

2.61 Syllabus Copy

Curriculum for B.Sc. CS Program of RCUB as per NEP 2020 w.e.f. 2021-22

	microbes and their impact on humans and environment. 5. Gain laboratory skills such as microscopy, microbial cultures, staining, identification, preservation of microbes for their applications in research and industry.	
Unit No.	Course Content	Hours
Unit I	Chapter No. 1: Microbial diversity-Introduction to microbial diversity; Hierarchical organization and positions of microbes in the living world. Whittaker's five-kingdom system. Distribution of microbes in soil, air, food and water. Significance of microbial diversity in nature. 5 Hours Chapter No. 2: History and developments of microbiology- Microbiologists and their contributions (Leeuwenhoek, Louis Pasteur, Robert Koch, Joseph Lister, Dmitri Iwanowski, Sergius Winogradsky and M W Beijerinck and Paul Ehrlich). 3 Hours Chapter No. 3: Microscopy-Working principle and applications of light, dark field, phase contrast and electron microscopes (SEM and TEM). Microbiological stains (acidic, basic and special) and Principles of staining. Simple, Gram's and differential staining. 5 Hours	13
Unit II	Chapter No. 4: Culture media for Microbes-Natural and synthetic media, Routine media -basal media, enriched media, selective media, indicator media, transport media, and storage media. 5 Hours Chapter No. 5: Sterilization methods -Principle of disinfection, antiseptic, tyndallisation and Pasteurization, Sterilization-Sterilization by dry heat, moist heat, UV light, ionization radiation, filtration. Chemical methods of sterilization-phenolic compounds, anionic and cationic detergents. 5 Hours Chapter No. 6: Microbial Growth-Microbial growth and measurement. Nutritional types of Microbes- autotrophs and heterotrophs, phototrophs and chemotrophs; lithotrophs and organotrophs. 5 Hours	13
Unit III	Chapter No. 7: Microbial cultures and preservation-Microbial cultures. Pure culture and axenic cultures, subculturing, Preservation methods-overlapping cultures with mineral oils, lyophilisation. Microbial culture	13

Page 23 of 33


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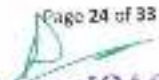

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	collections and their importance. A brief account on ITCC, MTCC and ATCC. 5 Hours Chapter No. 8. Viruses- General structure and classification of Viruses; ICTV system of classification. Structure and multiplication of TMV, SARS-COV-2, and Bacteriophage (T2). Cultivation of viruses. Vaccines and types. 5 Hours Chapter No. 9. Viroids- general characteristics and structure of Potato Spindle Tuber Viroid (PSTVd), Prions - general characters and Prion diseases. Economic importance of viruses. 3 Hours	
Unit IV	Chapter No. 10. Bacteria- General characteristics and classification. Archaeobacteria and Eubacteria. Ultrastructure of Bacteria; Bacterial growth and nutrition. Reproduction in bacteria- asexual and sexual methods. Study of <i>Rhizobium</i> and its applications. A brief account of Actinomycetes and Cyanobacteria. Mycoplasmas and Phytoplasmas- General characteristics and diseases. Economic importance of Bacteria. 5 Hours Chapter No. 11. Fungi-General characteristics and classification. Thallus organization and nutrition in fungi. Reproduction in fungi (asexual and sexual). Heterothallism and parasexuality. Type study of <i>Phytophthora</i>, <i>Rhizopus</i>, <i>Penicillium</i>, <i>Aspergillus</i>. 5 Hours Chapter No. 12. Lichens – Structure and reproduction. VAM Fungi and their significance. Fungal diseases- Black stem rust of wheat; Downy Mildew of Bajra, Grain smut of Sorghum, Citrus Canker, Economic importance of Fungi. 3 Hours	13
Recommended Learning Resources		


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Page 24 of 33

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Recommended Learning Resources		

Print Resources	Text Books 1. Ananthnarayan R and Panikar JCK. 1986. Text book of Microbiology. Orient Longman Ltd. New Delhi. 2. Arora DR. 2004. Textbook of Microbiology. CBS, New Delhi. 3. William CG. 1989. Understanding microbes. A laboratory text book for Microbiology, W.H. Freeman and Company. New York. 4. Dubey RC and Maheshwari DK. 2007. A textbook of Microbiology, S. Chand and Company, New Delhi. 5. Dubey RC and Maheshwari DK. 2002. A Text book of Microbiology, S.C.Chand and Company, Ltd. Rammagar, New Delhi. 6. Sharma R. 2006. Text book of Microbiology. Mittal Publications. New Delhi. 305pp. 7. Sharma PD. 1999. Microbiology and Plant Pathology. Rastogi publications. Meerut, India. 8. Vasanthkumari R. 2007. A textbook of Microbiology, BI Publications Pvt. Ltd., New Delhi. References 1. Alexopoulos CJ and Mims CW. 1989. Introductory Mycology, Wiley Eastern Ltd., New Delhi. 2. Atlas RM. 1988. Microbiology: Fundamentals and Applications, Macmillan publishing co. New York. 3. Brock TD, Smith DW and Madigan MT. 1984. Biology of Microorganisms, 4th ed. Englewood Cliffs, N.J. Prentice-Hall, New Delhi. 4. Burnell JH and Trinci APJ. 1979. Fungal walls and hyphal growth, Cambridge University Press, Cambridge. 5. Michel J, Pelczar Jr, EC and Krieg CR. 2005. Microbiology, Mc.Graw-Hill, New Delhi. 6. Power CB and Dagarwala. 1991. General Microbiology, Vol -1 and Vol - II Himalaya publishing house, Bombay. 7. Reddy S and Ram. 2007. Microbial Physiology. Scientific Publishers, Jodhpur, 385pp. 8. Sullin SB and Shanmaram S. 1998. General Microbiology. Oxford and IBH publishing Co. Pvt. Ltd. New Delhi.
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Year	I	Course Code: 21BSC1BOT1P	Credits	02
Sem.	1	Course Title: Microbial diversity and Technology	Hours	45
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 25		Summative Assessment Marks: 25	Duration of ESA: 03 hrs.	
Practical 1: Safety measures in microbiology laboratory and study of equipment/appliances used for microbiological studies (Microscopes, Hot air oven, Autoclave/Pressure Cooker, Inoculation needles/loop, Petri plates, Incubator, Laminar flow hood, Colony counter, Haemocytometer, Micrometer etc.). Practical 2: Enumeration of soil/food /seed microorganisms by serial dilution technique (3) Practical 3: Preparation of culture media (NA/PDA) sterilization, inoculation, incubation of (<i>B. coli</i> / <i>B. subtilis</i> / <i>Tungi</i>) and study of cultural characteristics. (3) Practical 4: Determination of cell count by using Hemocytometer and determination of microbial cell dimension by using Micrometer. (3) Practical 6: Simple staining of bacteria (Crystal violet /Nigrosine blue) / Gram's staining of bacteria. (3) Practical 7: Isolation and study of morphology of <i>Rhizobium</i> from root nodules of legumes (3) Practical 8: Preparation of spawn and cultivation of paddy straw (Oyster) mushroom. (3) Practical 9: Study of vegetative structures and reproductive structures - <i>Albugo</i>, <i>Phytophthora</i>, <i>Pythium</i>, <i>Rhizopus</i>, <i>Mucor</i>, <i>Saccharomyces</i>, <i>Puccinia</i>, <i>Agaricus</i>, <i>Lycoperdon</i>, <i>Aspergillus</i>, <i>Penicillium</i>. (3) Practical 10: Preparation of agar slants, inoculation, incubation, pure culturing and preservation of microbes by oil overlaying. (4) Practical 11: Downy mildew of Bajra/Maize/Sorghum, Citrus-chanker, Tobacco mosaic disease. (3) Practical 12: Study of well-known microbiologists and their contributions through charts and photographs. (3) Practical-13: Visit to water purification units/Composting/microbiology laboratory and farms to understand role of microbes in day today life. (3)				


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 26 of 33
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Year	I	Course Code: 21BSC1BOT1P	Credits	02
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	processing & uses). Green revolution. Brief account of millets and their nutritional importance.	
Unit II	Legumes: General account (including chief pulses grown in Karnataka- red gram, green gram, chick pea, soybean). Importance to man and ecosystem. Cash crops: Morphology, new varieties and processing of sugarcane, products and by-products of sugarcane industry. Natural Rubber – cultivation, tapping and processing.	10
Unit III	Spices: Listing of important spices, their family and parts used, economic importance with special reference to Karnataka. Study of fennel, clove, black pepper and cardamom. Fruits: Mango, grapes and Citrus (Origin, morphology, cultivation, processing and uses)	10
Unit IV	Oils and fats: General description, classification, extraction, their uses and health implications; groundnut, coconut, sunflower and mustard (Botanical name, family & uses). Non edible oil yielding trees and importance as biofuel, Neem oil and applications. Beverages: Tea, Coffee (morphology, processing & uses)	10
Recommended Learning Resources		
Print Resources	Text Books: 1. Kochhar, S.L. (2012). Economic Botany in Tropics, MacMillan & Co, New Delhi. 2. Wickers, G.E. (2001). Economic Botany: Principles & Practices. The Netherlands: Kluwer Academic Publishers, Netherland. 3. Chrispeels, M.J. and Sadava, D.E. (1994) Plants, Genes and Agriculture, Jones & Bartlett- Publishers, Lincoln, United Kingdom	

Semester: II

1	Course Code: 21BSC2BOT2L	Cred
2	Course Title: Diversity of non flowering plants	Hour


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 Page 28 of 33
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IV	Gymnosperms. Study of the habitat, distribution, habit, anatomy, reproduction and life-cycles in Cycas, Pinus and Gnetum.	5 Hours
	Chapter No. 9. Affinities and evolutionary significance of Gymnosperms. Economic importance of Gymnosperms - food, timber, industrial uses and medicines.	3 Hours
	Chapter No. 10. Origin and evolution of Plants: Origin and evolution of plants through Geological Time scale.	2 Hours
	Chapter No. 11. Paleobotany- Paleobotanical records, plant fossils, Preservation of plant fossils - impressions, compressions, petrification's, moulds and casts, pith casts. Radiocarbon dating.	6 Hours
	Chapter No. 12. Fossil taxa- <i>Rhynia</i> , <i>Lepidodendron</i> , <i>Lyginopteris</i> Exploration of fossil fuels, Barba/Sauri Institute of Paleosciences.	5 Hours

Recommended Learning Resources

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	Text Books 1) Chopra, G.L. A text book of Algae, Rastogi & Co., Meerut, Co., New Delhi, Depot, Allahabad. 2) Johri, Lata and Tyagi, 2012, A Text Book of Veda and Books, New Delhi. 3) Sharma, O.P., 1990, Text Book of Pteridophyta, McMillan India Ltd, New Delhi 4) Sharma, O.P., 1992, Text Book of Thallophytes, McGraw Hill Publishing Co, New Delhi. 5) Sharma, O.P., 2017, Algae Singh-Pandey-Jain 2014-15, A Text Book of Botany, Rastogi Publication, Meerut. References 1. Samchariary, A.V.S.S., A Text Book of Algae, I.S. International Private Ltd., New Delhi. 2. Agashe, S.S., 1995, Paleobotany- Plants of the past, their evolution, paleoenvironment and All plants, Hutchinson & Co., Ltd., London. 3. Anderson R.A., 2005, Algal culture Techniques, Elsevier, London. 4. Publication, Application in exploration of Fossil fuels, Oxford & IBH, New Delhi. 5. Farris, A.J., (1974) Morphology of vascular plants - Lower groups, Tata Mc Graw Hill Publishing Co, Delhi, Freeman & Co., New York. 6. Fritze, R.E., 1977, Structure and reproduction of Algae, Cambridge University Press. 7. Goffinet B. and Shaw A.J., 2009, Bryophyte Biology, 2nd ed, Cambridge University Press.


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Practical -6: Study of morphology, classification, anatomy and reproduction in Cyans. **Practical -7:** Study of morphology, classification & anatomy, reproduction in Pinus. **Practical -8:** Study of morphology, classification & anatomy, reproduction in Gnetum.
Practical -9: Study of important blue green algae causing water blooms in the lakes.
Practical -10: Preparation of natural media and cultivation of Azolla in artificial ponds.
Practical -11: Study different algal products and fossils impressions and slides.
Practical-12: Visit to algal cultivation units/lakes with algal blooms/Fern house/ Nurseries/Geology museum/lab to study plant fossils.
 (Note: Botanical study tour to a floristic rich area for 1-2 days and submission of study report is compulsory)

Evaluation Scheme for Lab Examination

Assessment Criteria	Marks
Classification and Description	10
T.S. of given material	05
Identification	05
Viva Voce /Tour report	05
Total	25

OPEN-ELECTIVE SYLLABUS:

Year	I	Course Code: 21BSC11012	Credits	05
Sem.	II	Course Title: Bio-fuels	Hours	40
Course Pre-requisites, if any	NA			
Formative Assessment Marks:	40	Summative Assessment Marks:	60	Duration of ESA: 03 hrs.
Course Outcomes	At the end of the course the student should be able to: 1. To make the students familiar with Bio-fuel plant species cultivation for commercial exploitation. 2. To make the students known about the Bio-fuel used in automobile industries and solving fuel problems in future. 3. To generate interest amongst the students to know the importance of Bio-fuel in day-to-day life and economic wellbeing.			


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Viva Voce /Tour report	05
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OPEN-ELECTIVE SYLLABUS:

Year	I	Course Code: 21BSC11012	Credits	05
Sem.	II	Course Title: Bio-fuels	Hours	40
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B.Sc. BOTANY SEMESTER IV

Title of the Course: Ecology and Conservation Biology

Number of Theory Credits	Total Lecture Hours/Semester	Number of Practical Credits	Total Practical hours/Semester
04	56	02	56
Contents of Theory Course			
Unit 1	Topics	Teaching Hours	
Unit I	Introduction to Ecology and Conservation Biology: Definitions, Principles of Ecology, Brief History, Major Indian Contributions, Scope and importance. Ecological levels of organisation. Ecological factors: Climatic factors: light, temperature, precipitation and humidity. Edaphic factors: Soil and its types, soil texture, soil profile, soil formation; physicochemical properties of soil - mineral particle, soil pH, soil aeration, organic matter, soil humus and soil microorganisms. Topographic Factors: Altitude Ecological groups of plants and their adaptations: Morphological and anatomical adaptations of hydrophytes, xerophytes, epiphytes and halophytes.	15 Hrs	
Unit II	Ecosystem Ecology: Introduction, types of ecosystems with examples -terrestrial and aquatic, natural and artificial. Structure of ecosystem: Biotic and Abiotic components, detailed structure of a pond ecosystem. Ecosystem functions and processes: Food chain-grazing and detritus; Food web. Ecological pyramids -Pyramids of energy, biomass and number, Principles of Energy flow in ecosystem, Bio-geo chemical cycles: Gaseous cycles -carbon and nitrogen, Sedimentary cycle Phosphorus. Ecological succession: Definition, types- primary and secondary. General stages of succession. Hydrosere and xerosere. Community Ecology: Community and its characteristics - frequency, density, Abundance, cover and basal area, phenology, stratifications, life-forms. Concept of Ecotone and Ecotypes. Intra-specific and Inter-specific interactions with examples. Ecological methods and techniques: Methods of sampling plant communities - transects and quadrates. Remote sensing as a tool for vegetation analysis, land use - land cover mapping. Population Ecology: Population and its characteristics - Population density, natality, mortality, age distribution.	15 Hrs	

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B.Sc. BOTANY SEMESTER IV

Title of the Course: Ecology and Conservation Biology

Number of Theory Credits	Total Lecture Hours/Semester	Number of Practical Credits	Total Practical hours/Semester
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Unit 1	Topics	Teaching Hours	
Unit I	Introduction to Ecology and Conservation Biology: Definitions, Principles of Ecology, Brief History, Major Indian Contributions, Scope and importance. Ecological levels of organisation. Ecological factors: Climatic factors: light, temperature, precipitation and humidity. Edaphic factors: Soil and its types, soil texture, soil profile, soil formation; physicochemical properties of soil - mineral particle, soil pH, soil aeration, organic matter, soil humus and soil microorganisms. Topographic Factors: Altitude Ecological groups of plants and their adaptations: Morphological and anatomical adaptations of hydrophytes, xerophytes, epiphytes and halophytes.	15 Hrs	
Unit II	Ecosystem Ecology: Introduction, types of ecosystems with examples -terrestrial and aquatic, natural and artificial. Structure of ecosystem: Biotic and Abiotic components, detailed structure of a pond ecosystem. Ecosystem functions and processes: Food chain-grazing and detritus; Food web. Ecological pyramids -Pyramids of energy, biomass and number, Principles of Energy flow in ecosystem, Bio-geo chemical cycles: Gaseous cycles -carbon and nitrogen, Sedimentary cycle Phosphorus. Ecological succession: Definition, types- primary and secondary. General stages of succession. Hydrosere and xerosere. Community Ecology: Community and its characteristics - frequency, density, Abundance, cover and basal area, phenology, stratifications, life-forms. Concept of Ecotone and Ecotypes. Intra-specific and Inter-specific interactions with examples. Ecological methods and techniques: Methods of sampling plant communities - transects and quadrates. Remote sensing as a tool for vegetation analysis, land use - land cover mapping. Population Ecology: Population and its characteristics - Population density, natality, mortality, age distribution.	15 Hrs	

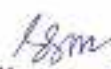
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V.V. SALIMATH ROAD, CHITTOOR

Chairperson IQAC

	population growth curves and dispersal.	
Unit III	Phytogeography and Environmental issues: Theory of land bridge, theory of continental drift, polar oscillations and glaciations. Centre of origin of plant – Vavilov's concept, types. Phytogeographical regions – concept, phytogeographical regions of India. Vegetation types of Karnataka – Composition and distribution of evergreen, semievergreen, deciduous, scrub, mangroves, shoal forests and grasslands. An account of the vegetation of the Western Ghats. Pollution: Water pollution: Causes, effect, types; water quality indicators, water quality standards in India, control of water pollution (Waste water treatment). Water pollution disasters – National mission on clean Ganga, Minimata, Pacific gyre garbage patch, Exxon valdez oil spill. Air pollution: Causes, effect, air quality standards, acid rain, control. Soil pollution: Causes, effect, solid waste management, control measures of soil pollution.	11 Hrs
Unit IV	<i>Biodiversity and its conservation: Biodiversity: Definition, types of biodiversity - habitat diversity, species diversity and genetic diversity. Global and Indian species diversity. SDG's in biodiversity conservation. Values of Biodiversity – Economic and aesthetic value, Medicinal and timber yielding plants, NTFP. Threats to biodiversity. Concept of Biodiversity Hotspots, Biodiversity hot spots of India. Concept of endemism and endemic species. ICUN plant categories with special reference to Karnataka/ Western Ghats. Biodiversity Conservation- Indian forest conservation act, Biodiversity bill (2002). Conservation methods – In-situ and ex-situmethods In-situmethods –Biosphere reserves, National parks, Sanctuaries, Sacred grooves. Ex-situmethods-Botanical gardens, Seed bank, Gene banks, Pollen banks, Culture collections, Cryopreservation.</i>	15 Hrs
	Total	56 Hrs

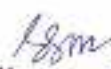

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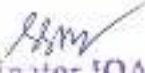

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SUGGESTED REFERENCE BOOKS:

1. Sharma, P.D. 2018. Fundamentals of Ecology. Rastogi Publications.
2. Odum E.P. (1975): Ecology By Holt, Rinert& Winston.
3. Oosting, H.G. (1978): Plants and Ecosystem Wadworth Belmont.
4. Kochhar, P.L. (1975): Plant Ecology. (9th Edn.) New Delhi, Bombay, Calcutta- 226pp.,
5. Kumar, H.D. (1992): Modern Concepts of Ecology (7th Edn.) Vikas Publishing Co., New Delhi.
6. Kumar H.D. (2000): Biodiversity & Sustainable Conservation. Oxford & IBH Publishing Co Ltd. New Delhi.
7. Newman, E.I. (2000): Applied Ecology, Blackwell Scientific Publisher, U.K.
8. Chapman, J.L&M.J. Reiss (1992): Ecology (Principles & Applications). Cambridge University Press, U.K.
9. Malcolm L. Hunter Jr., James P. Gibbs, Viorel D. Popescu, 2020. Fundamentals of Conservation Biology, 4th Edition. Wiley-Blackwel.
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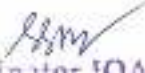

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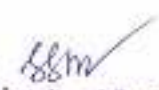

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List of Practical's in Ecology and Conservation Biology

Practical No.	Experiments
1	Determination of pH of different types of Soils, Estimation of salinity of soil/water samples.
2	Study of Ecological instruments – Wet and Dry thermometer, Altimeter, Hygrometer, Soil thermometer, Rain Gauge, Barometer, etc
3	Hydrophytes: Morphological adaptations in Pistia, Eichhornia, Hydrilla, Nymphaea. Anatomical adaptations in Hydrilla(stem) and Nymphaea (petiole).
4	Xerophytes: Morphological adaptations in Asparagus, Casuarina, Acacia, Aloe vera, Euphorbia tirucalli. Anatomical adaptations in phylloclade of Casuarina .
5	Epiphytes: Morphological adaptations in Acampe, Bulbophyllum, Drynaria. Anatomical adaptations in epiphytic root of Acampe/ Vanda. Halophytes: study of Viviparyin mangroves, Morphology and anatomy of Pneumatophores.
6	Study of a pond/forest ecosystem and recording the different biotic and abiotic components
7	Demonstration of different types of vegetation sampling methods – transects and quadrats. Determination of Density and frequency.
8	Application of remote sensing to vegetation analysis using satellite imageries
9	Field visits to study different types of local vegetations/ecosystems and the report to be written in practical record book.
10	Determination of water holding capacity of soil samples
11	Determination of Biological oxygen demand (BOD)
12	Determination of Chemical oxygen demand (COD)
13	Determination of soil texture of different soil samples.


