मा
5. आत्म परिचय – हरिवंश राय बच्चन
6. हत्या और अपराध- भगवत रावत
7. अकेला आदमी- कुमार अम्बुज
8. पोलिथीन-ज्ञानेद्रपति
9. मूल्य- एकांत श्रीवास्तव
10. बेजगह- अनामिका
11. घृणा और प्रेम कहां से शुरू होता है- ओमप्रकाश वाल्मीकी
12. डेली पैसेंजर- अरुण कमल

व्यावसायिक पत्र लेखन और अनुवाद (Commercial Correspondence & Translation)
(Text Book-संचार मीडिया एवं व्यावसायिक पत्र लेखन)

(Module-wise Distribution)

MODULE- I	MODULE- II	MODULE- III	MODULE- IV
कबीरदास	कुमुद दल से वेदना के दाग को	अकेला आदमी	बेजगह
तुलसीदास	आत्म परिचय	पोलिथीन	घृणा और प्रेम कहां से शुरू होता है
बादल राग	हत्या और अपराध	मूल्य	डेली पैसेंजर
व्यावसायिक पत्र लेखन	अनुवाद	व्यावसायिक पत्र लेखन	अनुवाद

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