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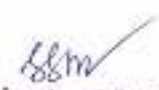

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RANI CHANNAMMA UNIVERSITY BELGAVI

B.Sc IV SEMESTER OPEN ELECTIVE COURSE (OEC-4)

PAPER: MEDICINAL PLANTS IN HEALTH CARE

SUBJECT: BOTANY (OEC CODE:-004 BOT 051)

Course No.	Type of Course	Theory / Practical	Credits	Instruction hour per week	Total No. of Lectures / Hours / Semester	Duration of Exam	Formative Assessment Marks	Summative Assessment Marks	Total Marks
004 BOT 051	OEC	Theory	03	03	42 Hrs	2 Hrs	40	60	100

OEC-4 (OEC for other students): 004 BOT 051

Title of the Paper: MEDICINAL PLANTS IN HEALTH CARE

Learning outcomes:

On completion of this course, the students will be able to: Recognize the basic medicinal plants

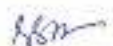
- Apply techniques of conservation and propagation of medicinal plants.
- Setup process of harvesting, drying and storage of medicinal herbs
- Propose new strategies to enhance growth of medicinal herbs considering
- the practical issues pertinent to India

Keywords:

Medicinal plants, Traditional systems, endangered medicinal plants, Ethnobotany, Folk medicines, Ethnic communities

Unit-I	History and Traditional System of Medicine History, Scope and Importance of Medicinal Plants; Traditional systems of medicine; Definition and Scope. Ayurveda: History, origin, panchamahabhutas, saptadhatu and tridosha concepts, Rasayana, plants used in ayurvedic treatments, Siddha: Origin of Siddha medicinal systems, Basis of Siddha system, plants used in Siddha medicine. Unani: History, concept: Umoor-e-tabiya, tumors treatments / therapy, polyherbal formulations.	14 Hrs
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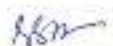
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Unit II	Conservation, Augmentation and Ethnobotany and Folk Medicine Conservation of Endemic and endangered medicinal plants, Red list criteria; In situ conservation: Biosphere reserves, sacred groves, National Parks; Ex situ conservation: Botanic Gardens, Ethnomedicinal plant Gardens. Propagation of Medicinal Plants: Objectives of the nursery, its classification, important	14 Hrs
Unit III	Medicinal Plants Brief description of selected plants and derived drugs, namely Guggul (Commiphora) for hypercholesterolemia, Boswellia for inflammatory disorders, Arjuna (Terminalia arjuna) for cardioprotection, turmeric (Curcuma longa) for wound healing, antioxidant and anticancer properties, Kutaki (Picrorhiza kurroa) for hepatoprotection, Opium Poppy for analgesic and antitussive, Salix for analgesic, Cincona and Artemisia for Malaria, Rauwolfia as tranquillizer, Belladonna as anticholinergic, Digitalis as cardiotonic, Podophyllum as antitumor	14 Hrs
	Suggested Readings: 1. Akerele, O., Heywood, V. and Synge, H. (1991). The Conservation of Medicinal Plants. Cambridge University Press. 2. AYUSH (www.indianmedicine.nic.in). About the systems—An overview of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy. New Delhi: Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), Ministry and Family Welfare, Government of India. 3. CSIR- Central Institute of Medicinal and Aromatic Plants, Lucknow (2016). Aush Gyanya: Handbook of Medicinal and Aromatic Plant Cultivation. 4. Dev, S. (1997). Ethno-therapeutics and modern drug development: The potential of Ayurveda. Current Science 73:909-928. 5. Evans, W.C. (2009). Trease and Evans Pharmacognosy, 16th edn. Philadelphia, PA: Elsevier Saunders Ltd. 6. Jain, S.K. and Jain, Vartika. (eds.) (2017). Methods and Approaches in Ethnobotany: Concepts, Practices and Prospects. Deep Publications, Delhi 7. Kapoor, I.D. (2001). Handbook of Ayurvedic medicinal plants. Boca Raton, FL: CRC Press. 8. Saroya, A.S. (2017). Ethnobotany. ICAR publication. 9. Sharma, R.(2003). Medicinal Plants of India-An Encyclopaedia. Delhi: Daya Publishing House. 10. Sharma, R. (2013) Agro Techniques of Medicinal Plants. Daya Publishing House, Delhi. 11. Thakur, R.S., H.S. Puri, and Husain, A.(1989). Major medicinal plants of India. Central Institute of Medicinal and Aromatic Plants, Lucknow, India.	

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Details of Formative Assessment (IA) For DSCC theory/OEC: 40% weightage for Total Marks

Type of Asesment	Weightage	Duration	Comment
Written Test -1	10%	1 Hrs	8 th Week
Written Test-2	10%	1 Hrs	12 th Week
Seminar	10%	10 minutes	-----
Case Study/Assignment/Field Work/Project Work/Activity	10%	-----	-----
Total	40% of the Maximum Marks allotted for the paper.		

Faculty of Science

04- Year UG Honors Programme: 2022-23

General Pattern of Theory Question paper for OEC

(60 Marks for semester end Examination with 2 hrs duration)

1	Part-A	Question number 1-6 carries 2 marks each. Answer any 5 questions.	10 Marks
2	Part-B	Question number 7-11 carries 5 marks each. Answer any 4 questions.	20 Marks
3	Part-C	Question number 12- 15 carries 10 marks each. Answer any 3 question.	30 Marks
(Minimum 1 question from each unit and 10 marks question may have sub questions for 7+3 or 6+4 or 5+5 if necessary)			
Total -60 Marks			


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Practical Question Paper Pattern

RANI CHANNAMMA UNIVERSITY BELGAVI

B.Sc Botany IV Semester
(NEP) Ecology and
Conservation Biology

Time: 04 Hrs

Max Marks: 25

Q No I	Give the External and Internal features of Ecological adaptations with neat labeled diagram of specimen 'A'	05 Marks
Q No II	Determination of PH different types of Soils/Water samples 'B'	05 Marks
Q No III	Identify and describe the features of Ecological interest in slides C and D	06 Marks
Q No IV	Describe the use and mechanism of Ecological Instrument 'E'	04 Marks
Q No V	Submission of Field Visit Report	05 Marks
	Total	25

Instruction to Examiners

Q No I- Ecological Adaptations- Hydrophytes/Xerophytes/Epiphytes 'A' Preparation

-03

Diagram -02

(05)

Q No II-Determination of PH Soil/ Water 'B'

(05)

Q No III- Ecological slides – Hydrophytes/Xerophytes/Epiphytes

(06)

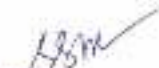
(Not repeat the Q No I)

Q No IV- Any one Ecological Instrument 'E'

(04)

Submission of Field Visit Report

(05)


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RANI CHANNAMMA UNIVERSITY BELGAVI

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(05)

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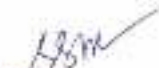
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V.V.SALIMATH Sc. College.
SINDGI-586128


Chairperson IQAC

Question Paper Pattern
RANI CHANNAMMA UNIVERSITY BELGAVI

B.Sc Botany IV Semester (NEP)

Subject:

Code:

Maximum Marks: 60

Answer any Six Questions from Question no I

Answer any Three each Questions from Question no II, III, IV and V

QNO I	Answer any Six Questions (At least Two questions from each unit) 1 2 3 4 5 6 7 8	2X6=12
QNO II	Should cover Entire unit I 1 2 3 4	4X3=12
QNO III	Should cover Entire unit II 1 2 3 4	4X3=12
QNO IV	Should cover Entire unit III 1 2 3 4	4X3=12
QNO V	Should cover Entire unit IV 1 2 3 4	4X3=12


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Question Paper Pattern
RANI CHANNAMMA UNIVERSITY BELGAVI

B.Sc Botany IV Semester (NEP)

Subject:

Code:

Maximum Marks: 60

Answer any Six Questions from Question no I

Answer any Three each Questions from Question no II, III, IV and V

QNO I	Answer any Six Questions (At least Two questions from each unit) 1 2 3 4 5 6 7 8	2X6=12
QNO II	Should cover Entire unit I 1 2 3 4	4X3=12
QNO III	Should cover Entire unit II 1 2 3 4	4X3=12
QNO IV	Should cover Entire unit III 1 2 3 4	4X3=12
QNO V	Should cover Entire unit IV 1 2 3 4	4X3=12


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B.Sc II Semester

B.Sc. II Semester Syllabus

Course Content

Chapter No. 1 Algae -Introduction and historical development in algology. General characteristics and classification of algae, Diversity- habitat, thallus organization, pigments, reserve food, flagella types, life-cycle and alternation of generation in Algae. Distribution of Algae.

Hours

Chapter No. 2 Morphology and reproduction and life-cycles of *Nostoc*, *Oedogonium*, *Spirogyra*, *Dictyocarpus* and *Batrachospermum*. Diatoms and their importance. Blue-green algae-A general account. Algal blooms and toxins.

5Hours

Chapter No. 3 Algal cultivation- Cultivation of microalgae-*Spirulina*; Algal cultivation methods in India. Algal products- Food and Nutraceuticals, Feed stocks, food colorants; fertilizers, aquaculture feed; pharmaceuticals and cosmetics; medicines; dietary fibres from algae and uses.

3 Hours

Chapter No. 4. Bryophytes - General characteristics and classification of Bryophytes, Diversity-habitat, thallus structure, Gametophytes and sporophytes.

5 Hours

Chapter No. 5 Distribution, morphology, anatomy, reproduction and life-cycles of *Riccia*, *Anthoceros*, and *Funaria*. Ecological and economic importance of Bryophytes. Fossil Bryophytes.

3 Hours

Chapter No. 6. . Pteridophytes- General characteristics and classification; Structure of sporophytes and life-cycles. Distribution, morphology, anatomy, reproduction and life-cycles in *Psilotum*, *Adiantum*, *Equisetum*, *Pteris*.

5Hours

Chapter No. 7 A brief account of heterospory and seed habit. Steady evolution in Pteridophytes. Affinities and evolutionary significance of Pteridophytes. Ecological and economic importance.

5Hours

Chapter No. 8. Gymnosperms- General characteristics. Distribution and classification of


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B.Sc II Semester

B.Sc. II Semester Syllabus

Course Content

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Hours

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5Hours

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V	Gymnosperms. Study of the habitat, distribution, habit, anatomy, reproduction and life-cycles in <i>Cycas</i> , <i>Pinus</i> and <i>Gnetum</i> .	5 Hours
	Chapter No. 9. Affinities and evolutionary significance of Gymnosperms. Economic importance of Gymnosperms - food, timber, industrial uses and medicines.	3 Hours
	Chapter No. 10. Origin and evolution of Plants: Origin and evolution of plants through Geological Time scale.	2 Hours
	Chapter No. 11. Paleobotany- Paleobotanical records, plant fossils, Preservation of plant fossils - impressions, compressions, petrification's, moulds and casts, pith casts. Radiocarbon dating.	6 Hours
	Chapter No. 12. Fossil taxa- <i>Rhynia</i> , <i>Lepidodendron</i> , <i>Lyginopteris</i> Exploration of fossil fuels. Birbal Sahni Institute of Paleosciences.	5 Hours

Recommended Learning Resources

CS

Text Books:

Text Books

- 1) Chopra, G.L. A text book of Algae. Rastogi & Co., Meerut, Co., New Delhi, Depot. Allahabad.
- 2) Jobri, Latam Tyagi, 2012. A Text Book of, Vedam e Books, New Delhi.
- 3) Sharma, O.P. 1990. Text Book of Pteridophyta. McMillan India Ltd. New Delhi.
- 4) Sharma, O.P. 1992. Text Book of Thallophytes. McGraw Hill Publishing Co. New Delhi.
- 5) Sharma, O.P., 2017. Algae Singh-Pande-Jain 2004-05. A Text Book of Botany. Rastogi Publication, Meerut.

References

1. Sambamurthy, A.V.S.S. A Text Book of Algae. I.K. International Private Ltd., New Delhi.
2. Agashe, S.N. 1995. Paleobotany. Plants of the past, their evolution, paleoenvironment and plants. Hutchinson & Co., Ltd., London.
3. Anderson R.A. 2005, Algal cultural Techniques, Elsevier, London.
4. Publication, Application in exploration of fossil fuels. Oxford & IBH., New Delhi.
5. Fensholt, A.J., (1974) Morphology of vascular plants - Lower groups. Tata Mc Graw- Hill Publishing Co., New York.

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V	Gymnosperms. Study of the habitat, distribution, habit, anatomy, reproduction and life-cycles in <i>Cycas</i> , <i>Pinus</i> and <i>Gnetum</i> .	5 Hours
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B.Sc. II Semester Syllabus

Gymnosperms. Study of the habitat, distribution, habit, anatomy, reproduction and life-cycles in <i>Cycas</i> , <i>Pinus</i> and <i>Gnetum</i> .	5 Hours
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Dept. of Botany
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B.Sc. II Semester Syllabus

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V.V.S. SATYANATH S.C. College
SINDGI-586128

Chairperson IQAC

B.Sc. II Semester Syllabus

Practical-1: Study of morphology, classification, reproduction and lifecycle of Nostoc, Oscillatoria.

Practical-2: Study of morphology, classification, reproduction and life-cycle of Oedogonium & Spirogyra, Ectocarpus and Batrachospermum.

Practical-3: Study of morphology, classification, reproduction and life-cycle of Riccia & Anthoceros/ Funaria.

Practical-4: Study of morphology, classification, anatomy, reproduction and life-cycle of Selaginella and Equisetum.

Practical -5: Study of morphology, classification, anatomy, reproduction and life-cycle of Pteris, Azolla/ Psilotum


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B.Sc. II Semester Syllabus

Practical -6: Study of morphology, classification, anatomy and reproduction in Cycas.

Practical -7: Study of morphology, classification & anatomy, reproduction in Pinus.

Practical -8: Study of morphology, classification & anatomy, reproduction in Gnetum.

Practical -9: Study of important blue green algae causing water blooms in the lakes.

Practical -10: Preparation of natural media and cultivation of Azolla in artificial ponds.

Practical -11: Study different algal products and fossils impressions and slides.


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	microbes and their impact on humans and environment. 5. Gain laboratory skills such as microscopy, microbial cultures, staining, identification, preservation of microbes for their applications in research and industry.	
Unit No.	Course Content	Hours
Unit I	Chapter No. 1: Microbial diversity-Introduction to microbial diversity; Hierarchical organization and positions of microbes in the living world. Whittaker's five-kingdom system. Distribution of microbes in soil, air, food and water. Significance of microbial diversity in nature. 5 Hours Chapter No. 2 History and developments of microbiology- Microbiologists and their contributions (Leeuwenhoek, Louis Pasteur, Robert Koch, Joseph Lister, Dmitri Iwanowski, Sergius Winogradsky and M W Beijerinck and Paul Ehrlich). 3 Hours Chapter No. 3 Microscopy-Working principle and applications of light, dark field, phase contrast and electron microscopes (SEM and TEM). Microbiological stains (acidic, basic and special) and Principles of staining. Simple, Gram's and differential staining. 5 Hours	13
Unit II	Chapter No. 4. Culture media for Microbes-Natural and synthetic media, Routine media -basal media, enriched media, selective media, indicator media, transport media, and storage media. 5 Hours Chapter No. 5. Sterilization methods -Principle of disinfection, antiseptic, tyndallisation and Pasteurization, Sterilization-Sterilization by dry heat, moist heat, UV light, ionization radiation, filtration. Chemical methods of sterilization-phenolic compounds, anionic and cationic detergents. 5 Hours Chapter No. 6. Microbial Growth-Microbial growth and measurement. Nutritional types of Microbes- autotrophs and heterotrophs, phototrophs and chemotrophs; lithotrophs and organotrophs. 5 Hours	13
Unit III	Chapter No. 7 Microbial cultures and preservation-Microbial cultures. Pure culture and axenic cultures, subculturing, Preservation methods-overlapping cultures with mineral oils, lyophilisation. Microbial culture	13

- स्वयं-कृत साध्यता का प्रयोग
- आलोचनात्मक मूल्यांकन पर बल
- आई सी टी का उपयोग
- यू ट्यूब चैनल का प्रयोग
- लेखन द्वारा वैराग्य लेखन
- रचनात्मक अभिव्यक्ति
- मूल्यांकन पद्धति

सेमेस्टर के अनुसार परीक्षा परिणाम तैयार किये जाएं। सेमेस्टर के अंतर्गत आंतरिक मूल्यांकन, सत्र मूल्यांकन और सत्र के अंत में ली जानेवाली परीक्षा सम्मिलित हो। प्रत्येक सेमेस्टर में निर्धारित कोर्स 100 अंकों का हो। जिसमें 40 अंक आंतरिक मूल्यांकन और सत्र परीक्षा में 60 अंक निर्धारित हैं। आंतरिक मूल्यांकन में कक्षा में आयोजित की जानेवाली परीक्षा, मौखिक प्रस्तुतियाँ, संगोष्ठी, साक्षात्कार, लघु उत्तरीय प्रश्न और तकनीकी ज्ञान के परीक्षण के आधार पर मूल्यांकन किया जाना चाहिए। इस प्रकार विद्यार्थी का समय मूल्यांकन हो सकेगा।

Model Program Structure for Under Graduate (UG) Program

HINDI (AECC)

B.Com: Ability Enhancement Compulsory Course (AECC)

Semester	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I&II)	Assignment	Attendance
I	Collection of Prose + Grammar	3	04	10+15+20+15	20	10	10
II	Collection of Short stories + Media Writing	3	04	10+15+20+15	20	10	10
III	Collection of Poetry+ Letter Writing	3	04	10+15+20+15	20	10	10
IV	Drama +Computer and Hindi	3	04	10+15+20+15	20	10	10
					60+40= 100		

BBA/BCA/BSW/CCJ Etc.:

Ability Enhancement Compulsory Course (AECC)

Semester	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I&II)	Assignment	Attendance
I	Collection of Short Stories+ Grammar	3	04	10+15+20+15	20	10	10
II	Collection of Prose +Functional Hindi	3	04	10+15+20+15	20	10	10
III	Collection of Poetry	3	04	10+15+20+15	20	10	10
IV	Drama +Summarization, Expansion of Idea	3	04	10+15+20+15	20	10	10
					60+40= 100		

B. Sc.: Ability Enhancement Compulsory Course (AECC)

Semester	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I&II)	Assignment	Attendance
I	Collection of Short Stories + Functional Hindi	3	04	10+15+20+15	20	10	10
II	Collection of Poems +Translation	3	04	10+15+20+15	20	10	10
III	Collection of One Act Play + Letter Writing	3	04	10+15+20+15	20	10	10
IV	Novel +Mass Communication	3	04	10+15+20+15	20	10	10
					60+40= 100		

B.A.: Ability Enhancement Compulsory Course (AECC)

Semester	AECC	Credit	Hours	Theory Marks 40	Internal Assessment 40		
					Test (1&II)	Assignment	Attendance
I	Collection of Short Stories Idioms and Proverbs	3	04	10+15+20+15	20	10	10
II	Short Novel -Functional Hindi	3	04	10+15+20+15	20	10	10
III	Collection of Prose	3	04	10+15+20+15	20	10	10
IV	Block Poetry+ Functional Hindi	3	04	10+15+20+15	20	10	10
					40-40= 100		

Model Program Structure for UG Program

B.A. with One Major and One Minor / Without Practical Discipline Specific Core /
Discipline Elective / Open Elective

Hindi (DSC/DSE/OE)

Sem	Discipline Core (DSC)	Credit	Hours	Discipline Elective (DSE) / Open Elective (OE)			Marks / 100	
					Credit	Hours	Theory	IA
I	Collection of Short Stories + Terminology	3	04	Performing Arts and Chalanchitra Writing	3	04	60	40
	Hindi Grammar	3	04		3	04	60	40
II	Collection of Poems	3	04	Social Media and Hindi	3	04	60	40
	Functional Hindi	3	04		3	04	60	40

Exit Option with Certificate Course (50 Credits)

Sem.	Discipline Core (DSC)	Credit	Hours	Discipline Elective (DSE) : Open Elective (OE)	Marks 100			
					Credit	Hours	Theory	IA
III	History of Hindi Literature } Adikal ,Bhaaratkal ,Ritikal }	3	64	General Introduction of Hindi Literature	3	64	60	40
	Collection of One Act Play	3	64		3	64	60	40
IV	Literary Genre : History of Hindi Literature	3	64	Translation Skill	3	64	60	40
	Literary Essay	3	64		3	64	60	40

Exit Option with Diploma Course (100 credits) Choose anyone Discipline as Major, the other as the Minor'



RANI CHANNAMMA UNIVERSITY,

BELAGAVI-591156, Karnataka-India

Dept. of Hindi

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OF

COURSE STRUCTURE AND SYLLABUS

as per the Choice Based Credit System (CBCS)

designed in accordance with

Learning Outcomes-Based Curriculum

Framework

(LOCF)

For

UNDERGRADUATE DEGREE

Subject: Hindi

Review of I & II Semester Syllabus 2021-22

B.A., B. Com., B. Sc., BBA/BCA/BSW/CCJ

w.e.f.

Academic Year 2022-23 and onwards

Head
Dept. of Hindi
G.P.P. Arts, Commerce & V.V.S. Science
College, SINDAGI-586128.

Co-ordinator IQAC
G. P. Porwal Arts, Comm & V. V. Salimath
Science College, SINDAGI-586128, Dattajayapur

Principal,
Porwal Arts, Comm &
Salimath Sc. College
SINDAGI-586128



नई शिक्षा नीति के तहत हिंदी पाठ्यक्रम की संरचना

1	Prof. Vinod Gayakwad Dean, Language Dept. Rani Channamma University, Belagavi	Chairman
2	Smt. Jayashree Anchi Head, Dept. of Hindi Maratha Mandal College, Belagavi	Member
3	Prof. M. M. Reddy PG Hindi Dept. Vivekanand College, Bengaluru	Member
4	Dr. Rajendra J. Powar Head, Dept. of Hindi R P D College, Belagavi	Member

प्रस्तावना

इस पाठ्यक्रम की संरचना ऐसी की गई है कि इसके अध्ययन के पश्चात हिंदी साहित्य का विद्यार्थी यह जान सके कि साहित्य का विश्लेषण कैसे किया जाए, उसकी सराहना कैसे की जाए और दिए गए पाठ को पढ़ने की समझ किस प्रकार विकसित की जाए ताकि विद्यार्थी भाषा और साहित्य के अंदर से भली भाँति परिचित हो सके। यह उल्लेखनीय है कि चयन आधारित क्रेडिट प्रणाली में हिंदी भाषा और साहित्य के पाठ्यक्रम की विशिष्ट भूमिका है। प्रस्तावित पाठ्यक्रम में भाषा के रूप में हिंदी के अध्ययन के लिए 4 क्रेडिट्स बनायी गयी हैं, जिससे विद्यार्थी अपने अनुशासन के अनुसार हिंदी भाषा का अध्ययन कर सकें। साथ ही औपन इलेक्टिव कोर्स का भी निर्माण हिंदी में रोजगार को ध्यान में रखकर किया गया है।

उत्तमता सस्य सूचना संति का है। यह पाठ्यक्रम रोजगारपरक शिक्षा देने का कार्य भी करेगा जिससे इसके अध्ययन के बाद विद्यार्थी अपने जीवन का निर्वाह भी उचित ढंग से कर सकें। इसमें उल्लेखित पाठों के अध्ययन के उपरान्त विद्यार्थी न केवल अपने विवेक को विकसित कर सकते हैं बल्कि विश्लेषण करने में भी समर्थ हो सकते हैं।

पाठ योजना के लिए शिक्षण आधारित दृष्टिकोण

हिंदी साहित्य और भाषा का अध्ययन वैज्ञानिकता की दृष्टि से महत्वपूर्ण है। इसका सीधा संबंध संवेदना और जीवन से है। विषय के रूप में इसको स्नातक अध्ययन के पाठ्यक्रम में आरंभ से ही न केवल सम्मिलित किया गया है बल्कि उसके विस्तार और विद्योजन में विशेष रूप से मानव मूल्यों और सामाजिक यथार्थ को सम्मिलित करने का भी प्रयास किया गया है। साहित्य का संबंध समाज से होता है। साहित्यकार समाज की यथार्थ स्थिति का न केवल आलोचन करता है बल्कि उसे भाषा के माध्यम से साहित्य में रूपांकित भी करता है। हिंदी साहित्य समृद्ध है और लोकप्रिय भी है जो गद्य और पद्य में लिखा गया है। हिंदी साहित्य और भाषा के सांस्कृतिक, सामाजिक, आध्यात्मिक जैसे अनेक पक्ष हैं और वर्तमान में यह साहित्य मानवतावादी, यथार्थवादी संवेदना और अस्मितामूलक दृष्टि से संपृक्त है।

हिंदी के स्नातक पाठ्यक्रम का उद्देश्य निम्नांकित लक्ष्यों को प्राप्त करना है

- मूलभूत कौशल श्रवण, लेखन और अभिव्यक्ति का विकास करना।
- भाषा कौशल का विकास करना।
- उच्चारण और लिपि का सही ज्ञान करना।
- विद्यार्थियों को संवेदनशील नागरिक बनाना।
- एक कुशल व्यक्ता का निर्माण करना।
- समाज और समुदाय के प्रति संवेदनशील दृष्टि का विकास करना।
- राष्ट्रीय घेतना का विकास करना।
- मानवीय मूल्यों के प्रति स्वस्थ दृष्टिकोण विकसित करना।
- विभिन्न साहित्यिक विधाओं की जानकारी देना।
- समाज के विभिन्न समुदायों के प्रति सहिष्णुता की भावना का विकास करना।
- साहित्यिक विमर्शों से परिचित करना।
- साहित्यिक पाठ और उनके संदर्भों में आलोचनात्मक प्रवृत्ति और कल्पनाशीलता का कौशल निर्माण करना।
- उच्च अध्ययन और अनुसंधान में बहुविषयक दृष्टिकोण स्थापित करना।
- विद्यार्थियों में समावेशी दृष्टिकोण, जिम्मेदार नागरिकता, नैतिक सोच और सामाजिक प्रतिबद्धता की भावना का निर्माण करना।
- रोजगार के लिए उचित व्यावसायिक कौशल में छात्रों को प्रशिक्षित करना।
- तकनीकी रूप से उन्नत विश्व में विद्यार्थियों को इसकी चुनौतियों और अवसरों के लिए तैयार करना।
- व्यावहारिक और अनुभवात्मक शिक्षण के लिए सक्षम करना।

यह पाठ्यक्रम विभिन्न स्तरों पर विद्यार्थियों की योग्यता का उल्लेख करते-करते सहज हो सकेगा, साथ ही साथ यह सामाजिक जटिलताओं को साहित्य के माध्यम से समझाने में भी निर्धारक के रूप में काम करेगा। साहित्य के साथ साथ भाषा की समझ भी विद्यार्थियों में विकसित होगी जिसकी सहायता से विद्यार्थी चिंतन, विश्लेषण और मूल्यांकन से

संबंधित आधार विद्वानों को जान सकेंगे। उनकी रोज़गार पाने की योग्यता तो विकसित होगी ही साथ ही विभिन्न संदर्भों को जान सकेंगे।

परिणाम (Out Come)

इस पाठ्यक्रम के पठन भाठन की दिशा में निम्नलिखित परिणाम सामने आएंगे।

- हिंदी भाषा की आरंभिक स्तर से लेकर वर्तमान के बढ़ते स्तरों की जानकारी प्राप्त की जा सकती है।
- भाषा के सैद्धांतिक रूप के साथ साथ व्यावहारिक रूप भी जाना जा सकता है।
- उच्च शैक्षिक स्तर पर हिंदी भाषा किता प्रबल महत्वपूर्ण भूमिका निभा सकती, इससे संबंधित परिणाम प्राप्त हो सकते हैं।
- भाषागत मूल्यों को व्यावहारिक रूप को भी जान सकते हैं।
- प्रयोजनमूलक हिंदी, प्रवर्धिता, अनुवाद आदि के अद्यापन, अध्ययन के द्वारा व्यावसायिकता की क्षमता में वृद्धि प्राप्त होगी।
- भारतीय साहित्य के अध्ययन से छात्रों के ज्ञान विस्तार तथा अभिव्यक्ति क्षमता में वृद्धि होगी।
- साहित्य के माध्यम से सौंदर्यबोध, नैतिकता, सामाजिक संतुष्टता, पर्यावरण संबंधी विषयों की समझ विकसित होगी।
- भाषायी और साहित्यिक क्षमता में वृद्धि होगी।
- गंभीर, समीक्षात्मक और स्वतंत्र चिंतन के लिए सक्षम होंगे।
- अपने विचारों को व्यक्त करने तथा बहुआयामी व्याख्याओं को समझने के लिए तैयार होंगे।
- रचनात्मकता में अभिरूचि का निर्माण होगा।
- साहित्यविकास के अध्ययन से साहित्यकार के युगबोध का परिचय होगा।
- व्यवसायिक शिक्षण के अध्ययन से विश्लेषण की क्षमता का निर्माण होगा।
- वर्तमान त्वन्तीकी वातावरण में हिंदी के प्रयोग में दक्ष होंगे।
- अनुवाद, रिपोर्ट लेखन, कविता, कहानी आदि की प्रस्तुति का अनुभव प्राप्त करेंगे।

शिक्षण पद्धति (Pedagogy)

शिक्षण की प्रक्रिया में हिंदी भाषा की दक्षता को मजबूत बनाना होगा। विद्यार्थी हिंदी भाषा में लपका और वैरिबल माध्यम की निर्माण प्रक्रिया में सहायक बन सकें। अपनी भाषा में व्यवहार और निपुणता प्राप्त कर सकें। साहित्य की समझ विकसित कर सकें तथा आलोचनात्मक एवं साहित्यिक विवेक निर्मित किया जा सके। इसलिए निम्नलिखित शिक्षण पद्धति का उपयोग किया जा सकता है।

- व्याख्यान
- संवाद एवं बहस
- सामूहिक चर्चा
- कक्षाओं में पठन-पाठन की पद्धति
- परिदेश का सृजन
- अभिनय पद्धति का प्रयोग
- क्षेत्रीय अथवा परियोजना कार्य
- अध्ययन से संबंधित मॉडल
- प्रदर्शन कलाओं को वास्तविक रूप देना
- लिखित परीक्षा
- आंतरिक मूल्यांकन
- शोध सर्वेक्षण
- वाद-विवाद
- दृश-श्रव्य माध्यम का प्रयोग
- आलोचनात्मक मूल्यांकन पर बल
- आई सी टी का उपयोग
- चूँदूबूबू चैनल का प्रयोग
- तंत्रज्ञान द्वारा परामर्श लेखन
- रचनात्मक अभिव्यक्ति
- मूल्यांकन पद्धति

सेमेस्टर के अनुसार परीक्षा परिणाम तैयार किये जाएँ। सेमेस्टर के अंतर्गत आंतरिक मूल्यांकन, सत्र मूल्यांकन और सब के अंत में ती जातेवली परीक्षा सम्मिलित हो। प्रत्येक सेमेस्टर में निर्धारित कोर्स के लिए प्रश्नपत्र 100 अंकों का हो। जिसमें 40 अंक आंतरिक मूल्यांकन और सत्र परीक्षा में 60 अंक निर्धारित हैं। आंतरिक मूल्यांकन में कक्षा में आयोजित की जानेवाली परीक्षा, मौखिक प्रस्तुतियों, संगीत, साक्षात्कार, तथा उत्तरीय प्रश्न और तयनीकी ज्ञान के परीक्षण के आधार पर मूल्यांकन किया जाना चाहिए। इस प्रकार विद्यार्थी का समग्र मूल्यांकन हो सकेगा। उक्त प्रश्नपत्र में तीन तरह के प्रश्न होने चाहिए: बहुविकल्पीय, लघु उत्तरीय दीर्घ उत्तरीय, व्याख्या या संदर्भ।

Model Program Structure for Under Graduate (UG) Program

HINDI (AECC)

B.Com: Ability Enhancement Compulsory Course (AECC)

Semester	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I&II)	Assignment	Attendance
I	Collection of Prose + Grammar	3	04	10+15+20+15	20	10	10
II	Collection of Short stories + Media Writing	3	04	10+15+20+15	20	10	10
III	Collection of Poetry+ Letter Writing	3	04	10+15+20+15	20	10	10
IV	Drama +Computer and Hindi	3	04	10+15+20+15	20	10	10
					60+40= 100		

BBA/BCA/BSW/CCJ Etc.:

Ability Enhancement Compulsory Course (AECC)

Semester	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I&II)	Assignment	Attendance
I	Collection of Short Stories+ Grammar	3	04	10+15+20+15	20	10	10
II	Collection of Prose +Functional Hindi	3	04	10+15+20+15	20	10	10
III	Collection of Poetry	3	04	10+15+20+15	20	10	10
IV	Drama +Summarization, Expansion of Idea	3	04	10+15+20+15	20	10	10
					60+40= 100		

B. Sc.: Ability Enhancement Compulsory Course (AECC)

Semester	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I&II)	Assignment	Attendance
I	Collection of Short Stories + Functional Hindi	3	04	10+15+20+15	20	10	10
II	Collection of Poems + Translation	3	04	10+15+20+15	20	10	10
III	Collection of One Act Play + Letter Writing	3	04	10+15+20+15	20	10	10
IV	Novel +Mass Communication	3	04	10+15+20+15	20	10	10
					60+40= 100		

B.A.: Ability Enhancement Compulsory Course (AECC)

Semester	AECC	Credit	Hours	Theory Marks 60	Internal Assessment 40		
					Test (I&II)	Assignment	Attendance
I	Collection of Short Stories Idioms and Proverbs	3	04	10+15+20=15	20	10	10
II	Short Novel +Functional Hindi	3	04	10+15+20=15	20	10	10
III	Collection of Prose	3	04	10+15+20=15	20	10	10
IV	Block Poetry+ Functional Hindi	3	04	10+15+20=15	20	10	10
				60+40= 100			

Model Program Structure for UG Program

B.A. with One Major and One Minor / Without Practical Discipline Specific Core /
Discipline Elective / Open Elective

Hindi (DSC/DSE/OE)

Sem,	Discipline Core (BSC)	Credit	Hours	Discipline Elective (ESE) / Open Elective (OE)			Marks 100	
					Credit	Hours	Theory	LA
I	Collection of Short Stories + Terminology	3	04	Performing Arts and Chauhanlara Writing	3	04	60	40
	Hindi Grammar	3	04		3	04	60	40
II	Collection of Poems	3	04	Social Media and Hindi	3	04	60	40
	Functional Hindi	3	04		3	04	60	40

Exit Option with Certificate Course (50 Credits)

Sem	Discipline Core (DSC)	Credit	Hours	Discipline Elective (DSE) / Open Elective (OE)	Marks: 100			
					Credit	Hours	Theory	IA
III	History of Hindi Literature I Adikal Bhaktikal, Ritikal I	3	04	General Introduction of Hindi Literature	3	04	60	40
	Collection of One Act Play	3	04		3	04	60	40
IV	Literary Genre : History of Hindi Literature	3	04	Translation Skill	3	04	60	40
	Literary Essay	3	04		3	04	60	40

Exit Option with Diploma Course (100 credits) Choose anyone Discipline as Major, the other as the Minor



RANI CHANNAMMA UNIVERSITY,

BELAGAVI-591156, Karnataka-India

Dept. of Hindi

A

DRAFT

OF

COURSE STRUCTURE AND SYLLABUS

as per the Choice Based Credit System (CBCS)

designed in accordance with

Learning Outcomes-Based Curriculum

Framework

(LOCF)

For

UNDERGRADUATE DEGREE

Subject: Hindi

III & IV Semester

B.A., B. Com., B. Sc., BBA/BCA/BSW/CCJ

w.e.f.

Academic Year 2022-23 and onwards


Head
Dept. of Hindi
G.P.P. Arts, Commerce & V.V.S. Science
College, SINDAGI-586128.


Co-ordinator IQAC
G. P. Porwal Arts, Comm & V. V. Salimath
Science College, SINDAGI-586128. Belagavi


Principal,
G. P. Porwal Arts, Comm &
V. V. Salimath Sc. College
SINDAGI-586128. College Code: 5234



नई शिक्षा नीति के तहत हिंदी पाठ्यक्रम की संरचना

1	Prof. Manisha S. Nesarkar Dept. of Marathi Rani Channamma University, Belagavi	Chairperson
2	Smt. Jayashree Anchi Head, Dept. of Hindi Maratha Mandal College, Belagavi	Member
3	Dr. Shrikant B. Sangam Head, Dept. of Hindi CSB Arts, SMRP Science and GLR Commerce College, Ramdurg	Member

प्रस्तावना

इस पाठ्यक्रम की संरचना ऐसी की गई है कि इसके अध्ययन के पश्चात हिंदी साहित्य का विद्यार्थी यह जान सके कि साहित्य का विश्लेषण कैसे किया जाए, उसकी सराहना कैसे की जाए और दिए गए पाठ को पढ़ने की समझ किस प्रकार विकसित की जाए ताकि विद्यार्थी भाषा और साहित्य के उद्देश्य से शरीर भीति परिचित हो सके। यह उन्मुखता है कि ध्यान आधारित क्रेडिट प्रणाली में हिंदी भाषा और साहित्य के पाठ्यक्रम की विशिष्ट भूमिका है। परंपरागत पाठ्यक्रम में भाषा के रूप में हिंदी के अध्ययन के लिए 4 स्ट्रेन्स बनायी गयी हैं, जिससे विद्यार्थी अपने अनुशासन के अनुसार हिंदी भाषा का अध्ययन कर सकें। साथ ही ऑपन इलेक्टिव कोर्स का भी निर्माण हिंदी में रोजगार को ध्यान में रखकर किया गया है।

हिंदी के स्नातक पाठ्यक्रम का उद्देश्य निम्नांकित लक्ष्यों को प्राप्त करना है

- मूलभूत कौशल श्रवण, लेखन और अभिव्यक्ति का विकास करना।
- भाषा प्रदेशों का विकास करना।
- उच्चारण और लिपि का सही ज्ञान करना।
- विद्यार्थियों को संवेदनशील नागरिक बनाना।

- एक कुशल वक्ता का निर्माण करना।
- समाज और समुदाय के प्रति संवेदनशील दृष्टि का विकास करना।
- राष्ट्रीय चेतना का विकास करना।
- मानवीय मूल्यों के प्रति स्वस्थ दृष्टिकोण विकसित करना।
- विभिन्न साहित्यिक विधाओं की जानकारी देना।
- समाज के विभिन्न समुदायों के प्रति सहिष्णुता की भावना का विकास करना।
- साहित्यिक विमर्शों से परिचित करना।
- साहित्यिक पाठ और उनके संदर्भों में आलोचनात्मक प्रवृत्ति और कल्पनाशीलता का कौशल निर्माण करना।
- उच्च अध्ययन और अनुसंधान में बहुविधयक दृष्टिकोण स्थापित करना।
- विद्यार्थियों में समावेशी दृष्टिकोण, जिम्मेदार नागरिकता, नैतिक सोच और सामाजिक प्रतिबद्धता की भावना का निर्माण करना।
- रोजगार के लिए उपयुक्त व्यावसायिक कौशल में छात्रों को प्रशिक्षित करना।
- तकनीकी रूप से उन्नत विस्तार में विद्यार्थियों को इसकी चुनौतियों और अवसरों के लिए तैयार करना।
- व्यावहारिक और अनुभवआत्मक शिक्षण के लिए संकल्प करना।

यह पाठ्यक्रम विभिन्न स्तरों पर विद्यार्थियों की योग्यता का उन्नयन करने में सहायक हो सकेगा, साथ ही साथ यह सामाजिक अधिकताओं को साहित्य के माध्यम से समझने में भी निर्धारक के रूप में काम करेगा। साहित्य के साथ साथ भाषा की समझ भी विद्यार्थियों में विकसित होगी जिसकी सहायता से विद्यार्थी चिंतन, विश्लेषण और मूल्यांकन से संबंधित आधार बिंदुओं को जान सकेंगे। उनकी रोजगार पाने की योग्यता भी विकसित होगी ही साथ ही विभिन्न संदर्भों को जान सकेंगे।

परिणाम (Out Come)

इस पाठ्यक्रम के पठन पाठन की दिशा में निम्नलिखित परिणाम सामने आएंगे।

- हिंदी भाषा की आरंभिक स्तर से लेकर वर्तमान के बदलते रूपों की जानकारी प्राप्त की जा सकती है।
- भाषा के सैद्धान्तिक रूप के साथ साथ व्यावहारिक रूप भी जाना जा सकता है।
- उच्च शैक्षिक स्तर पर हिंदी भाषा किस प्रकार महत्वपूर्ण भूमिका निभा सकती, इससे संबंधित परिणाम प्राप्त हो सकते हैं।
- आभागत मूल्यों को व्यावहारिक रूप को भी जान सकते हैं।
- प्रयोजनमूलक हिंदी, पत्रकारिता, अनुवाद आदि के अद्यापन, अध्ययन के द्वारा व्यावसायिकता की क्षमता में बढ़ावा प्राप्त होगा।
- भारतीय साहित्य के अध्ययन से छात्रों के ज्ञान विस्तार तथा अभिव्यक्ति क्षमता में विकास होगा।

- साहित्य के माध्यम से सीढ़ीबोध, शैतिकता, सामाजिक समरसता, पर्यावरण संबंधी विषयों की समझ विकसित होगी।
- क्षमाशील और साहित्यिक क्षमता में लघन होंगे।
- गंभीर, समीक्षात्मक और स्वतंत्र चिंतन के लिए तैयार होंगे।
- अपने विचारों को व्यक्त करने तथा बहुआयामी व्याख्याओं को समझने के लिए तैयार होंगे।
- रचनात्मकता में अभिरुचि का निर्माण होगा।
- साहित्य इतिहास के अध्ययन से साहित्यकार के युगबोध का परिचय होगा।
- काव्यशास्त्रिय सिद्धान्तों के अध्ययन से विश्लेषण की क्षमता का निर्माण होगा।
- वर्तमान तत्वों की बतवरण में हिंदी के प्रयोग में दक्ष होंगे।
- अनुवाद, रिपोर्ट लेखन, कवित्व, कहानी आदि की प्रस्तुति का अनुभव प्राप्त करेंगे।

शिक्षण पद्धति (Pedagogy)

सीखने की प्रक्रिया में हिंदी भाषा की दक्षता को मजबूत बनाना होगा। विद्यार्थी हिंदी भाषा में ज्ञापन और वैश्विक माध्यम की निर्माण प्रक्रिया में सहायक बन सकें। अपनी भाषा में व्यवहार और निपुणता प्राप्त कर सकें। साहित्य की समझ विकसित कर सकें तथा आलोचनात्मक एवं साहित्यिक विवेक निमित्त किया जा सकें। इसलिए निम्नलिखित शिक्षण पद्धति का उपयोग किया जा सकता है।

- व्याख्यान
- संवाद एवं बहस
- सामूहिक चर्चा
- कक्षाओं में पठन-पाठन की पद्धति
- परिवेश का सृजन
- अभिनय पद्धति का प्रयोग
- क्षेत्रीय अथवा परियोजना कार्य
- अध्ययन से संबंधित पर्यटन
- प्रदर्शन कलाओं को वास्तविक रूप देना
- लिखित परीक्षा
- आंतरिक मूल्यांकन
- शोध सर्वेक्षण
- माह-विवाद

Work Etc.			
Total			40


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**RANI CHANNAMMA UNIVERSITY
VIDYASANGAMA, BELAGAVI**

NEP -2020

**UNDER GRADUATE SYLLABUS (UG)
III AND IV SEMISTER**



DEPT. OF HISOTRY AND ARCHAEOLOGY

2022-23


Head
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BA
Semester 3
DSC-5

Course Title: Political History of India(From Indus Culture upto 1206)	
Total contact Hours: 39-42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Model Syllabus Authors:	Summative Assessment Marks:

Course Pre-requisites(s): History and Culture of Political History of India

Course Outcomes (Cos):

At the end of the course the students should be able to:

(Write 3-7 course outcomes. Course outcomes are statements of observable student's actions that serve as evidence of knowledge, skills and values acquired in this course)

- Understand the history and culture of Political History of India region.
- Analyse the importance of causes for backwardness of this region.
- Understand the influence of political influence on the people and culture of this region.
- Understand the political, Social, Religious and Cultural history of the region.
- Appreciate the divergent cultural and communal harmony of this region.

Course Articulation Matrix: Mapping of Course Outcomes (OCs) with Program Outcomes (Pos 1-12).

Course Outcomes (Cos)/Program Outcomes (Pos)	DSC 1	DSC 2	DSC 3	DSC 4	DSC 5	DSC 6	OE 1	OE 2	SEC 1	SEC 2
Disciplinary knowledge	X	X	X	X	X	X	X	X		
Communication Skills	X	X	X	X	X	X	X	X	X	X

BA
Semester 3

DSC-5

POLITICAL HISTORY OF INDIA (From Indus Culture upto 1206)

The main objective of this syllabus is to provide a broad historic outline about the process of socio-political formations in the north and south India up to 1206 CE. Four modules introduce four main process of the Socio - Political formations: the emergence of the first urbanization in the north western part of early India during bronze age, the Socio - Political formations of Indo Gangetic plains in the Iron Age, the emergence of an empire under Mauryas in the north the chola - chera policy in the South and the formation of feudal cultures in the north and south.

UNIT -1 Towards Civilization -Harappan and Vedic Civilization	
Chapter-I	6
Pre-Harappan cultures: - extension of the Harappan culture- features of the Harappan sites: Harappa, Mohenjodaro, Lothal, Dholavira, Kalibangan	
Chapter-II	6
Debate on the decline of Indus civilization, Debate on Harappan script: AiravathamMahadevan - AskoParpola	
Chapter-III	6
Vedic literatures and Archaeological evidences - PGW, NBPW- early tribal pastoral and agrarian society in the Gangetic Plains, Early and later Vedic polity	
UNIT -2 : Socio-Political Formations in the Indo - Gangetic Plains Nature of state	
Chapter-IV	6
Formation of urban centers- Mahajanapadas, - Oligarchies, Monarchies and republics	
Chapter-V	6
Material setting of the formation of Jainism and Buddhism ,From Mahajanapadas to the empire- domination of Magadha- foundation of Mauryan polity,	
Chapter-VI	5

contrast events, explain events, discriminate, identify, arrange facts, detect the errors, interpret and extract.

Critical Thinking: The subject leads to develop the interest in the study of History and Culture of Political History Of India region. It also creates a critical thinking ability among the students. The student will be able to identify, analyse, collect, select, draw and verify the historical facts.

Practical Skills: The subject enables the students to develop practical skills which help in the study and understanding of historical facts. The student should be able to draw maps, charts, diagrams and prepare models, etc.

Learning Outcomes: This course enables students to explore various aspects of political, Culture and Heritage and also the cultural diversity of Political History Of India region in historical perspective that discusses numerous cultural practices that have evolved over centuries. The students will gather knowledge about the cultural heritage, cultural forms and cultural expressions performing arts, fairs and festivals.

Assessment: Weight age for assessment (in percentage)

Outlines for continuous assessment activities for C1 and C2

Formative Assessment			
Activities	C1	C2	Total Marks
Session Test	10 Marks	10	20
Sessions/Presentations/Activities	10 Marks		10
Case Study/Assignment/Field Work Etc.		10	10
Total			40

**BA III Semester
History of Bombay Karnataka
Regional History DSC-6**

Course Title: History of Bombay Karnataka	
Total contact Hours: 39-42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Model Syllabus Authors:	Summative Assessment Marks:

Course Pre-requisites(s): History and Culture of History of Bombay Karnataka.

Course Outcomes (Cos):

At the end of the course the students should be able to:

(Write 3-7 course outcomes. Course outcomes are statements of observable student's actions that serve as evidence of knowledge, skills and values acquired in this course)

- Understand the history and culture of History of Bombay Karnataka.
- Analyse the importance of causes for backwardness of this region.
- Understand the influence of political influence on the people and culture of this region.
- Understand the political, Social, Religious and Cultural history of the region.
- Appreciate the divergent cultural and communal harmony of this region.

Course Articulation Matrix: Mapping of Course Outcomes (OCs) with Program Outcomes (Pos 1-12).

Course Outcomes (Cos)/Program Outcomes (Pos)	DSC 1	DSC 2	DSC 3	DSC 4	DSC 5	DSC 6	OE 1	OE 2	SEC 1	SEC 2
Disciplinary knowledge	X	X	X	X	X	X	X	X		
Communication Skills	X	X	X	X	X	X	X	X	X	X

DSC -6
BA III Semester
History of Bombay Karnataka

Content of Course 1	39/42 Hrs
Unit - 1 Introduction - Contributions of Deccan Kingdoms	15/16
Chapter No.1 Geographical Features -Sources for the study of Bombay Karnataka.	02
Chapter No.2 Mourya Rule in Bombay Karnataka-Shatavahanas. Chalukyas of Badami : Pulakeshi II - Chalukyas of Kalayan; Vikramaditya VI – Their Cultural Contributions.	09
Chapter No.3 Bahamani Kingdom: Mahammad Gawan - Adil Shahis of Bijapur: Ibrahim Adilshahi II. Their Cultural Contributions	05
Unit - 2 Religions in Bombay Karnataka	10/11
Chapter No.4 Shaiva and Vaishnava, KalamukhaCults,Basaveshwara.	04
Chapter No.5 Jainism and Jain Centers in Bombay Karnataka : Badami,Pattadakallu, Aihole, Hallur, Terdal, Lakkundi, Belagavi, Halasi, Ammanagi	03
Chapter No.6 Bhuddism and Buddhist centers in Bombay Karnataka:Aihole, Badami, Banavasi, Koliwada and Mundgod.	03
Unit - 3 Towards Freedom Movement	15/16
Chapter No.7. Desagatis of Bombay Karnataka –Diwan BahaddurShivalangraoDeshamuk – Rani	08

Pedagogy:

Knowledge: The student should acquire knowledge of terms, concepts, political events, ideas, conventions, problems, trends, personalities, chronology and generalizations etc. related to the study of Kalyana Karnataka Region. The student should be able to recall, recognize, show and read the history of the region.

Understanding: The student should develop understanding of terms, facts, important events, trends, etc. related to the history and Culture of Kalyana Karnataka Region. The student is able to classify facts, illustrate events, compare and contrast events, explain events, discriminate, identify, arrange facts, detect the errors, interpret and extract.

Critical Thinking: The subject leads to develop the interest in the study of History and Culture of Kalyana Karnataka region. It also creates a critical thinking ability among the students. The student will be able to identify, analyse, collect, select, draw and verify the historical facts.

Practical Skills: The subject enables the students to develop practical skills which help in the study and understanding of historical facts. The student should be able to draw maps, charts, diagrams and prepare models, etc.

Learning Outcomes: This course enables students to explore various aspects of political, Culture and Heritage and also the cultural diversity of Kalyana Karnataka region in historical perspective that discusses numerous cultural practices that have evolved over centuries. The students will gather knowledge about the cultural heritage, cultural forms and cultural expressions performing arts, fairs and festivals.

Assessment: Weight age for assessment (in percentage)**Outlines for continuous assessment activities for C1 and C2**

Formative Assessment			
Activities	C1	C2	Total Marks
Session Test	10 Marks	10	20
Sessions/Presentations/Activities	10 Marks		10
Case Study/Assignment/Field Work Etc.		10	10
Total			40

Analytical Reasoning	X	X	X	X	X	X	X	X		
Cooperation and Team Work	X	X	X	X	X					
Reflective Thinking	X	X	X	X	X	X	X	X	X	X
Self-Motivated Learning	X	X	X	X	X	X	X	X	X	X
Diversity Management and Inclusive Approach	X	X	X	X	X	X	X	X	X	X
Moral and Ethical Awareness Reasoning	X	X	X	X	X	X	X	X	X	X
Lifelong Learning	X	X	X	X	X	X	X	X	X	X

Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark "X" the intersection cell if a course outcomes addresses a particular program outcome.

❖ Nasik Inscription	
CHAPTER-9 Practicals in Kannada Palaeography. ❖ Practical Training in taking estampages of stone and copper plate inscriptions by visiting the historical places.	04

REFERENCE BOOK

1. Bühler, G., Indian Palaeography, Indological Book House, N.Delhi, 1968
2. Pandey, R.B., Indian Palaeography, Motilal Banarsidas, Benaras, 1952
3. Dani, A.H., Indian Palaeography
4. Mahalingam, T.V., Early South Indian Palaeography, University of Madras, 1967
5. Sivaramamurthy, Indian Epigraphy and South Indian Scripts
6. Burnell, A.C., Elements of South Indian Palaeography
7. Mahalingam, T.V., Early South Indian Palaeography
8. Rajan, K., Kalvetiyai (Tamil), Mano Pathippagam, Thanjavur
9. Natana. Kasinathan, Kalleluttukalai, (Tamil)
10. Subramanian, T.N., South Indian Temple Inscriptions.

Pedagogy:

Knowledge: the student should acquire knowledge of terms, concepts, political events, ideas, conventions, problems, trends, personalities, chronology and generalizations etc. related to the study of Introduction to Epigraphy. The student should be able to recall, recognize, show and read the history of the medieval times.

Understanding: The student should develop understanding of terms, facts, important events, trends, etc., related to Introduction to Epigraphy. The student is able to classify facts, illustrate events, compare and contrast events, explain events, discriminate, identify, arrange facts, detect the errors, interpret and extract.

Critical Thinking: The subject leads to develop the interest in the study of Introduction to Epigraphy. It also creates a critical thinking ability among the students. The student will be able to identify, analyse, collect, select, draw and verify the historical facts and figures.

Course Outcomes (Cos):

At the end of the course the students should be able to:

(Write 3-7 course outcomes. Course outcomes are statements of observable student's actions that serve as evidence of knowledge, skills and values acquired in this course)

- Understand the Freedom Movement in Karnataka (1800-1947)
- Analyse the importance of causes for backwardness of this region.

Understand the influence of Freedom Movement in Karnataka (1800-1947)

- Understand the political, Social, Religious and Cultural history of the region.
- Appreciate the divergent cultural and communal harmony of this region.

Course Articulation Matrix: Mapping of Course Outcomes (OCs) with Program Outcomes (Pos 1-12).

Course Outcomes (Cos)/Program Outcomes (Pos)	DSC 1	DSC 2	DSC 3	DSC 4	DSC 5	DSC 6	OE 1	OE 2	SEC 1	SEC 2
Disciplinary knowledge	X	X	X	X	X	X	X	X		
Communication Skills	X	X	X	X	X	X	X	X	X	X
Critical Thinking	X	X	X	X	X	X	X	X	X	X
Problem Solving	X	X	X	X	X	X	X	X	X	X
Analytical Reasoning	X	X	X	X	X	X	X	X		
Cooperation and Team Work	X	X	X	X	X					
Reflective Thinking	X	X	X	X	X	X	X	X	X	X
Self-Motivated Learning	X	X	X	X	X	X	X	X	X	X
Diversity Management	X	X	X	X	X	X	X	X	X	X

BA
O.E III Semester
O.E-3: Freedom Movement in Karnataka (1800-1947)

Course 1		Course 2	
Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester
3	39 or 42	3	39 or 42

Content of Course 1		39/42 Hrs
Unit – 1 Early Uprisings in Karnataka		12/13
Chapter No.1 DhondyaWagh, Venkatadri Nayaka, KoppalaVeerappa, Deshmuks of Bidar.Shivalingaiah, Sindagi Revolt.		05
Chapter No.2 Rani Chennamma-SangolliRayanna-Nagar Revolt-Kodagu Revolt		04
Chapter No.3 1857 and After-Bedas of Halagali-Naragunda Babasaheb Revolt-Surapura Venkatappa Nayaka-Mundaragi Bheema Rao		04
Unit – 2 Nationalism in Karnataka		13/14
Chapter No.4 Nationalism-Causes for the Rise of Nationalism-Impact of Tilak-Chatusutras-Gandhi in Karnataka-Belguam Congress1924		05
Chapter No.5 Khadi Movement-Koijalagi Hanumantha Rao-HallikeriGudleppa-Tagaduru Ramachandra Rao		05
Chapter No.6 Harijana Movement-HarijanaSevaka Sangha-SardharVeeranna Gowda Patil-Nagamma Patil-Siddamati Mylar		04
Unit – 3 Gandhi Movements in Karnataka		14/15
Chapter No.7 Non-Cooperation Movement-Salt Sathyagraha-Ankola-No Tax Campaign in Uttar Karnataka-Forest Sathyagraha.		05
Chapter No.8 Genesis of Mysore Congress-ShivapuraDhwajaSathyagraha-VidurushwathuTragedy-Patel Mirza Pact-Quit India Movement-Islooru Tragedy.		05
Chapter No.9 Establishment of Responsible Government in Princely Mysore-Mysore ChaloSathyagraha-First Congress Ministry-A Brief Profile of Karnataka Freedom Fighter.		05

compare and contrast events, explain events, discriminate, identify, arrange facts, detect the errors, interpret and extract.

Critical Thinking: The subject leads to develop the interest in the study of History of Freedom Movement in Karnataka (1800-1947). It also creates a critical thinking ability among the students. The student will be able to identify, analyse, collect, select, draw and verify the historical facts and figures.

Practical Skills: The subject enables the students to develop practical skills which help in the study and understanding of historical facts. The student should be able to draw maps, charts, diagrams and prepare models, etc.

Learning Outcomes: This course enables students to explore various aspects of political, diplomatic relations of the rulers of medieval times in historical perspective that discusses numerous political practices that have evolved over centuries. The students will gather knowledge about the various dynasties, political diplomacy, results and impact wars and battles the people. It also helps the students to develop the knowledge and awareness about the political ideologies.

Assessment:

Weight age for assessment (in percentage)

Outlines for continuous assessment activities for C1 and C2

Formative Assessment			
Activities	C1	C2	Total Marks
Session Test	10 Marks	10	20
Sessions/Presentations/Activities	10 Marks		10
Case Study/Assignment/Field Work Etc.		10	10
Total			40

BA
Semester 4

Title of the Course: History of Medieval India	
Total contact Hours: 39-42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Model Syllabus Authors:	Summative Assessment Marks:

Course Pre-requisites(s): Political History Medieval India (from 1206 to 1761).

Course Outcomes (Cos):

At the end of the course the students should be able to:

(Write 3-7 course outcomes. Course outcomes are statements of observable student's actions that serve as evidence of knowledge, skills and values acquired in this course)

- Understand the Political History Medieval India (from 1206 to 1761). Analyse the importance of causes for backwardness of this region.
- Understand the influence of Political History Medieval India (from 1206 to 1761).
- Understand the political, Social, Religious and Cultural history of the region.
- Appreciate the divergent cultural and communal harmony of this region.

Course Articulation Matrix: Mapping of Course Outcomes (OCs) with Program Outcomes (Pos 1-12).

BA
Semester 4
DSC-7

Title of the Course: **History of Medieval India**

Course 1 (DSC-7)		Course 2	
Number of Theory Credits	Number of Lecture hours/Semester	Number of Theory Credits	Number of Lecture hours/Semester
3	39 or 42	3	39 or 42

Content of Course 1		39/42 Hours
Unit -I Interpreting Medieval Indian History		14
Chapter No. 1	Interpreting Medieval Indian History	2
Chapter No. 2	Debate on Indian Feudal System	6
Chapter No. 3	Interpretation of Peasant State and Society of Medieval India - North India & South India - Agrarian System of Mughal and Vijayanagara Period. Bhakti Movement - Kabir, Nanak, Meera Bai, Sri Chaithanya - Alvars, Nainars.	6
Unit -2 Political Structure of Medieval Northern India and Southern India		14
Chapter No. 4	Comparative study of Vijayanagara Polity, Delhi Sultanate and Mughals - process of Urbanization in Mughals and Vijayanagara period	6
Chapter No. 5	Nature of state in Vijayanagara Kingdom, Delhi Sultanate and Mughal dynasties	6
Chapter No. 6	Military Technology of Mughals and Vijayanagara dynasties - Development of Science & Technology in Medieval India	4
Unit -3 Minor Kingdoms of North India		14
Chapter No. 7	Rajaputs, GurjaraPratiharas, Palas, Paramaras	6
Chapter No. 8	Vijayanagaradynasy - Amaranayaka System - Creation of Wealth.	6
Chapter No. 9	The rise of the Marathas - Shivaji and his administration - AsthaPradhana System	4

Pedagogy:

Knowledge: the student should acquire knowledge of terms, concepts, political events, ideas, conventions, problems, trends, personalities, chronology and generalizations etc. related to the study of History of Medieval India. The student should be able to recall, recognize, show and read the history of the medieval times.

Understanding: The student should develop understanding of terms, facts, important events, trends, etc., related to medieval India. The student is able to classify facts, illustrate events, compare and contrast events, explain events, discriminate, identify, arrange facts, detect the errors, interpret and extract.

Critical Thinking: The subject leads to develop the interest in the study of medieval Indian history. It also creates a critical thinking ability among the students. The student will be able to identify, analyse, collect, select, draw and verify the historical facts and figures.

Practical Skills: The subject enables the students to develop practical skills which help in the study and understanding of historical facts. The student should be able to draw maps, charts, diagrams and prepare models, etc.

Learning Outcomes: This course enables students to explore various aspects of political, diplomatic relations of the rulers of medieval times in historical perspective that discusses numerous political practices that have evolved over centuries. The students will gather knowledge about the various dynasties, political diplomacy, results and impact wars and battles the people. It also helps the students to develop the knowledge and awareness about the political ideologies.

Assessment:**Weight age for assessment (in percentage)****Outlines for continuous assessment activities for C1 and C2**

Formative Assessment			
Activities	C1	C2	Total Marks
Session Test	10 Marks	10	20
Sessions/Presentations/Activities	10 Marks		10
Case Study/Assignment/Field Work Etc.		10	10

(Pos)										
Disciplinary knowledge	X	X	X	X	X	X	X	X		
Communication Skills	X	X	X	X	X	X	X	X	X	X
Critical Thinking	X	X	X	X	X	X	X	X	X	X
Problem Solving	X	X	X	X	X	X	X	X	X	X
Analytical Reasoning	X	X	X	X	X	X	X	X		
Cooperation and Team Work	X	X	X	X	X					
Reflective Thinking	X	X	X	X	X	X	X	X	X	X
Self-Motivated Learning	X	X	X	X	X	X	X	X	X	X
Diversity Management and Inclusive Approach	X	X	X	X	X	X	X	X	X	X
Moral and Ethical Awareness Reasoning	X	X	X	X	X	X	X	X	X	X
Lifelong Learning	X	X	X	X	X	X	X	X	X	X

CHAPTER-6 Short History of the Sanskrit literature: The Vedas, and Upanishads , Epics: Ramayana and Mahabharata - History of Buddhist and Jain Literature in Pali, Prakrit .	04
UNIT-III ART&ARCHITECTURE	
CHAPTER-7 Indian Art & Architecture: Gandhara School and Mathura School of Art: · Hindu Temple Architecture, Buddhist Architecture- Indian Painting Tradition: ancient painting at Ajantha,	04
CHAPTER-8 Performing Arts: Divisions of Indian classical music: Hindustani and Carnatic, ·Dances of India: Various Dance forms: Classical and Regional,	04
CHAPTER-9 Indian Culture in South East Asia	04

Books for Reference

1. Gore, M. S., Unity in Diversity: The Indian Experience in Nation-Building, Rawat Publication, Jaipur, 2002.
2. Kabir, Humayun N, National Information and Publications Ltd., Mumbai, 1946.
3. Malik, S. C., Understanding Indian Civilisation : A Framework of Enquiry, Indian Institute of Advanced Study, Simla, 1975.
4. Mukerji, D. P., Sociology of Indian Culture, Rawat Publications, Jaipur, 1948/1979.
5. Pandey, Govind Chandra, Foundations of Indian Culture, Books and Books, New Delhi, 1984.

Pedagogy:

Knowledge: The student should acquire knowledge of terms, concepts, political events, ideas, conventions, problems, trends, personalities, chronology and generalizations etc. related to the study of Cultural History of India (From Saraswati - Indus Culture to 1206 CE). The student should be able to recall, recognize, show and read the history of the region.

Understanding: The student should develop understanding of terms, facts, important events, trends, etc. related to the history of Cultural History of India (From Saraswati - Indus Culture to 1206 CE). The student is able to classify facts, illustrate events, compare and contrast events, explain events, discriminate, identify, arrange facts, detect the errors, interpret and extract.

Critical Thinking: The subject leads to develop the interest in the study of History of Cultural History of India (From Saraswati - Indus Culture to 1206 CE).

**BA - IV SEMESTER
OPEN ELECTIVE**

Course Title: Freedom Movement in India (1885-1947)	
Total contact Hours: 39-42	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 60
Model Syllabus Authors:	Summative Assessment Marks:

Course Pre-requisites(s): History of Freedom Movement in India (1885-1947).

Course Outcomes (Cos):

At the end of the course the students should be able to:

(Write 3-7 course outcomes. Course outcomes are statements of observable student's actions that serve as evidence of knowledge, skills and values acquired in this course)

- Understand the History of Freedom Movement in India (1885-1947). Analyse the importance of causes for backwardness of this region.
- Understand the influence of History of Freedom Movement in India (1885-1947).
- Understand the political, Social, Religious and Cultural history of the region.
- Appreciate the divergent cultural and communal harmony of this region.

Course Articulation Matrix: Mapping of Course Outcomes (OCs) with Program Outcomes (Pos 1-12).

Course Outcomes (Cos)/Program Outcomes	DSC 1	DSC 2	DSC 3	DSC 4	DSC 5	DSC 6	OE 1	OE 2	SEC 1	SEC 2

Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark "X" the intersection cell if a course outcomes addresses a particular program outcome.

BA
O.E IV Semester
O.E-4: Freedom Movement in India (1885-1947)

Course 1		Course 2	
Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester
3	39 or 42	3	39 or 42
Content of Course -1			39/42 Hrs
Unit – Indian Nationalism			12/14
Chapter No.1 Genises of Indian National Congress-Moderate-Objectives-Techniques-Partion of Bengal-Swadeshi Movement			05
Chapter No.2 Split of Congress-Extremists-Objectives-Techniques, Lalalajpat Ray-Balagandharanatha Tilak-Bipan Chandra Pal-Arabindo Ghosh			05
Chapter No.3 Revolutionary Movement-Bhagat Singh-Chandra Sheker Azad-Rajaguru, Sukh Dev, Revolutionary Women-Kumudini Mitra Busu – Madam Bhikaji Cama – Preethi Latha Waddedar			04
Unit – 2 1914 and After			10/12
Chapter No.4 First World War and Indian Nationalism			04
Chapter No.5 Home Rule Movement-Balagandharanatha Tilak and Anni Besant			03
Chapter No.6 Luknow Pact-1916-Rowlett Act-Jallianwala Bagh Massacre			04
Unit – 3 Gandhian Era			15/17
Chapter No.7 Early Experiments of Gandhi-Non Co-operation Movement-Constructive Programmes-Swaraj Party-Siman Commission			06
Chapter No.8 Lahore Congress-Salt Sathyagraha-Round Table Conference-Communal Award-Poona Pact-Subaschandra Bose-INA			06
Chapter No.9 Partion and Independence: Growth of Communalism Two Nation Theory-August offer-Crips Proposal-Quit India Movement-Cabinet Mission-Mount Batten Plan-1947 Indian Independence Act.			05

Books for Reference:

Practical Skills: The subject enables the students to develop practical skills which help in the study and understanding of historical facts. The student should be able to draw maps, charts, diagrams and prepare models, etc.

Learning Outcomes: This course enables students to explore various aspects of political, Culture and Heritage of Freedom Movement in India (1885-1947) in historical perspective that discusses numerous cultural practices that have evolved over centuries. The students will gather knowledge about the cultural heritage, cultural forms and cultural expressions performing arts, fairs and festivals.

Assessment: Weight age for assessment (in percentage)

Outlines for continuous assessment activities for C1 and C2

Formative Assessment			
Activities	C1	C2	Total Marks
Session Test	10 Marks	10	20
Sessions/Presentations/Activities	10 Marks		10
Case Study/Assignment/Field Work Etc.		10	10
Total			40

Course Outcomes (Cos)/Program Outcomes (Pos)	DSC 1	DSC 2	DSC 3	DSC 4	DSC 5	DSC 6	OE 1	OE 2	SEC 1	SEC 2
Disciplinary knowledge	X	X	X	X	X	X	X	X		
Communication Skills	X	X	X	X	X	X	X	X	X	X
Critical Thinking	X	X	X	X	X	X	X	X	X	X
Problem Solving	X	X	X	X	X	X	X	X	X	X
Analytical Reasoning	X	X	X	X	X	X	X	X		
Cooperation and Team Work	X	X	X	X	X					
Reflective Thinking	X	X	X	X	X	X	X	X	X	X
Self-Motivated Learning	X	X	X	X	X	X	X	X	X	X
Diversity Management and Inclusive Approach	X	X	X	X	X	X	X	X	X	X
Moral and Ethical Awareness Reasoning	X	X	X	X	X	X	X	X	X	X
Lifelong	X	X	X	X	X	X	X	X	X	X

Chapter-VI	3
New trends in Museums and Legislations concerning Museums.	
UNIT -3 : Management and Administration	
Chapter-VII	5
Museum Management and Administration: 1. Location and Surrounding of Museums (a.) Selection of site (b.) Surrounding (c.) Use of space, design (d.) Planning (e.) Construction of museum (f.) Special Problems (war, flood, fire & earthquake etc.).	
Chapter -VIII	3
Museum Conservation and Preservation. 1. General Principles of Conservation (a) Preventive measures (b.) Curative measures	
Chapter -IX	4
Classification of Museums based on the nature of collections, concepts of eco Museum, Personallia Museums, Children Museums, and Virtual Museums.	

Books for Reference

1. Dr. V. Jayaraj - Museology - Heritage Management - Seawaves Printers, Chennai - 86, 2005
2. M.L. Nigam - Fundamentals of Museology, Deva Publications, Hyderabad, 1985
3. Grace Morley - The Museum and its functions, Ed. Saifur Rahman dar, Lahore Museum, Lahore, 1981
4. Dr. V. Jayaraj - Handbook on Conservation in Museums Published by the Commissioner of Museums, Chennai, 1995
5. J. Smifa, J. Baxi and Vinod P. Dwivedi - Museum Storage, Modern Museum, V.P. Abhinav Publications, New Delhi, 1985
6. Agarwala. V.S. - Museum studies, PrithiviPrakashan, Varanashi, 1978
7. Grace Morley - Museum today, Lucknow, 1981

Pedagogy:

B.Sc VI Semester-Mathematics

Paper Code: MATDSEP 6.2A(Elective-III)

Paper Title: Practicals

Practical Hours: 3 Hrs / Week

Marks: Practicals-40+1A-10

Credits: 01

1. Verification of Cauchy – Euler differential equations.
2. Solution to the total and simultaneous differential equations and plot the solutions.
3. Verification of exactness of a differential equations.
4. Verification of linear partial differential equation of the form $Pp + Qq = R$.
5. Verifying first order non-linear partial differential equations (clairaut's form)
6. Verification of non-linear partial differential equations by Charpit's method.
7. Solutions to standard forms $f(p, q) = 0$, $f(p, q, z) = 0$, $f(x, p) = g(y, q)$.
8. Recurrence relation for Legendre's function.
9. Recurrence relation for Bessel's unction.

NOTE: Use the SciLab / MAXIMA Open – source Software to execute the practical problems.

SciLab: is an open-source software and it can be downloaded from <http://www.scilab.org/download>. Some materials for scilab can be found on <http://wiki.scilab.org/Tutorialsarchives>.

MAXIMA: is an Open source Computer Algebra System for solving typical calculus problems. The latest version is available on <http://maxim.sourceforge.net/documentation.html>


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B.Sc VI Semester-Mathematics

Paper Code: MATDSET6.2B(Elective-IV)	Paper Title: Topology and Laplace Transforms
Teaching Hours: 4 Hrs / Week	Marks: Theory-80+IA-20
Teaching Hours: 60Hrs	Credits: 03

UNIT-I

Topology-I: Open set, closed set, closure of a set, neighbourhood, limit points, derived sets, interior, exterior and boundary points of a set.

12 Hours

UNIT-II

Topology-II: Base & sub-base, subspace, separation axioms, T_1 & T_2 spaces (properties and examples).

12 Hours

UNIT-III

Laplace transforms-I: Definition, basic properties, Laplace transforms of some common functions, First shifting theorem, change of scale property.

12 Hours

UNIT-IV

Laplace transforms-II: Laplace transforms of periodic functions, Laplace transforms of derivatives and integrals, inverse Laplace transforms

12 Hours

UNIT-V

Laplace transforms-III: Heaviside function, Dirac-delta function, unit step function, convolution theorem and Laplace transforms method of solving differential equation of first and second order with constant coefficients.

12 Hours

REFERENCES:

1. Modern algebra and Topology- E.Sampathkumar and K.S.Amur
2. Topology – J.N.Sharma (Krishna Prakashan Meerut)
3. Topology by R.S.Agrawal
4. Laplace Transform Theory – M.G.Smith
5. A Text Book Of Mathematics- G.K.Raganath


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B.Sc VI Semester-Mathematics

Paper Code: MATSECT 6.3	Paper Title: Graph Theorymax
Teaching Hours: 2 Hrs / Week	Marks: Theory-40+IA-10
Teaching Hours: 30Hrs	Credits: 01

UNIT-I

Basic Concepts of Graphs: Introduction, graphs, finite and null graphs, loops, multi graphs, pseudo graph, simple graph, degree of a vertex, isolated and pendent vertices, connectedness and complete graphs, regular and complementary graphs. Minimum and maximum degree, $\sum \deg(v_i) = 2q$. The number of vertices of odd degree is even, Isomorphism, line and total graphs. (Definitions and examples only).

15 Hours

UNIT-II

Sub – Graphs: Sub – graphs, spanning and induced sub-graphs, walk, trail, path, cycle, shortest path problems, bipartite graph. Characterisation of bipartite graphs in terms of its cycle.

15 Hours

BOOKS FOR REFERENCE:

1. Graph theory – Frank Harary
2. Introduction to graph theory – Robin J Wilson, Longman
3. Graph theory and application – NarsingDeo


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RANI CHANNAMMA UNIVERSITY, BELAGAVI.
QUESTION PAPER PATTERN OF UG MATHEMATICS CBCS SYLLABUS
DSCIA TO DSCID AND DSEIA TO DSEID.

TIME: 3 HOURS.

MAX. MARKS: 80.

PART – A: ANSWER ANY TEN OUT OF TWELVE

10 X 2 = 20 MARKS

Q.NO.: 1. a, b, c, d, e, f, g, h, i, j, k, l.

PART – B: ANSWER ANY FOUR OUT OF SIX

4 X 5 = 20 MARKS

Q. NOS: 2, 3, 4, 5, 6, 7.

PART – C: ANSWER ANY FOUR FULL QUESTIONS OUT OF FIVE FULL

QUESTIONS. 4 X 10 = 40 MARKS

Q. NOS: 8 a, 8b, 9a, 9b, 10a, 10b, 11a, 11b, 12a, 12b.

NOTE:

1. PART – A: ATLEAST TWO QUESTIONS FROM EVERY UNIT.
2. PART – B: ATLEAST ONE QUESTION FROM EVERY UNIT.
3. PART – C: ONE FULL QUESTION FROM EVERY UNIT.

PATTERN FOR SEC 1 SEC 4

TIME: 2 HOURS.

MAX. MARKS: 40.

PART – A: ANSWER ANY FIVE OUT OF SEVEN 5 X 2 = 10 MARKS

Q. NO: 1a, b, c, d, e, f, g.

PART – B: ANSWER ANY SIX OUT OF EIGHT 6 X 5 = 30 MARKS

Q. NO: 2, 3, 4, 5, 6, 7, 8, 9.

NOTE:

1. PART – A: AT LEAST THREE QUESTIONS FROM EACH PART.
2. PART – B: FOUR QUESTIONS FROM EACH PART.


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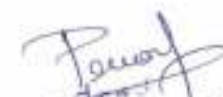
B.Sc VI Semester-Mathematics

Paper Code: MATDSEP 6.2A(Elective-III)	Paper Title: Practicals
Practical Hours: 3 Hrs / Week	Marks: Practicals-40+IA-10
	Credits: 01

1. Verification of Cauchy – Euler differential equations.
2. Solution to the total and simultaneous differential equations and plot the solutions.
3. Verification of exactness of a differential equations.
4. Verification of linear partial differential equation of the form $Pp + Qq = R$.
5. Verifying first order non-linear partial differential equations (clairaut's form)
6. Verification of non-linear partial differential equations by Charpit's method.
7. Solutions to standard forms $f(p, q) = 0$, $f(p, q, z) = 0$, $f(x, p) = g(y, q)$.
8. Recurrence relation for Legendre's function.
9. Recurrence relation for Bessel's unction.

NOTE: Use the SciLab / MAXIMA Open – source Software to execute the practical problems.
SciLab: is an open-source software and it can be downloaded from <http://www.scilab.org/download>. Some materials for scilab can be found on <http://wiki.scilab.org/Tutorialsarchives>.

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RANI CHANNAMMA UNIVERSITY, BELAGAVI

**PROGRAM /COURSE STRUCTURE AND
SYLLABUS**

**as per the Choice Based Credit System (CBCS)
designed in accordance with
Learning Outcomes-Based Curriculum
Framework (LOCF)
of National Education Policy (NEP) 2020
for**

**Bachelor of Science
(Mathematics)**

w.e.f.

Academic Year 2021-22 and onwards


Prof. H. S. H. H.
Dept. of Mathematics
P. P. Arts, Comm. & V. V. Salimath
College, SINDGI - 586128


Coordinator IQAC
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S.No.	Name	Designation
1.	Dr.Vijayalaxmi S. Shigehalli	Chairperson
2.	Dr. D. Radhakrishna	Member
3.	Dr.VithalYashavantPatil	Member
4.	Shri. S.K. Girigol	Co-opted Member
5.	Shri. Nagasuresh	Co-opted Member

Dr.Vijayalaxmi S. Shigehalli
 Dean of Science Faculty
 Rani Channamma University, Belagavi

Dr.Vijayalaxmi S. Shigehalli
 Chairperson BoS(UG)
 Department of Mathematics,
 RCU Belagavi

BOS COMMITTEE (NEP- MATHEMATICS)

B.Sc. MATHEMATICS (III & IV SEM) PROGRAM 2022-23

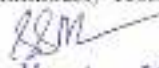
1	Prof. Vishwanath B. Awati, Department of Mathematics, RCU Belagavi	Chairman
2	Dr. I. M. Angadi, Govt First Grade College, Chikkodi	Member
3	Prof. (Smt) M. S. Shohani Sri Jagadamba Arts and Science First Grade College, Hiranalli tanda LT, Sindagi	Member

PREAMBLE

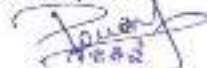
The subject wise expert committee to draft model curriculum contents in Mathematics constituted by the Department of Higher Education, Government of Karnataka, Bengaluru vide GO No. HD 260 UNE 2019 (PART-I) DATED 18.08.2021 is pleased to submit its partial report on the syllabus for the First Year (First & Second Semesters) B.A./B.Sc.(Basic/Honors) Mathematics and detailed Course Structure for B.A./B.Sc.(Honors) Mathematics and M.Sc. (One Year) Mathematics.

The committee discussed various models suggested by the Karnataka State Higher Education Council in its joint meetings with the Chairpersons of Board of Studies of all state universities in Karnataka and resolved to adopt Model IIA (Model Program Structure for the Bachelor of Arts (Basic/Hons.)/ Bachelor of Science(Basic/Hons.) for the subjects with practical's with Mathematics as Major/Minor.

To achieve the core objectives of the National Education Policy 2020 it is unanimously resolved to introduce computer based practical's for the Discipline


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programme enhances students overall development and also equip them with mathematical modelling ability, problem solving skills.

5. **Research related skills:** The completing this programme develop the capability of inquiring about appropriate questions relating to the Mathematical concepts in different areas of Mathematics.
6. **Information/digital Literacy:** The completion of this programme will enable the learner to use appropriate software's to solve system of algebraic equation and differential equations.
7. **Self-directed learning:** The student completing this program will develop an ability of working independently and to make an in-depth study of various notions of Mathematics.
8. **Moral and ethical awareness/reasoning:** The student completing this program will develop an ability to identify unethical behaviour such as fabrication, falsification or misinterpretation of data and adopting objectives, unbiased and truthful actions in all aspects of life in general and Mathematical studies in particular.
9. **Lifelong learning:** This programme provides self-directed learning and lifelong learning skills. This programme helps the learner to think independently and develop algorithms and computational skills for solving real word problems.
10. Ability to peruse advanced studies and research in pure and applied Mathematical sciences.


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SINDGI-586128.


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G. P. Pr
V. V
SINDGI

SEMESTER-II										
Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			IA	SEE	Total	L	T	P		
L3	21BSC2L3LK2	Kannada	40	60	100	4	-	-	3	2
	21BSC2L3FKL2	Functional Kannada								
L4	21BSC2L4EN2	English	40	60	100	4	-	-	3	2
	21BSC2L4HI2	Hindi								
	21BSC2L4SN2	Sanskrit								
	21BSC2L4TE2	Telugu								
	21BSC2L4UR2	Urdu								
DSC2	21BSC2C2MAT2L	Algebra - II and Calculus - II	40	60	100	4	-	-	4	2
	21BSC2C2MAT2P	Theory based Practical's on Algebra- II and Calculus - II	25	25	50	-	-	4	2	3
DSC2	Another Department Code	Another	40	60	100	4	-	-	4	2
		Department Course Title	25	25	50	-	-	4	2	3
AECC1	21BSC2AE1ES2	Environmental Studies	20	30	50	3	-	-	2	2
VBC3	21BSC2V3PE2	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC4	21BSC2V4NC1	NCC/NSS/R&R(S&G) / Cultural	25	-	25	-	-	2	1	-
OEC2	21BSC2C2MAT2-A	Mathematics - II	40	60	100	3	-	-	3	2
	21BSC2C2MAT2-B	Business Mathematics-II								
Total Marks					700	Semester Credits			25	

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SEMESTER-IV										
Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			IA	SE E	Total	L	T	P		
L7	21BSC4L7LK4	Kannada	40	60	100	4	-	-	3	2
	21BSC4L7LFK4	Functional Kannada								
L8	21BSC4L8EN4	English	40	60	100	4	-	-	3	2
	21BSC4L8HI4	Hindi								
	21BSC4L8SN4	Sanskrit								
	21BSC4L8TE4	Telugu								
	21BSC4L8UR4	Urdu								
DSC4	21BSC4C4MAT2L	Partial Differential Equations and Integral Transforms	40	60	100	4	-	-	4	2
	21BSC4C4MAT2P	Theory based Practical's on Partial Differential Equations and Integral Transforms	25	25	50	-	-	4	2	3
DSC4	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	3
AECC 2	21BSC4AE1ES2	Constitution of India	20	30	50	3	-	-	2	2
VBC7	21BSC4V5PE4	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC8	21BSC4V5NC3	NCC/NSS/R&R/S&G /Cultural	25	-	25	-	-	2	1	-
OEC4	21BSC4O4MAT4-A	Partial Differential Equations	40	60	100	4	-	-	3	2
	21BSC4O4MAT4-B	Mathematical Finance								
	21BSC4O4MAT4-C	Mathematics for Social Science								
Total Marks					700	Semester Credits			25	


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SEMESTER-VI										
Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			IA	SEE	Total	L	T	P		
Mathematics as Major Discipline										
DSC7	21BSC6C6MATMU1L	Linear Algebra	40	60	100	3	-	-	3	2
	21BSC6C6MATMU1P	Theory based Practical's on Linear Algebra	25	25	50	-	-	4	2	3
DSC8	21BSC6C6MATMU2L	Numerical Analysis	40	60	100	3	-	-	3	2
	21BSC6C6MATMU2P	Theory based Practical's on Numerical Analysis	25	25	50	-	-	4	2	3
DSC6	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	3
DSE	21BSC6DSEMAT-A	Analytical Geometry in 3D	40	60	100	3	-	-	3	2
	21BSC6DSEMAT-B	Number Theory								
	21BSC6DSEMAT-C	Special Functions								
	21BSC6DSEMAT-C	History of Bhārtiya Ganita								
INT1	21BSC6 INT1L	Internship	25	50	75	-	-	-	2	3
VBC1	21BSC6V5PE5	Physical Education-Sports	25	-	25	-	-	2	1	-
VBC2	21BSC6V6NC4	NCC/NSS/R & R(S&G) / Cultural	25	-	100	-	-	2	1	-
SEC4	21BSC6SE4MAT4	Professional Communication	25	25	50	1	-	2	2	2
Total Marks					700	Semester Credits			24	
Total Marks for BSC Program					4175	Total Credits for BSC Program			146	

[Signature]
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10. Internship is a designated activity that carries some credits involving more than **25 days** of working in an organization (either in same organization or outside) under the guidance of an identified mentor. Internship shall be an integral part of the curriculum.
11. **OEC: For non-mathematics students. Mathematics students have to opt for OEC from departments other than major and minor disciplines.**

Abbreviation Explanations:

1. AECC: Ability Enhancement Compulsory Course.
2. DSC: Discipline Specific Core Course.
3. DSEC: Discipline Specific Elective Course.
4. SEC: Skill Enhancement Course.
5. VBC: Value Based Course.
6. OEC: Open/Generic Elective Course
7. VC: Vocational Course.
8. IC: Internship Course
9. L1: Language One
10. L2: MIL.
11. L= Lecture; T= Tutorial; P= Practical.
12. MIL= Modern Indian Language; English or Hindi or Telugu or Sanskrit or Urdu

Program Coding:

1. Code 21: Year of Implementation
2. Code BSC: BSC Program under the faculty of Applied Science of the University
3. Code 1: First Semester of the Program, (2 to 6 represent higher semesters)
4. Code AE: AECC, (C for DSC, S for SEC, V for VBC and O for OEC)
5. Code 1: First "AECC" Course in semester, similarly in remaining semester for such other courses
6. Code LK: Language Kannada, similarly Language English, Language Hindi, Language Telugu, Language Sanskrit, & Language Urdu
7. Code 1: Course in that semester.
8. MAT: Mathematics


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Question Paper Pattern:
RANI CHANNAMMA UNIVERSITY
Department of Mathematics
I Semester B.Sc. (Mathematics)

- Sub: _____ Code: _____ Maximum Marks: 70
- a. Answer any Six Questions from Question 1
- b. Answer any Three Questions from Question 2,3,4 and 5

Q.No.1.	Answer any Five Questions (Two question from Each Unit) a. b. c. d. e. f. g. h.	2X6=12
Q.No.2.	(Should cover Entire Unit-I) a. b. c. d.	4X3=12
Q.No.3.	(Should cover Entire Unit-II) a. b. c. d.	4X3=12
Q.No.4.	(Should cover Entire Unit-III) a. b. c. d.	4X3=12
Q.No.5.	(Should cover Entire Unit-IV) a. b. c. d.	4X3=12


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Unit IV	Successive Differentiation: n th Derivatives of Standard functions e^{ax} , $(ax + b)^n$, $\log(ax + b)$, $\sin(ax + b)$, $\cos(ax + b)$, $e^{ax} \sin(bx + c)$, $e^{ax} \cos(bx + c)$. Leibnitz theorem and its applications, Tracing of curves (standard curves)	14
Recommended Learning Resources		
Print Resources	References: 1. University Algebra - N.S. Gopala Krishnan, New Age International (P) Limited 2. Theory of Matrices - B S Vatsa, New Age International Publishers. 3. Matrices - A R Vasista, Krishna PrakashanaMandir. 4. Differential Calculus - Shanti Narayan, S. Chand & Company, New Delhi. 5. Applications of Calculus, DebasishSengupta, Books and Allied (P) Ltd., 2019. 6. Calculus - Lipman Bers, Holt, Rinehart & Winston. 7. Calculus - S Narayanan & T. K. ManicavachogamPillay, S. ViswanathanPvt. Ltd., vol. I & II. 8. Schaum's Outline of Calculus - Frank Ayres and Elliott Mendelson, 5th ed. USA:Mc. Graw. 9. Text Book of B.Sc. Mathematics, G K Ranganath, S Chand & Company.	


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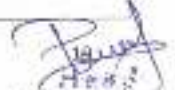

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OPEN-ELECTIVE SYLLABUS :**A: For students of Science stream who have not chosen Mathematics as one of Core Subjects**

of Core Subjects					
Year	I	Course Code: 21HSC101MAT1		Credits	03
Sem.	I	Course Title: Mathematics – I		Hours	42
Course Pre-requisites, if any		NA			
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA: 02 hrs.		
Course Outcomes	This course will enable the students to • Learn to solve system of linear equations. • Solve the system of homogeneous and non-homogeneous in linear equations by using the concept of rank of matrix, finding eigen values and eigen vectors. • Students will be familiar with the techniques of differentiation of function with real variables. • Identify and apply the intermediate value theorems and L' Hospital rule. • Learn to trace some standard curves.				
Unit No.	Course Content			Hours	
Unit I	Matrices: Recapitulation of Symmetric and Skew Symmetric matrices, Cayley- Hamilton theorem, inverse of matrices by Cayley-Hamilton theorem (Without Proof), Algebra of Matrices; Row and column reduction, Echelon form, Rank of a matrix; Inverse of a matrix by elementary operations; Solution of system of linear equations; Criteria for existence of non-trivial solutions of homogeneous system of linear equations. Solution of non-homogeneous system of linear equations, Eigen values and Eigen vectors of square matrices, real symmetric matrices and their properties, reduction of such matrices to diagonal form.			11	
Unit II	Differential Calculus: Limits, Continuity, Differentiability and properties. Intermediate value theorem, Rolle's Theorem, Lagrange's Mean Value theorem, Cauchy's Mean value theorem and examples. Taylor's theorem, Maclaurin's series, Indeterminate forms and examples.			14	
Unit III	Successive Differentiation: n th Derivatives of Standard functions e^{ax+b} , $(ax+b)^n$, $\log(ax+b)$, $\sin(ax+b)$, $\cos(ax+b)$, $e^{ax} \sin(bx+c)$, $e^{ax} \cos(bx+c)$, Leibnitz theorem and its applications, Tracing of curves (standard curves)			14	
Recommended Learning Resources					


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B: For Students of other than Science Stream

B: For Students of other than Science Stream				
Year	I	Course Code: 21BSC101MAT1	Credits	03
Sem.	I	Course Title: Business Mathematics – I	Hours	42
Course Pre-requisites, if any		NA		
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA: 02 hrs.	
Course Outcomes	This course will enable the students to • Translate the real word problems through appropriate mathematical modelling. • Explain the concepts and use equations, formulae and mathematical expression and relationship in a variety of context. • Finding the extreme values of functions. • Analyze and demonstrate the mathematical skill require in mathematically intensive areas in economics and business.			
Unit No.	Course Content			Hours
Unit I	Algebra – Set theory and simple applications of Venn Diagram, relations, functions, indices, logarithms, permutations and combinations. Examples on commercial mathematics.			14
Unit II	Matrices: Definition of a matrix; types of matrices; algebra of matrices. Properties of determinants; calculations of values of determinants upto third order; Adjoint of a matrix, elementary row and column operations; solution of a system of linear equations having unique solution and involving not more than three variables. Examples on commercial mathematics.			14
Unit III	Differential Calculus: Constant and variables, functions, Limits & continuity, Differentiability and Differentiation, partial differentiation, rates as a measure, maxima, minima, Partial Derivatives up to second order; Homogeneity of functions and Euler's Theorem; Total Differentials; Differentiation of implicit function with the help of total differentials. Maxima and Minima: cases of one variable involving second or higher order derivatives; Cases of two variables involving not more than one constraint			14
Recommended Learning Resources				
Print Resources	References: 1. Basic Mathematics, Alfred R.G.A, Macmillan, New Delhi, 2. Mathematics for Economies, Dooding, E.T., Schaum's Series, McGraw Hill, London. 3. Quantitative Techniques in Management, Vohra, N.D., Tata McGraw Hill, New Delhi. 4. Business Mathematics, Soni E.S., Pitambar Publishing House, Delhi			

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	underneath a surface of revolution using double integral Triple integral: Definition of triple integrals and evaluation-change of variables, volume as triple integral. Differentiation under the integral sign by Leibnitz rule.	
Recommended Learning Resources		
Print Resources	References 1. Topics in Algebra, I N Herstein, Wiley Eastern Ltd., New Delhi. 2. Higher algebra, Bernard & Child, Arihant, ISBN: 9360943199/ 9789360943199. 3. Modern Algebra, Sharma and Vasista, Krishna PrakashanMandir, Meerut, U.P. 4. Differential Calculus, Shanti Narayan, S. Chand & Company, New Delhi. 5. Integral Calculus, Shanti Narayan and P K Mittal, S. Chand and Co. Pvt. Ltd., 6. Schaum's Outline Series, Frank Ayres and Elliott Mendelson, 5th ed. USA: Mc. Graw Hill, 2008. 7. Mathematical Analysis, S C Malik, Wiley Eastern. 8. A Course in Abstract Algebra, Vijay K Khanna and S K Bhambri, Vikas Publications. 9. Text Book of B.Sc. Mathematics, G K Ranganath, S Chand & Company.	


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Evaluation Scheme for Lab Examination

Assessment Criteria		Marks
Program - 1 from Part A	Writing Program	03
	Execution of Program	07
Program -2 from Part B	Writing Program	03
	Execution of Program	07
Viva Voce		05
Total		25


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Date: 10/05/2022


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	double integral. Triple integral: Definition of triple integrals and evaluation-change of variables, volume as triple integral. Differentiation under the integral sign by Leibnitz rule.	
Recommended Learning Resources		
Print Resources	References: 1. Topics in Algebra, I N Herstein, 2nd Edition, Wiley Eastern Ltd., New Delhi. 2. Higher algebra, Bernard & Child, Arihant Pub. 3. Modern Algebra, Sharma and Vasishta, Krishna PrakashanMandir, Meerut, U.P. 4. A Course in Abstract Algebra, Vijay K Khanna and S K Bhambri, Vikas Publications. 5. Differential Calculus, Shanti Narayan, S. Chand & Company, New Delhi. 6. Integral Calculus, Shanti Narayan and P K Mittal, S. Chand and Co, Pvt. Ltd., 7. Schaum's Outline Series, Frank Ayres and Elliott Mendelson, 5th ed. USA: McGraw Hill., 2008. 8. Mathematical Analysis, S C Malik, Wiley Eastern. 9. Text Book of B.Sc. Mathematics, G K Ranganath, S Chand & Company.	

Pooja
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SEMESTER – III

Year	II	Course Code: 21BSC4C3MAT11.		Credits	04
Sem.	III	Course Title: Ordinary Differential Equations and Real Analysis – I		Hours	56
Course Pre-requisites, if any:		NA			
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA: 02 hrs.		
Course Outcomes		Course Learning Outcomes: This course will enable the students to: • Solve first-order non-linear differential equations and linear differential equations. • To model problems in nature using Ordinary Differential Equations. • Formulate differential equations for various mathematical models. • Apply these techniques to solve and analyze various mathematical models. • Understand the fundamental properties of the real numbers that lead to define sequence and series, the formal development of real analysis. • Learn the concept of Convergence and Divergence of a sequence. • Able to handle and understand limits and their use in sequences, series, differentiation, and integration. • Apply the ratio, root, alternating series, and limit comparison tests for convergence and absolute convergence of an infinite series.			
Unit No.	Course Content			Hours	
Unit I	Ordinary Differential Equations: Recapitulation of Differential Equations of first order and first degree, Exact Differential equations, Necessary and sufficient condition for the equations to be exact, Reducible to the exact differential equations, Differential equations of the first order and higher degree, Equations solvable for p, x, y, Clairaut's equation and singular solution, Orthogonal trajectories of Cartesian and polar curves.			14	
Unit II	Linear differential equations of the nth order with constant coefficients, Particular Integrals when the RHS is of the form e^{ax} , $\sin(ax+b)$, $\cos(ax+b)$, x^c , $e^{ax} V$ and $x V$ (with proofs), where V is a function of x, Cauchy – Euler equations, Legendre differential equations, Method of variation of parameters, Simultaneous differential equations with two and more than two variables, Condition for integrability of total differential equations $P dx + Q dy + R dz = 0$.			14	
Unit III	Real Analysis – I: Sequences: Sequences of real numbers, Bounded sequences, Limit of a sequence, convergent, divergent,			14	

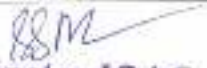

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Practicals

Year	II	Course Code: 21BSC3C3MAT1P		Credits	02	
Sem.	III	Course Title: Practicals on Ordinary Differential Equations and Real Analysis – I			Hours	56
Course Pre-requisites, if any		NA				
Formative Assessment Marks: 25		Summative Assessment Marks: 25	Duration of PSA: 02 hrs.			
Course Outcomes		Course Learning Outcomes: This course will enable the students to gain hands-on experience of • Free and Open Source software (FOSS) tools or computer programming. • Solving exact differential equations • Plotting orthogonal trajectories • Finding complementary function and particular integral of linear and homogeneous differential equations. • Acquire knowledge of applications of real analysis and differential equations. • Verification of convergence/divergence of different types of series				
		Course Content			Hours	
		Practicals/Lab Work to be performed in Computer Lab Use open-source software to execute the practical problems. (Maxima/ SciLab/MatLab /Mathematica/Python) 1. Fundamentals of Ordinary differential equations and Real analysis using FOSS 2. Verification of exactness of a differential equation 3. Plot orthogonal trajectories for Cartesian and polar curves 4. Solutions of differential equations that are solvable for x, y, p. 5. To find the singular solution by using Clairaut's form. 6. Finding the Complementary Function and Particular Integral of linear and homogeneous differential equations with constant coefficients and plot the solutions. 7. Finding the Particular Integral of differential equations up to second order and plot the solutions. 8. Solutions to the Total and Simultaneous differential equations and plot the solutions. 9. Test the convergence of sequences 10. Verification of exponential, logarithm and binomial series. 11. Verification of geometric series, p-series, Cauchy's Integral test, root test, and D'Alembert's Test 12. Examples on a series of positive terms. 13. Examples on alternating series using Leibnitz's theorem. 14. Finding the convergence of series using Cauchy's criterion for partial sums.			56	

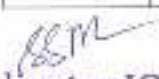

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Open Elective Course
(For students of other than Science stream)

Year	II	Course Code: 21BSC303MAT3-B		Credits	03
Sem.	III	Course Title: Quantitative Mathematics		Hours	42
Course Pre-requisites, if any		NA			
Formative Assessment Marks: 40		Summative Assessment Marks: 60		Duration of ESA: 02 hrs.	
Course Outcomes		Course Outcomes: This course will enable the students to: • Understand number system and fundamental operations • Understand the concept of linear quadratic and simultaneous equations and their applications in real life problems • Understand and solve the problems based on Age. • Solve Speed and Distance related problems.			
Unit No.		Course Content			Hours
Unit I		Number System Numbers, Operations on Numbers, Tests on Divisibility, HCF and LCM of numbers, Decimal Fractions, Simplification, Square roots and Cube roots - Problems thereon, Surds and Indices, Illustrations thereon.			14
Unit II		Theory of equations Linear equations, quadratic equations, simultaneous equations in two variables, simple application problems - Problems on Ages, Problems on conditional Age calculations, Present & Past age calculations.			14
Unit III		Quantitative Aptitude Percentage, Average, Average Speed-problems Time and distance, problems based on trains, problems on work and time, work and wages, clock and calendar.			14
Recommended Learning Resources					
Print Resources		References: 1. R.S. Aggarwal, <i>Quantitative Aptitude</i>, S. Chand and Company Limited, New Delhi-110 055. 2. Abhijit Gulia, <i>Quantitative Aptitude</i>, 5th Edition, Mc.Grawhill publications, 2014. 3. R.V. Praveen, <i>Quantitative Aptitude and Reasoning</i>, PHI publishers. 4. R.S. Aggarwal, <i>Objective Arithmetic</i>, S. Chand & Company Ltd. 5. Qazi Zameeruddin, Vijay K. Khanna, S.K. Bhambri, <i>Business Mathematics-II Edition</i> 6. S. K. Sharma and Gurmeet Kaur, <i>Business Mathematics</i>, Sultan Chand & Sons. 7. Hazarika Padmalochan, <i>A Text Book of Business mathematics for B.Com and BBA Course</i>, Chand Publication. 8. J.K. Thakral, <i>Business Mathematics</i>, abel book, 2020 First Edition. 9. N. G. Das and J. K. Das, <i>Business Mathematics and Statics</i>, Mc Graw Hill Education, 2017.			

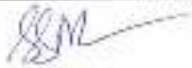

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SEMESTER – IV

Year	II	Course Code: 21BSC4C4MAT2L		Credits	04
Sem.	IV	Course Title: Partial Differential Equations and Integral Transforms		Hours	56
Course Pre-requisites, if any		NA			
Formative Assessment Marks: 40		Summative Assessment Marks: 60	Duration of ESA: 02 hrs.		
Course Outcomes		Course Learning Outcomes: This course will enable the students to • Solve the Partial Differential Equations of the first order and second order. • Formulate, classify and transform partial differential equations into canonical form. • Solve linear and non-linear partial differential equations using various methods; and apply these methods to solving some physical problems. • Able to take more courses on wave equation, heat equation, and Laplace equation. • Solve PDE by Laplace Transforms and Fourier Transforms			
Unit No.	Course Content			Hours	
Unit I	Basic concepts-Formation of a partial differential equations by elimination of arbitrary constants and functions. Solution of partial differential equations – Solution by Direct integration, Lagrange's linear equations of the form $Pp + Qq = R$. Standard types of first order non-linear partial differential equations. The integrals of the non-linear equation by Charpit's method.			14	
Unit II	Homogeneous linear partial differential equations with constant coefficients. Partial differential equations of the second order. Classification of second-order partial differential equations, canonical forms. Classification of second order linear equations as hyperbolic, parabolic, and elliptic. Solutions of the Heat equation, Laplace equation and Wave equation (using separation of variables).			14	
Unit III	Laplace Transforms: Definition, Basic Properties. Laplace transforms of some standard functions. Laplace transform of Periodic functions. Laplace transform of derivative and integral of a function. Heaviside function. Dirac-delta function. Convolution theorem. Inverse Laplace transforms and its properties. Solution of differential equations by using Laplace transforms.			14	
Unit IV	Fourier Series and Transforms: Periodic functions. Fourier Coefficients. Fourier series of functions with period 2π and period $2l$. Fourier series of even and odd functions. Half range Cosine and Sine series. Fourier Transforms - Finite Fourier Cosine and Sine transform.			14	


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Practicals

Year	II	Course Code: 21HSC4C4MAT2P		Credits	02
Sem.	IV	Course Title: Practical's on Partial Differential Equations and Integral Transforms		Hours	56
Course Pre-requisites, if any		NA			
Formative Assessment Marks: 25		Summative Assessment Marks: 25	Duration of ESA: 02 hrs.		
Course Outcomes		Course Learning Outcomes: This course will enable the students to • Learn Free and Open Source software (FOSS) tools or computer programming. • Solve problems on Partial Differential Equations and Integral Forms • To find Laplace transform of various functions • To find the Fourier Transform of periodic functions • To solve differential equations by using Integral transforms.			
		Course Content			Hours
		Practicals/Lab Work to be performed in Computer Lab Programs using Scilab/Maxima/Python: Elements of Partial differential equations and Integral transforms using FOSS. 1. Solutions of Linear Partial differential equations of type1 to type4 and Lagrange's method 2. Solutions of partial differential equation using Charpit's method. 3. Solutions of Second order homogenous partial differential equation with constant coefficients. 4. Solutions to the partial differential equations using separation of variables method (Heat/ Wave/Laplace). 5. Finding the Laplace transforms of some standard and periodic functions. 6. Finding the inverse Laplace transform of simple functions 7. Verification of Convolution Theorem. 8. To solve ordinary linear differential equation using Laplace transform. 9. To solve Integral equation using Laplace transform. 10. To find full range Fourier series of some simple functions with period 2π and $2L$. 11. To find Half range sine and cosine series of some simple functions and plotting them. 12. To find Cosine Fourier transforms. 13. To find Sine Fourier transforms.			56


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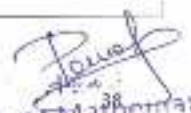

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Open Elective Course*(For students of other than science stream)*

Year	II	Course Code: 21HSC104MAT4-B		Credits	03
Sem.	IV	Course Title: Mathematical Finance		Hours	12
Course Pre-requisites, if any		NA			
Formative Assessment Marks: 40		Summative Assessment Marks: 60		Duration of ESA: 02 hrs.	
Course Outcomes	Course Learning Outcomes: This course will enable the students to • Understand how to compute profit and loss, discount and Banker's discount. • Understand the concept of Linear equations and inequalities and their use in the solving the Linear Programming Problems. • Formulation of Transportation Problem and its application in routing problem.				
Unit No.	Course Content			Hours	
Unit I	Commercial Arithmetic Bill of exchange, Bill of discounting procedure, Basic formula related to profit, loss, discount and brokerage, Successive discount, True discount, Banker's discount.			14	
Unit II	Linear Programming Linear equations and inequalities- Rectangular coordinates, straight line, parallel and intersecting lines and linear inequalities, Introduction to linear programming, Mathematical formulation of LPP, Solution of a LPP by graphical method, special cases in graphical method			14	
Unit III	Transportation problem Introduction, Formulation of Transportation problem, Initial basic feasible solution, Steps in solving a transportation problem, optimality check, special cases in Transportation problem. The Traveling salesman Problem (Routing Problem).			14	
Recommended Learning Resources					
Print Resources	Reference Books: 1. R S Aggarwal, Objective Arithmetic, S. Chand & Company Ltd. 2. Mizrahi and Sullivan, Mathematics for Business and Social Sciences an Application approach. 3. Qazi Zameeruddin, Vijay K Khanna, S K Bhambri, Business Mathematics- II Edition, Vikas Publishing House. 4. S. Kalavathy, Operation Research, Fourth edition, Vikas publication house Pvt. Ltd. 5. Sreenivasa Reddy M, Operations Research 2nd edition, Sanguine Technical publishers, Bangalore. 6. S. D. Sharma, Operation Research				


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BELAGAVI

THE COURSE STRUCTURE & SYLLABUS OF UNDER GRADUATE

BACHELOR OF SCIENCE

MATHEMATICS

1ST TO 6TH Semesters

w.e.f.

Academic Year 2020-21 and Onwards
Under

CHOICE BASED CREDIT SYSTEM (CBCS)


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CHOICE BASED CREDIT SYSTEM [CBCS]
B.Sc. Program with Mathematics Optional Subject

B.Sc.: Mathematics as one of the optional subject revised syllabus under CBCS (w.e.f. 2020-21 and onwards)								
Sem	Part	Paper Code	Title of Paper	Hours/ Week	Marks			Subject Credits
					IA	Exam	Total	
I	Part – 1 DSC	MATDSCT 1.1	Algebra-I and Calculus-I	4	20	80	100	3
		MATDSCP 1.1	Practicals-I	3	10	40	50	1
		Total : Hours / Credits		7			150	4
II	Part – 1 DSC	MATDSCT 2.1	Calculus-II and 3-Dimensional Geometry	4	20	80	100	3
		MATDSCP 2.1	Practicals-II	3	10	40	50	1
		Total : Hours / Credits		7			150	4

B.Sc.: Mathematics as one of the optional subject revised syllabus under CBCS (w.e.f. 2021-22 and onwards)								
Sem	Part	Paper Code	Title of Paper	Hours/ Week	Marks			Subject Credits
					IA	Exam	Total	
III	Part – 1 DSC	MATDSCT 3.1	Algebra-II, Real analysis and Differential Equations	4	20	80	100	3
		MATDSCP 3.1	Practicals-III	3	10	40	50	1
	Part – 2 SEC	MATSECT 3.2	Set Theory and Theory of Equations	2	10	40	50	2
		Total : Hours / Credits		9			200	6
IV	Part – 1 DSC	MATDSCT 4.1	Vector Calculus, Infinite Series and Deferencial Equations	4	20	80	100	3
		MATDSCP 4.1	Practicals-IV	3	10	40	50	1
	Part – 2 SEC	MATSECT 4.2	Fourier Transforms	2	10	40	50	2
		Total : Hours / Credits		9			200	6


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CHOICE BASED CREDIT SYSTEM [CBCS]

B.Sc.: Mathematics as one of the optional subject revised syllabus under CBCS (w.e.f. 2022-23 and onwards)								
Sem	Part	Paper Code	Title of Paper	Hours/ Week	Marks			Subject Credits
					IA	Exam	Total	
V	Part – 1 DSE	MATDSET 5.1	Real Analysis	4	20	80	100	3
		MATDSEP 5.1	Practicals-V	3	10	40	50	1
		MATDSET 5.2A (Elective-I)	Numerical Analysis and Difference Equations	4	20	80	100	3
		MATDSEP 5.2A (Elective-I)	Practicals	3	10	40	50	1
		MATDSET 5.2B (Elective-II)	Dynamics and Calculus of Variation	4	20	80	100	3
		MATDSEP 5.2B (Elective-II)	Practicals	3	10	40	50	1
	Part – 2 SEC	MATSECT 5.3	Number theory	2	10	40	50	2
		Total : Hours / Credits			16			350
Note: Students have to choose either Elective-I or Elective-II								
VI	Part – 1 DSE	MATDSET 6.1	Complex Analysis and Ring Theory	4	20	80	100	3
		MATDSEP 6.1	Practicals	3	10	40	50	1
		MATDSET 6.2A (Elective-III)	Differential Equations	4	20	80	100	3
		MATDSEP 6.2A (Elective-III)	Practicals	3	10	40	50	1
		MATDSET 6.2B (Elective-IV)	Topology and Laplace Transforms	4	20	80	100	3
		MATDSEP 6.2B (Elective-IV)	Practicals	3	10	40	50	1
	Part – 2 SEC	MATSECT 6.3	Graph Theory	2	10	40	50	2
		Total : Hours / Credits			17			350
Note: Students have to choose either Elective-III or Elective-IV								

B.Sc. Program with Mathematics Optional Subject

(T: Theory, P: Practical, CC/EA: Co-curricular/Extension Activities)

AECC: Ability Enhancement Compulsory Course, DSC: Discipline Specific Course

DSE: Discipline Specific Elective, SEC: Skill Enhancement Course)

Note: Duration of examinations is 03 Hrs for 80 Marks theory and 02 hrs for 40 marks theory. For practical's duration of examination is 03 Hrs.

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B.Sc I Semester-Mathematics

Paper Code: MATDSCT 1.1	Paper Title: Algebra-I and Calculus-I
Teaching Hours: 4 Hrs / Week	Marks: Theory-80+IA-20
Teaching Hours: 60Hrs	Credits: 03

UNIT-I

MATRICES AND DETERMINANTS

Recapitulation of Matrices, Symmetric matrices and Skew symmetric matrices, Elementary Transformations, Rank of a Matrix, Reduction to Normal forms, Inverse of matrix by elementary transformations, Solution of System of Linear equations.
Determinant: Expansion determinant of fourth order, Reciprocal determinants Symmetric and Skew-Symmetric determinants.

12 Hours.

UNIT-II

REAL NUMBER SYSTEM: Properties of real number system, Inequalities & absolute values, L.u.b, g.l.b and Archimedean properties of real numbers.

LIMITS AND CONTINUITY :Recapitulation of limits and continuity,Algebra of limits (with proofs),Properties of Continuous functions. Boundedness of continuous functions.

12 Hours

UNIT-III

Intermediate value theorem, Borel Covering theorem (statement only),Uniform continuity,L-Hospital's rule (statement only). Indeterminate forms of $0/0$, ∞/∞ , $0 \times \infty$, $\infty - \infty$, 0^0 , 1^∞ and ∞^0 .

12 Hours

UNIT-IV

HIGHER ORDER DERIVATIVES

The n^{th} derivative of $(ax + b)^n$, $1/(ax+b)$, $\log(ax+b)$, e^{ax+b} , $\sin(ax+b)$, $\cos(ax+b)$, $e^{ax} \sin(bx+c)$, $e^{ax} \cos(bx+c)$, Leibnitz's Rule for n^{th} derivative of a product.

12 Hours

UNIT-V

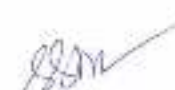
MEAN VALUE THEOREMS

Rolle's Theorem, Lagrange's Mean Value Theorem, Cauchy's Mean Value Theorem, Taylor's Theorem (with Schomilch and Rouché's form of remainder), Maclaurin's Series

12 Hours.

Reference Books:

1. Differential Calculus – Shantinarayan and Mittal
2. Mathematical Analysis-Shantinarayan
3. First Course In Real Analysis-M.k.Singal and Asha Rani
4. Text book of B.sc Mathematics- G.K. Ragenath
5. Matrices and determinants- M.L. Khanna


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B.Sc I Semester-Mathematics

Paper Code: MATDSCP 1.1

Practical Hours: 3 Hrs / Week

Paper Title: Practicals-I

Marks: Practical-40+IA-10

Credits: 01

- Introduction to SciLab / Maxima and commands related to the topic.
- 1. Computation of Sum, Difference and Product of two Matrices.
- 2. Computation of trace and transpose of matrices.
- 3. Computation of rank of matrix and row reduced echelon form.
- 4. Computation of inverse of a matrix using Cayley – Hamilton theorem.
- 5. Solution of system of homogeneous and Non-homogeneous equations.
- 6. Finding n^{th} derivative of e^x , trigonometric and hyperbolic functions.
- 7. Finding n^{th} derivative of algebraic functions and Logarithmic functions.
- 8. Finding n^{th} derivative of Finding n^{th} derivatives of $e^{ax}\sin(ax+b)$, $e^{ax}\cos(ax+b)$.
- 9. Examples on Rolle's theorem, Lagrange's and Cauchy's mean value theorem.
- 10. Taylor's and Mac Laurin's series expansion of a given function.

NOTE: Use the SciLab / MAXIMA Open – source Software to execute the practical problems.
SciLab: is an open-source software and it can be downloaded from <http://www.scilab.org/download>. Some materials for sciLab can be found on <http://wiki.scilab.org/Tutorialsarchives>.
MAXIMA: is an Open source Computer Algebra System for solving typical calculus problems.
The latest version is available on <http://maxim.sourceforge.net/documentation.html>



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B.Sc II Semester-Mathematics

Paper Code: MATDSCT 2.1 Dimensional	Paper Title: Calculus-II and 3- Geometry
Teaching Hours: 4 Hrs / Week	Marks: Theory-80+IA-20
Teaching Hours: 60Hrs	Credits: 03

UNIT-I

Polar coordinates of a point and polar curve. Angle between the radius vector and the tangent at a point on the curve. Angle of intersection of two curves. Polar and pedal equation of the curves. Polar sub-tangent and polar sub-normal.

12 hours

UNIT-II

Derivative of arc length, Curvature, Radius of curvature in Cartesian, Parametric, polar and pedal forms. Centre of curvature, Evolutes and Involutives.

12 hours

UNIT-III

Limits, continuity of functions of two variables. Partial derivatives, higher order partial derivatives, total derivatives and total differentials, Homogeneous functions, Euler's theorem on homogeneous functions.

12hours

UNIT-IV

Reduction formulae for integration of $\sin^m x$, $\cos^m x$, $\tan^m x$, $\cot^m x$, $\sec^m x$, $\operatorname{cosec}^m x$, $\sin^m x \cos^n x$, $x^m e^{ax}$, $x^n (\log x)^m$.

12 hours

UNIT-V

Sphere: Equation of a sphere, section of a sphere by a plane, Equation of a sphere through a circle, Equation of a sphere through two given points as ends of a diameter, Equation to a tangent plane of a sphere, Condition for tangency, Orthogonality of two spheres.

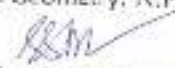
Cone: Equation of a cone, enveloping cone of a sphere, Right circular cone.

Cylinder: Equation of cylinder, enveloping cylinder of a sphere, Right circular cylinder.

12 hours

Books of reference:

1. Differential Calculus : Santinarayan and Dr. P.K. Mittal
2. Integral Calculus : Santinarayan and Dr. P.K. Mittal
3. Differential Calculus and Integral Calculus : N.P. Bali
4. Text Book of B.Sc Mathematics: G. K. Ranganath
5. Differential Calculus and Integral Calculus :P. N. Chatterji.
6. Analytical Solid geometry: Santinarayan and Dr. P.K. Mittal
7. Solid Geometry: N.P. Bali


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B.Sc II Semester-Mathematics

Paper Code: MATDSCP 2.1

Paper Title: Practicals – 2

Practical Hours: 3 Hrs / Week

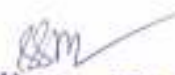
Marks: Practical-40+1A-10

Credits: 01

1. Writing simple program to generate: sequence of first 20 i) oddnos, ii) even nos, iii) prime nos. write a program to find smallest and largest nos from given two numbers.
2. Tracing of Cartesian curves.
3. Tracing of parametric curves.
4. Tracing of polar curves.
5. Tracing of curves in 3D.
6. Computation of arc length of Cartesian, Parametric curves
7. Computation of arc length of Polar form
8. Computation of volume of Cartesian and Parametric curves.
9. Computation of volume of Polar form
10. Evaluation of definite integrals and Reduction formulae.

NOTE: Use the SciLab / MAXIMA Open – source Software to execute the practical problems. SciLab: is an open-source software and it can be downloaded from <http://www.scilab.org/download>. Some materials for sciLab can be found on <http://wiki.scilab.org/Tutorialsarchives>. MAXIMA: is an Open source Computer Algebra System for solving typical calculus problems. The latest version is available on <http://maxim.sourceforge.net/documentation.html>


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B.Sc III Semester-Mathematics

Paper Code: MATDSCT3.1	Paper Title: Algebra-II, Real Analysis Differential Equations
Teaching Hours: 4 Hrs / Week	Marks: Theory-80+IA-20
Teaching Hours: 60Hrs	Credits: 03

UNIT-I

Real Analysis-I: Jacobians, Properties and examples, Lagrange's mean value theorem for functions of two variables, Taylor's (only statement) and Maclaurian's theorems for two variables, Maxima and Minima of two and three variables, Necessary and sufficient condition for extreme values of two variables.

12 Hours

UNIT-II

Sequences: Sequences, Limit of a sequences, Bounded and unbounded sequences, Convergent, Divergent, and Oscillatory sequences, Algebra of convergent sequences, Monotonic sequences, Theorems on monotonic sequences.

12 Hours

UNIT-III

Cauchy's sequences, Cauchy's first and second theorems on limits, Cauchy's criterion for convergence of sequences.

12 Hours

UNIT-IV

Group Theory-I: Groups, Abelian group, Standard examples of groups, Properties of groups, Semi groups, Subgroups and its properties, Permutation group, Cyclic groups & its properties, Cosets, Lagrange's theorem, Euler's theorem and Fermet's theorem,

12 Hours

UNIT-V

Differential equation-I: Bernoulli's form, Exact equations, Necessary and sufficient condition for the equation to be exact, solution of differential equation by finding a suitable integrating factor, Differential equations of the first order higher degree, Solvable for p, Solvable for x, Solvable for y, Clairaut's equations reducible to Clairaut's form.

12 Hours

Books for reference:

- (1) Shanti Narayana and P K Mittal: Textbook of Mathematical analysis.
- (2) Nisha Rani and Gupta: Textbook of real analysis.
- (3) N P Ball: Real analysis(Golden Series)
- (4) J N Sharma and A R Vasistha: Real analysis.
- (5) G. K. Ranganath: A text book of College Mathematics.
- (6) D. Murray: Introductory Course in Differential Equations.
- (7) Ayres F: Differential Equations.
- (8) Herstein J. N: Topics in Algebra.


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B.Sc III Semester-Mathematics

Paper Code: MATDSCP 3.1

Practical Hours: 3 Hrs / Week

Paper Title: Practicals – 3

Marks: Practical-40+IA-10

Credits: 01

1. Obtaining partial derivatives of some standard functions.
2. Verification of Euler's theorem, its extension and Jacobian.
3. Examining the convergence of sequences.
4. Example on $\lim_{n \rightarrow \infty} \left(1 + \frac{1}{n}\right)^n = e$.
5. Verification of binary operations
6. Computing the Identity and Inverse elements of a group.
7. Finding the order of elements of groups and the generators of a cyclic group.
8. Verification of Lagrange's theorem.
9. Solution of differential equations which are solvable for x, y, p.
10. To find the singular solutions by using Clairaut's form.

NOTE: Use the SciLab / MAXIMA Open – source Software to execute the practical problems.

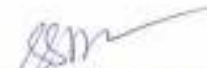
SciLab: Is an open-source software and it can be downloaded from

<http://www.scilab.org/download>. Some materials for sciLab can be found on

<http://wiki.scilab.org/Tutorialsarchives>.

MAXIMA: is an Open source Computer Algebra System for solving typical calculus problems.

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B.Sc III Semester-Mathematics

Paper Code: MATSECT 3.2	Paper Title: Set theory and Theory of Equations
Teaching Hours: 2 Hrs	Marks: Theory-40+IA-10
Teaching Hours: 30 Hours	Credits: 01

UNIT-I

SET THEORY

Equivalence relations, Partition of a Set, Arbitrary unions and intersections, De Morgan's laws, Countable and Uncountable sets.

15 Hours

UNIT-II

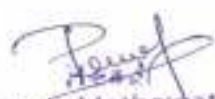
THEORY OF EQUATIONS :

Polynomial equation of nth degree in one variable, Euclidean algorithm, Remainder Theorem, Factor Theorem, Fundamental Theorem of Algebra, Relation between the roots and coefficient of general polynomial equation in one variable, Synthetic division. If one of the root of an equation $a_0x^n + a_1x^{n-1} + \dots + a_n$ has one of its rational root is p/q , then p is an exact divisor of a_n and q is an exact divisor of a_0 . Solution of cubic and Bi-quadratic equations.

15 Hours

Books for reference:

1. Modern Algebra- D.C. Pivate
2. Algebra -Vasistha


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B.Sc IV Semester-Mathematics

Paper Code: MATDSCT 4.1	Paper Title: Vector Calculus, Infinite Series Differential Equations
Teaching Hours: 4 Hrs / Week	Marks: Theory-80+1A-20
Teaching Hours: 60Hrs	Credits:03

UNIT-I

Dot and cross product of vectors, Ordinary derivatives of vectors, Continuity and differentiability of a vector function, Derivatives of sum, Dot product, Cross product and Triple product of vectors, Constant vector functions, Partial differentiation of vector functions, The vector differential operator del, The gradient of a scalar point function, The directional derivative of function, Properties of gradient of vector function, Divergence and Curl of a vector point function, Properties of divergence and curl, Solenoidal and irrotational vectors.

12 Hours

UNIT-II

Infinite series I: Infinite series and examples, Convergent, Divergent and Oscillatory series, Partial sum of series, Series of non-negative terms, Necessary and sufficient condition for convergence, Cauchy's general principle of convergence, Geometric series, The P-series (Harmonic), Comparison tests (different forms), D'Alembert's ratio test, Raabe's test,

12 Hours

UNIT-III

Infinite series II: Cauchy's integral test and Root test, Absolute convergence and conditional convergence of series, Alternating series, Leibnitz theorem, Uniform convergence,

12 Hours

UNIT-IV

Differential Equations II: Linear differential equation of n^{th} order with constant co-efficients, Particular integral when RHS is of the form e^{ax} , $\sin ax$, $\cos ax$, x^n , $e^{ax}v$ and xv where v is function of x .

12 Hours

UNIT-V

Differential Equations III: Homogeneous linear differential equation of n^{th} order and Equation reducible to the homogeneous linear form, higher order exact differential equations.

12 Hours

BOOKS FOR REFERENCE:

- (1) N. P. Ball: Differential equations.
- (2) Shanti Narayana: Mathematical Analysis.
- (3) G. K. Ranganath: Textbook of B.Sc. Mathematics.
- (4) N. Rudraiah and others: College Mathematics.
- (5) Murray R. Spiegel: VECTOR ANALYSIS.
- (6) Walter Rudin: Principles of Mathematical analysis.
- (7) N. P. Ball: Real Analysis.

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B.Sc IV Semester-Mathematics

Paper Code: MATDSCP 4.1
Practical Hours: 3 Hrs / Week

Paper Title: Practicals – 4
Marks: Practical-40+IA-10
Credits: 01

1. Verification of Homomorphism and Isomorphism of groups.
2. Verification of exponential series.
3. Verification of Logarithmic series.
4. Verification of Binomial series.
5. Examples on Cauchy's root test, Raabe's and Ratio test.
6. Examples on convergence of alternating series using Leibnitz's theorem.
7. Finding the C.F of linear differential equations with constant coefficients and plot the solutions.
8. Finding the C.F of homogeneous differential equations with constant coefficients and plot the solutions.
9. Finding the P.I of differential equations up to second order and plot the solutions.

NOTE: Use the SciLab / MAXIMA Open – source Software to execute the practical problems.

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<http://www.scilab.org/download>. Some materials for sciLab can be found on

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MAXIMA: is an Open source Computer Algebra System for solving typical calculus problems.

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B.Sc IV Semester-Mathematics

Paper Code: MATSEC 4.2

Teaching Hours: 02 Hrs / Week

Teaching Hours: 30Hrs

Paper Title: Fourier Transforms

Marks: Theory-40+IA-10

Credits: 01

UNIT-I

Fourier series: Periodic functions, Fourier series of functions of period 2π and $2l$, Fourier series of odd and even functions, half range sine and cosine series.

15 Hours

UNIT-II

Fourier transforms: Finite sine and Cosine transforms.

15 Hours

BOOKS FOR REFERENCE:

1. Shanti Narayana: Mathematical Analysis.
2. G. K. Ranganath: Textbook of B.Sc. Mathematics.
3. N. Rudraiah and others: College Mathematics.



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B.Sc V Semester-Mathematics

Paper Code: MATDSET 5.1

Teaching Hours: 4 Hrs / Week

Teaching Hours: 60Hrs

Paper Title: Real Analysis

Marks: Theory-80+IA-20

Credits: 03

UNIT-I

Riemann Integration I:- Partition of a set. The upper and lower sums. Necessary and sufficient conditions for integrability. Algebra of integrable functions (constant, sum, difference, product, quotient, and modulus)

12 Hours

UNIT – II

Riemann Integration II: Integrability of continuous functions, monotonic functions. Fundamental theorem of integral calculus. Change of variables, Integration by parts. The first and second mean value theorems (Bonnet & Weierstrass form) of integral calculus.

12 Hours

UNIT – III

Improper Integrals: Improper integrals of first and second kind. Comparison tests. Abel's test and Dirichlet's test.

12 Hours

UNIT – IV

Beta and Gamma functions: Properties. Relation between Beta & Gamma functions and their convergence and Duplication formula.

12 Hours

UNIT-V

Differentiation under Integral sign (Leibnitz theorem), Double and triple integrals, areas and volumes (Cartesian coordinates).

12 Hours

BOOKS FOR REFERENCE:

- 1) Fundamental Real analysis – S. L. Gupta & Nisha Rani
- 2) Mathematical Analysis—Shantinirayan and P. K. Mittal
- 3) A Course of Mathematical Analysis—M D Raisinghania
- 4) Real Analysis- N.P.Bali
- 5) A text book of B.Sc. Mathematics- G.K.Ranganath


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B.Sc V Semester-Mathematics

Paper Code: MAT05ET 5.2A(Elective-I)	Paper Title: Numerical Analysis and Equations
Teaching Hours: 4 Hrs / Week	Marks: Theory-80+IA-20
Teaching Hours: 60Hrs	Credits: 03

UNIT-I

Solutions of Algebraic and transcendental equations: Bisection method, Iteration method, Newton-Raphson method.

Numerical solutions of non-homogeneous systems of linear algebraic equations by Jacobi Iteration Method and Gauss-Seidel Iteration method.

12 Hours

UNIT-II

Finite Differences: Operators Δ (Delta), ∇ (Del) & E (Shift). Definitions and their properties. n^{th} order difference of a polynomial.

Interpolation: Newton Gregory forward and backward difference interpolation formulae and examples. Lagrange's interpolation formula and examples.

12 Hours

UNIT-III

Numerical differentiation: Forward and backward difference formulae. Computation of first and second ordered derivatives.

Numerical integration: General Quadrature formula, Trapezoidal rule, Simpson 1/3rd and 3/8th rules.

12 Hours

UNIT-IV

Solution of initial value problems: by ordinary linear first order differential equations by Taylor's series, Euler's, Picard and Runge- Kutta method of order four.

12 Hours

UNIT-V

Difference equations: Basic definitions, order and degree, solution, formation of first and second linear difference equations with constant coefficients (simple examples).

12 Hours

BOOKS FOR REFERENCE:

- 1) Introductory method of numerical analysis- S.S.Shastri
- 2) Calculus of finite differences – H.C.Saxena
- 3) Numerical methods for scientific and engineering computation- M.K.Jain, S.R.K.Iyengar, & R.K.Jain (New Age International Publications)
- 4) Text Book of Mathematics-G.K.Ranganath
- 5) Numerical Analysis by G. Balaguruswamy

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B.Sc V Semester-Mathematics

Paper Code: MATDSET5.2B(Elective-III)	Paper Title: Dynamics and Calculus Variation.
Teaching Hours: 4 Hrs / Week	Marks: Theory-80+IA-20
Teaching Hours: 60Hrs	Credits: 03

UNIT-I

Kinematics: Velocity and acceleration of a particle along a plane curve, Radial and Transverse components of velocity and acceleration, Tangential and normal components of velocity and acceleration,

12 Hours

UNIT-II

Central Orbits: Motion of a particle under a central force. Use of Polar and Pedal co-ordinates. Apse, Apsidal distance and Apsidal angle

12 Hours

UNIT-III

Motion of a projectile: in a non resting medium under gravity.
Elastic Impact: Direct and Oblique impact of elastic bodies.

12 Hours

UNIT- IV

Calculus of Variations: Variation of a function $f = f(x,y,z)$, and functional, Variational problems Fundamental theorem of calculus of variation, Euler's equation.

12 Hours

UNIT- V

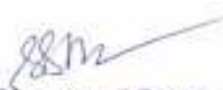
Calculus of Variations-(contd.): Geodesic on plane, on sphere, Brachistochrone problem, minimum surface of revolution, Isoperimetric problems.

12 Hours

BOOKS FOR REFERENCE:

- 1) Dynamics – M.Ray
- 2) Dynamics – P.N.Chatterji
- 3) Text Book of Mathematics-G.K.Raganathi
- 4) Higher Engineering Mathematics by B. S.Grewal


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B.Sc V Semester-Mathematics

Paper Code: MATDSEP 5.1

Practical Hours: 3 Hrs / Week

Paper Title: Practicals

Marks: Practical-40+IA-10

Credits: 01

1. Verification of lower and upper Riemann sums.
2. Verification of Riemann integrals.
3. Verification of continuous functions.
4. Evaluation of $\Gamma(n)$ for n is integer.
5. Evaluation of $\Gamma(n)$ for n is non-integer.
6. Evaluation of $\beta(m, n)$ for any m and $n > 0$.
7. Verification of given integral for its convergence.
8. Evaluation of double integral with constant limits over the region when the integrand is unity.
9. Evaluation of double integral with variable limits over the region when the integrand is unity.
10. Evaluation of triple integral with constant limits over the region when the integrand is unity.

NOTE: Use the SciLab / MAXIMA Open – source Software to execute the practical problems.

SciLab: is an open-source software and it can be downloaded from

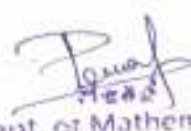
<http://www.scilab.org/download>. Some materials for sciLab can be found on

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B.Sc V Semester-Mathematics

Paper Code: MATDSEP 5.2A(Elective-II)

Practical Hours: 3 Hrs / Week

Paper Title: Practical

Marks: Practical-40+IA-10

Credits: 02

1. Finding roots of an equation by Bisection method.
2. Finding roots of an equation by Newton – Raphson method.
3. Solution of system of equations by Jacobi iteration method.
4. Solution of system of equations by Gauss - Seidel method.
5. Interpolation using Newton – Gregory forward and backward interpolation formula.
6. Interpolation using Lagrange's interpolation formula.
7. Numerical integration by Trapezoidal rule.
8. Numerical integration by Simpson's $(1/3)^{th}$ and $(3/8)^{th}$ rule.
9. Solution of initial value problem by modified Euler's method.
10. Solution of initial value problem by Runge – Kutta second and fourth order methods.

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B.Sc V Semester-Mathematics

Paper Code: MATSECT 5.3	Paper Title: Number Theory
Teaching Hours: 2 Hrs / Week	Marks: Theory-40+IA-10
Teaching Hours: 30Hrs	Credits: 01

UNIT-I

Number theory I: Divisibility of numbers and properties, division algorithm, properties of prime and composite numbers. Congruences and its properties, Fundamental theorem of arithmetic.

15 Hours

UNIT-II

Number theory II: Bracket function, properties, Euler's function, Fermat, Euler and Wilson's theorems.

15 Hours

BOOKS FOR REFERENCE:

1. Theory of Numbers Prakash Om (Golden series)
2. Higher Algebra- Bernard and Child


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B.Sc VI Semester-Mathematics

Paper Code: MATDSET 6.1	Paper Title: Complex Analysis and Ring Theory
Teaching Hours: 4 Hrs / Week	Marks: Theory-80+IA-20
Teaching Hours: 60Hrs	Credits: 03

UNIT-I

Complex Analysis: Analytic function, Cauchy-Riemann equations, Harmonic function, Harmonic conjugate, Construction of analytic function using Milne-Thomson's method.

12 Hours

UNIT-II

Complex Integration: Cauchy's Theorem, Morera's Theorem, Cauchy's Integral formula, Cauchy's Integral formula for derivatives, Cauchy's inequality, Liouville's Theorem.

12 Hours

UNIT-III

Taylor's and Laurent's series, zeroes and singularities of analytic functions, Calculus of Residues.

12 Hours

UNIT-IV

Residue Theorem, Jordan's lemma and Contour Integration.

12 Hours

UNIT-V

Rings and Integral domains: Rings, Properties of rings, subrings, ideals, principle and maximal ideals in a commutative ring, quotient rings, homomorphism and isomorphism, and integral domains.

12 Hours

BOOKS FOR REFERENCE :

1. Theory of functions of a Complex variables- Shanti narayan and Mittal.
2. Complex Variables – B.S Tyagi
3. Complex Variables – J.N Sharma
4. Modern Algebra by A.R.Vasistha
5. Rings and Modules by C.S.Musli
6. A Text book of B.Sc. Mathematics by Dr. S.S. Bhusanoormath and others


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B.Sc VI Semester-Mathematics

Paper Code: MATDSET 6.2A(Elective-III)	Paper Title: Differential Equations
Teaching Hours: 4 Hrs / Week	Marks: Theory-80+1A-20
Teaching Hours: 60Hrs	Credits: 03

UNIT-I

Differential Equations: Simultaneous differential equations with two and three variables, Total differential equation, Conditions of integrability and its solutions.

12 Hours

UNIT-II

Series Solutions of Ordinary Differential Equations: Basic definitions, Power series, ordinary and regular singular points, Power series solutions of ODEs, Frobenius method.

12 Hours

UNIT-III

Legendre equation and functions: Solutions of Legendre's equations in series, Legendre's functions- first and second kind, Rodrigue's formula, Orthogonal properties, Legendre's polynomial, recurrence formulae.

12 Hours

UNIT-IV

Partial differential equations of 1st order: formation of partial differential equation by eliminating arbitrary constants and functions, Lagrange's linear partial differential equation $Pp + Qq = R$ and its solution, Non-linear differential equations of standard forms I, II, III and IV.

12 Hours

UNIT-V

- Non-linear partial differential equations: Charpit's method.
- Linear partial differential equations with constant coefficients.

12 Hours

BOOKS FOR REFERENCE:

- Differential equations – D.A.Murray
- Differential equations – Bhudev Sharma
- Differential equations – J.N.Sharma and R.K.Gupta (Krishna PrakashanMandir Meerut)
- Text book of Mathematics – G.K.Ranganath
- Higher Engineering Mathematics by B. S.Grewal


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B.Sc VI Semester-Mathematics

Paper Code: MATDSEP 6.1	Paper Title: Practical
Practical Hours: 3 Hrs / Week	Marks: Practicals -40+IA-10
	Credits: 01

1. Tracing of circles and straight lines.
2. Construction of analytic function when real part of $f(z)$ is given.
3. Construction of analytic function when imaginary part of $f(z)$ is given.
4. Construction of analytic function by Milne – Thomson method.
5. Verification of real and imaginary parts of analytic function being harmonic.
6. Evaluation of contour integral by Cauchy's Integral formula and plot the solutions.
7. Evaluation of complex integrals when the point lie outside the contour and plot the solution.
8. Computation of residues with simple poles.
9. Computation of residues when the pole is order $m > 1$.
10. Evaluation of contour integral by using Cauchy Residue theorem.

NOTE: Use the Scilab / MAXIMA Open – source Software to execute the practical problems.

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quality factor, voltage magnification). Comparison between Series resonance & parallel resonance. De Sauty's Bridge. Problems 13 hrs.

Unit IV

Electrical Instrument: Ballistic Galvanometer; Theory of Ballistic Galvanometer (Derivation for current and Charge). Constants of Ballistic Galvanometer and their relationship. Condition for moving coil galvanometer to be ballistic. Determination of self-inductance (L) by Rayleigh's method. Theory of Earth inductor. Measurement of B_H , B_V and angle of dip at a place. CRO block diagram. Use of CRO in the measurement of Voltage, Frequency and Phase. Problems

Dielectrics: Types of dielectrics (polar and non-polar molecules). Electric dipole moment (p), electric polarization (P), Gauss law in dielectrics. Derivation for Relation between D, E and P. Derivation for relation between dielectric constant and electric susceptibility. Boundary conditions for E & D. Problems 13 hrs

Laboratory Experiments:

NOTE: Minimum of Eight experiments has to be performed

Course Code: 21BSC2C2PHY2P

Course Title: Practical-II

Formative Assessment
Marks:25

Summative Assessment
Marks:25

Duration of ESA: 4 hrs.

1. Thevenin's & Norton's theorems (Wheatstone Br)
2. High resistance by leaky method
3. Time constant of RC cir by charging and discharge method.
4. Calibration of Ammeter using Helmholtz Galvanometer
5. Constants of Ballistic Galvanometer
6. LCR series / parallel resonance circuit
7. De Sauty's AC bridge
8. Self-Inductance by Rayleigh's method
9. Use of CRO to find volt frequency and phase.
10. L & C by Equal Voltage Method
11. Black Box- Identify & Measure R, L & C.
12. Anderson's Bridge to determine the self-induct

DEPARTMENT OF PHYSICS
PHYSICS SYLLABUS 2021-22 (Odd and Even semesters)
B.Sc. I sem NEP 21-22 (First time Introduced)

Unit I- The Portion to be Covered

Conservation Laws: Law of conservation of linear momentum.

DEPARTMENT OF PHYSICS
PHYSICS SYLLABUS 2021-22
B.Sc. I sem NEP 21-22 (First time Introduced)

Course Code: 21BSCIC1PHYIL

Mechanics & Properties of Matter

Centre of mass and expression for position vector, velocity, acceleration and force of centre of mass. Distinction between laboratory frame of reference and centre of mass frame of reference. Concept of elastic collision and inelastic collisions. Derivation of final velocities in case of elastic collision in (i) laboratory frame of reference (ii) centre of mass frame of reference. Derivation of final velocities in case of inelastic collision in (i) laboratory frame of reference (ii) centre of mass frame of reference. Conservation of linear momentum in case of variable mass. Principle of rocket and derivation for equation of motion for single stage rocket. Necessity of multi stage rocket. Basics of angular momentum and torque, relation between angular momentum and torque. Law of conservation of angular momentum with examples. Concept of work and power. Law of conservation of energy with examples. Work energy theorem. Simple harmonic oscillations of light spiral spring. Problems 13 hrs

Unit. II

Gravitation: Newton's law of Gravitation (statement). Expressions for escape velocity and orbital velocity. Kepler's laws of planetary motion. Derivation for Kepler's 2nd and 3rd law. Concept of Satellite, derivation for binding energy of satellite, Artificial Satellite: Geostationary satellite and polar orbit satellite with different types of orbits (qualitative). Concept of weightlessness. Basic ideas of G.P.S. and NAVIC. Problems

Rigid Body Dynamics: Moment of Inertia. Radius of Gyration. Statements of theorem of parallel axis and theorem of perpendicular axis. Derivation of expressions for moment of inertia for (i) rectangular lamina (ii) thin uniform rod and (iii) circular disc. Theory of compound pendulum and bar pendulum. Theory of flywheel and its applications. Problems 13 hrs

Unit. III

Elasticity: Definition of Stress-strain, Hooke's law. Types of elastic constants, modulus of elasticity and derivation of expression for relation between elastic constants, Poisson's ratio, expression for Poisson's


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ratio in terms of elastic constants. Work done in stretching and twisting wire. Theory of torsional pendulum, determination of rigidity modulus and time period. Bending moments. Theory of cantilever, Determination of Young's modulus by bending of beam supported at its ends and loaded at middle. Problems 13 hrs

Unit. IV

Surface tension : Definition of surface tension, Angle of contact, Surface energy, relation between surface tension and surface energy, pressure difference across curved surface. Excess of pressure inside spherical liquid drop, Capillary rise, derivation of expression for rise of liquid in a capillary tube, Determination of surface tension by Quinke's method. Effect of temperature, impurity on surface tension. Problems

Viscosity : Streamline flow, turbulent flow, equation of continuity, determination of coefficient of Viscosity by Poissulle's method, Stoke's law with derivation and expression for terminal velocity. Effect of temperature on viscosity. Problems 13 hrs

List of Experiments to be performed in the Laboratory Note: Minimum EIGHT experiments have to be carried out.	
1.	Determination of g using bar pendulum (L versus T and L versus LT^2 graphs).
2.	Determination of moment of inertia of a FlyWheel.
3.	Determination of rigidity modulus using a torsional pendulum.
4.	Modulus of rigidity of a rod-Static torsion method.
5.	Determination of elastic constants of a wire by Searle's method.
6.	Young's modulus by Koenig's method.
7.	Viscosity by Stoke's method.
8.	Verification of Hook's law.
9.	Determination of surface tension of a liquid and the interfacial tension between two liquids using drop weight method.
10.	Study of motion of a spring and to calculate Spring constant, g and unknown mass.
11.	Determination of Young's modulus of a bar by the single cantilever method.
12.	Determination of Young's modulus of a bar by uniform bending method.
13.	Radius of capillary tube by mercury pellet method.
14.	Verification of parallel and perpendicular axis theorems.

B.Sc. III sem CBCS 21-22

B.Sc. (Physics) III Semester CBCS 21-22

PHYSICS-T301: THERMAL PHYSICS AND STATISTICAL MECHANICS

(Credits: Theory-04, Practicals-02) Total No of hours=50

UNIT – I

- **LAWS OF THERMODYNAMICS:** Thermodynamic Description of system: Zeroth Law of thermodynamics and temperature, First law and internal energy, conversion of heat into work, Various Thermodynamical Processes, Second law & Entropy, Carnot's cycle & theorem, Entropy changes in reversible & irreversible processes, Entropy-temperature diagrams and Third law of thermodynamics, Maxwell's thermodynamical relations & applications-Clausius Clapeyron Equation. 12 hours

UNIT – II

- **THERMODYNAMIC POTENTIAL:** Enthalpy, Gibbs, Helmholtz and Internal Energy functions, Expression for $(C_P - C_V)$ & C_P/C_V , Joule-Thompson Effect, Porous plug experiment, Thermodynamical analysis of Joule-Thompson Effect, Joule-Thompson Effect for a perfect gas. 06 hours
- **STATISTICAL MECHANICS:** Phase space, Macro state and Microstate, Entropy and Thermodynamic probability, Maxwell-Boltzmann law - distribution of velocity - Quantum statistics - Fermi-Dirac distribution law - electron gas - Bose-Einstein distribution law - photon gas - comparison of three statistics. 07 hours

UNIT III

- **KINETIC THEORY OF GASES:** Postulates of Kinetic theory of gases, Derivation of Maxwell's law of distribution of velocities, most probable, average and RMS velocities, Mean free path, Clausius expression for mean free path.
- **Transport Phenomenon:** Viscosity, Thermal Conductivity and Diffusion of gases, Brownian motion, Einstein equation for the translational Brownian motion. 07 hours

- **THEORY OF RADIATION:** Blackbody radiation, Stefan's law, Energy distribution in the spectrum of black body, Wien's displacement law, Rayleigh Jeans Law and Planck's law, Deduce Wien's law, Rayleigh Jeans law from Planck's law, 06 hours

Unit IV

THERMO-ELECTRICITY: Seebeck Effect and its explanation, Variation emf with temperature, Neutral Temperature and Temperature of inversion, Thermo-electric Series, Laws of Thermo-Electric effects, Peltier's Effect-explanation, Peltier's Coefficients and thermodynamics of Peltier's Effect, Thomson Effect explanation, Thomson Coefficient.

Derivation of the relation $\Delta = dE/dT$, $\sigma = \sigma_b - T d^2E/dT^2$ Thermo -Electric (Tait) diagrams, its applications to determine,

1. Total emf,
2. Peltier emf,
3. Thomson emf
4. Neutral temperature and
5. Temperature of inversion, 10+2= 12 hrs

Practical Paper Code: PHYDSCP3.1

Paper Title: Practical III

Teaching Hours: 3 Hrs / Week **Marks:** Th-40+IA-10 **Credits :** 1

- 1 Viscosity by Stokes Method
- 2 Surface tension by Jaegers method
- 3 Helmholtz Resonator
- 4 Velocity of sound through wire (sonometer)
- 5 Characteristics of Loud speaker
- 6 Thermal conductivity by Lee's method
- 7 Verification of Newton's law of cooling
- 8 Specific heat by cooling.
- 9 Verification of Stefan's law of radiation.
- 10 Characteristics of microphone
- 11 Lissajous figures using CRO
- 12 Thermo-Electric Circuit to find Seebeck Effect
- 13 Thermal Behavior of Bulb Filament.
- 14 Calibration of thermistor for temperature measurement.
- 15 Calibration of thermocouple for temperature measurement.

- Note :** 1. Experiments are of three hours duration.
2. Minimum of eight experiments to be performed.

III- Semester B.Sc. (Physics) Skill Enhancement Course

Paper Code: PHYSECT3.2

Paper Title: Weather Forecasting

Teaching Hours: 2Hrs / Week **Marks:** Th-40+IA-10 **TOTAL HOURS :**30 **Credits :**2 *The aim of this course is not just to impart theoretical knowledge to the students but to enable them to develop an awareness and understanding regarding the causes and effects of different weather phenomenon and basic forecasting techniques*

Unit I Introduction to atmosphere: Elementary idea of atmosphere: physical structure and composition; compositional layering of the atmosphere; variation of pressure and temperature with height; air temperature; requirements to measure air temperature; temperature sensors: types; atmospheric pressure: its measurement; cyclones and anticyclones: its characteristics. **Measuring the weather:** Wind; forces acting to produce wind; wind speed direction: units, its direction; measuring wind speed and direction; humidity, clouds and rainfall, radiation: absorption, emission and scattering in atmosphere; radiation laws. **Weather systems:** Global wind systems; air masses and fronts: classifications; jet streams; local thunderstorms; tropical cyclones: classification; tornadoes; hurricanes. **15 Hours**

Unit II Climate and Climate Change: Climate: its classification; causes of climate change; global warming and its outcomes; air pollution; aerosols, ozone depletion, acid rain, environmental issues related to climate. **Basics of weather forecasting:** Weather forecasting: analysis and its historical background; need of measuring weather; types of weather forecasting; weather forecasting methods; criteria of choosing weather station; basics of choosing site and exposure; satellites observations in weather forecasting; weather maps; uncertainty and predictability; probability forecasts. **15 Hours**

Unit III Demonstrations and Experiments: 1. Study of synoptic charts & weather reports, working principle of weather station. 2. Processing and analysis of weather data; (a) To calculate the sunniest time of the year. (b) To study the variation of rainfall amount and intensity by wind direction. (c) To observe the sunniest/driest day of the week. (d) To examine the maximum and minimum temperature throughout the year. (e) To evaluate the relative humidity of the day. (f) To examine the rainfall amount month wise. 3. Exercises in chart reading: Plotting of constant pressure charts, surfaces charts, upper wind charts and its analysis. 4. Formats and elements in different types of weather forecasts/ warning (both aviation and non aviation)

B.Sc. V sem Optional 2021-22

Teaching Hours: 4 Hrs / Week

Marks: Th-80+1A-20

1. PHYSICS (OPTIONAL)

WITH EFFECT FROM 2019-20 ONWARDS

Paper I

Physics 5.1: CLASSICAL MECHANICS, ELECTRONICS& RELATIVITY (TOTAL HOURS: 50)
17BSCPHYT51

UNIT I

CLASSICAL MECHANICS

Constraints: Types with example, Degrees of Freedom, Configuration Space, Principle of Virtual Work, Generalized Co-ordinates, Virtual displacement, Velocity, Force, Kinetic and Potential Energies (derivations) . D'Alembert's Principle, Lagrange's equation of motion from D'Alembert's Principle, Applications of Lagrange's equation of Motion.

a. Motion of a Single Particle in Cartesian Co-ordinates.

b. Simple pendulum.

Problems

(8+2= 10 Hrs.)

UNIT II

Reduction of two body problem to equivalent one body problem. Expression for the total energy, equation of orbit (equivalent of single body) and Classification of Orbits. Kepler's Laws of Planetary Motion and their derivation from Lagranges equation of motion.

Nano Physics: Length scales, Variation of physical properties from bulk to thin films to nanomaterials. - confinement of electron energy states in 0D, 1D, 2D and 3D systems (qualitative treatment) ; Surface, size, shape and assembly effects..

Graphene and fullerene. Chemical Routes for Synthesis of Nanomaterials, Solvothermal and Sol-gel synthesis).

Problems

(8 +2 = 10Hrs.)

UNIT III

RELATIVITY

Michelson – Morley Experiment. Postulates of Special Theory of Relativity.

Lorentz Transformations equations (Derivation). Relativity of Length and Time. Law of Addition of Velocities. Variation of Mass with Velocity. Mass Energy Relation.

Problems

(8+2=10 Hours)

UNIT IV

ANALOG ELECTRONICS

Network theorems:

Current and voltage sources, Superposition theorem, Thevinin's and Norton's Theorem. Maximum power transfer Theorem (Derivation for all theorems).

Power supply

Unregulated bridge rectifier (efficiency, ripple factor, PIV, TUF and Voltage

regulation-qualitatively.) Filters: capacitor filter, LC filter, section filter(study of wave forms qualitatively) Zener diode : characteristics parameter, Explanation of Zener Breakdown, Zener diode used as voltage regulator using unregulated DC voltage bridge rectifier.

Problems

(8 +2 = 10 Hrs.)

UNIT V

Transistor:

h-parameters of a transistor and their determination using CE configuration.

Transistor as CE amplifier with frequency response. Types of feedback, transfer gain with feedback (derivation). Oscillators:-Transistor as an oscillator, comparison between amplifier and oscillator, Classification of oscillators-damped and un-damped oscillators, oscillatory circuit, frequency of oscillatory current, essentials of a feedback LC oscillator. Hartely and Phase shift oscillators.

FET-Types, characteristics and parameters. FET as a common source amplifier (Qualitative).

Problems

(8+2 =10 Hrs.)

PHYSICS 5.2: LAB – V

LIST OF EXPERIMENTS

1. Thevenin's & Norton's Theorem(Ladder Network).
2. h-parameters of a transistor using DC source.
3. Power supply using bridge rectifier (internal resistance and voltage regulation)
4. Power supply using bridge rectifier with Pi- section filters (internal resistance and voltage regulation)
5. Zener diode as voltage regulator using bridge rectifier power supply.
6. Transistor as CE amplifier.
7. Phase –shift oscillator using transistor.
8. Hartley oscillator using transistor.
9. FET-static characteristics and parameters.
10. FET-as common sources amplifier.

NOTE:

1. Experiments are of Four hours duration.
2. Minimum of Eight experiments to be performed.

B.Sc. V Semester 2021-22

PHYSICS (Optional)

Paper II

Physics 5.3: QUANTUM MECHANICS AND SPECTROSCOPY (Total Hours : 50)
17BSCPHYT53

UNIT I

QUANTUM MECHANICS:

Compton effect-(qualitative), Devisson and Germer Experiment, de-Broglie Hypothesis, G. P. Thomson experiment, Uncertainty principle Statement, Illustration by Gamma ray Microscope.

LASERS:

Stimulated Absorption and Emission, Einstein A and B coefficients, Conditions for

LASER action, Gas LASER He – Ne, Diode LASER, Characters and applications of LASER.
Problems (4+5+1=10 Hrs.)

UNIT II

WAVE MECHANICS: Time independent Schrodinger's wave equation (derivation) Physical significance of wave function, Derivation of expression for energy of a particle in a box, Eigen function and Eigen values. Linear harmonic oscillator with energy expression (derivation). Concept of zero point energy and degeneracy.

Problems (8+2 = 10Hrs.)

UNIT III

ATOMIC SPECTRA

Vector atom model- electron spin and quantization and quantum numbers. Stern Gerlach experiments. Coupling scheme for single valence and two valence systems. Magnetic field effect on light. Magnetic moment of electron due to orbital motion.

Larmor precession. Normal Zeeman effect, explanation of experimental setup. Quantum theory of normal Zeeman effect. Energy level diagram for sodium D lines. Anomalous Zeeman effect (qualitative). Landé's g -factor. Energy level diagram for Sodium D lines. Problems (8+2= 10 Hrs.)

UNIT IV

MOLECULAR SPECTRA AND LASERS

Spectra of diatomic molecules:

Nature of Molecular spectrum, Different types of energies of a molecule, Diatomic molecule as a Rigid Rotator. Derivation of expression for Rotational Energy of a Diatomic molecule. Application of Molecular spectra, Energy of a Diatomic molecule as a non rigid rotator (Qualitative).

RAMAN EFFECT:

Rayleigh scattering and Raman Scattering. Experimental set up for Raman effect. Raman Spectrum, Explanation of Raman effect on the basis of quantum theory. Applications of Raman Effect.

Problems (8 + 2 =10 Hrs.)

UNIT V

MATHEMATICAL PHYSICS

LEGENDRE FUNCTIONS:

Legendre polynomials , Rodrigue's formula , generating functions and recursion relations , Orthogonality and normalization, associated Legendre functions , spherical harmonics

BESSEL FUNCTIONS:

Bessel functions of the first kind, recursion relations, Orthogonality. Hermite functions , Hermite polynomials , generating functions , recursion relations , orthogonality.

Problems (8+2 = 10Hrs.)

PHYSICS 5.4: LAB – V

LIST OF EXPERIMENTS

1. Planck's constant by photo cell
2. Construction of multirange voltmeter.
3. Construction of multirange ammeter

4. Photoconductive cell
5. Astable multivibrator using transistor
6. Characteristics of G.M counter,
7. Low pass filter,
8. High pass filter,
9. Ionization potential of xenon or mercury.
10. Photovoltaic cell.

NOTE:

1. Experiments are of Four Hours duration
2. Minimum of Eight Experiments to be performed

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V. Salimath Sc. College
P. G. Centre, SINDGI
Coordinator IQAC
G. P. PORWAL ARTS, COMM
V. SALIMATH Sc. College,
SINDGI-586128.

B.Sc. II sem NEP 21-22 (First time introduced)

Course Code:21BSC2C2PHY21. Electricity & Magnetism

Unit. I

Vector Analysis: Scalar and Vector Products. Gradient of scalar and its physical significance. Divergence of vector and its physical significance. Curl of vector and its physical significance. Vector integration; line, surface & volume integrals of a vector field. Gauss Divergence theorem & Stokes theorem (statement). Problems

Maxwell's Electromagnetic Theory: Derivation of Maxwell's equations in differential form. Mention of Maxwell's equations in integral form and their physical significances. Derivation for general plane wave equation in free space. Transverse nature of radiation. Derivation of Poynting's theorem. Problems 11 hrs

Unit. II

DC Circuit Analysis: Voltage and current sources. Kirchhoff's current and voltage laws. Derivation of Thevenin's Theorem. Derivation of Norton's Theorem. Derivation of Superposition Theorem. Derivation of Maximum Power Transfer Theorem. Problems

Transient Circuits: Theory of growth and decay of current in RL circuit. Theory of charging and discharging of capacitor in RC circuit. Time constants of RL and RC circuits. Measurement of high resistance by leakage method. Problems 13 hrs

Unit. III

Magneto statics: Statement of Biot Savart's law. Derive an expression for Magnetic field at a point (i) due to a straight conductor carrying current (ii) along the axis of the circular coil carrying current (iii) along the axis of solenoid. Principle, construction and theory of Helmholtz Galvanometer. Problems

Alternating Current: Definitions of average, peak and rms values of AC. AC circuits containing LR, CR and their responses (using j operator). Expressions for impedance, current & phase angle in series LCR circuit using j operator. Expressions for admittance and condition for resonance in parallel LCR circuit using j operator. Concept of Series resonance & parallel resonance (sharpness, half power frequency,

OPEN-ELECTIVE SYLLABUS:

Year	I	Course Code: 21BSC202Z002	Credits	03
		Course Title: Parasitology		
Sem	II		Hours	42
Unit No.	Course Content			Hours
Unit I	1. General Concepts • Introduction, Parasites, parasitoids, host, zoonosis • Origin and evolution of parasites • Basic concept of Parasitism, symbiosis, phoresis, commensalism and mutualism • Host-parasite interactions and adaptations • Life cycle of human parasites • Occurrence, mode of infection and prophylaxis 2. Parasitic Platyhelminthes Study of morphology, life cycle, pathogenicity, prophylaxis and control measures of • <i>Fasciolopsis buski</i> • <i>Schistosoma haematobium</i> • <i>Taenia solium</i> • <i>Hymenolepis nana</i> 3. Parasitic Protists Study of morphology, life cycle, pathogenicity, prophylaxis and control measures of • <i>Entamoeba histolytica</i> • <i>Giardia intestinalis</i> • <i>Trypanosoma gambiense</i> • <i>Plasmodium vivax</i>			14
Unit II	4. Parasitic Nematodes Study of morphology, life cycle, pathogenicity, prophylaxis and control measures of • <i>Ascaris lumbricoides</i> • <i>Ancylostoma duodenale</i> • <i>Wuchereria bancrofti</i> • <i>Trichinella spiralis</i> • Nematode plant interaction; Gall formation 5. Parasitic Arthropods Biology, importance and control of • Ticks (Soft tick <i>Ornithodoros</i>, Hard tick <i>Ixodes</i>) • Mites (<i>Sarcoptes</i>) • Lice (<i>Pediculus</i>) • Flea (<i>Xenopsylla</i>) • Bug (<i>Cimex</i>) • Parasitoid (Beetles) 6. Parasitic Vertebrates • Conger eel Shark • Hood Mackerel bird and			14

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GO → AO → Scheme



RANI CHANNAMMA UNIVERSITY, BELAGAVI

PROGRAM /COURSE STRUCTURE AND SYLLABUS

As per the Choice Based Credit System (CBCS) designed in
accordance with Learning Outcomes-Based Curriculum
Framework (LOCF) of National Education Policy (NEP)
2020

For

Bachelor of Science (Hons) Zoology

w.e.f.

Academic Year 2021-22 and onwards


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PREAMBLE

The learning outcomes-based curriculum framework for B.Sc. Degree in Zoology is structured to offer a broad outline within which a Zoology program could be developed. The Zoology course is upgraded keeping in mind the aspirations of students, changing nature of the subject as well as the learning environment. Courses within Zoology have been revisited to incorporate recent advancements, techniques to upgrade the skills of learners. The new structure is expected to enhance the level of understanding among students and maintain the standard of Zoology degrees/program. Effort has been made to integrate use of recent technology and use of MOOCs to assist teaching-learning process among students.

This framework permits the review of graduate attributes, qualification descriptors, program learning outcomes and course-level learning outcomes periodically. The framework offers flexibility and innovation in syllabi designing and in methods adopted for teaching-learning process and learning assessment. The major objective is to elevate the subject knowledge of the students, making them critical thinkers and able to solve problems and issues related to Zoology logically and efficiently. Overall, this course has been modified to upgrade skills related to biological science and provide our students a competitive edge in securing a career in academia, industry, pharmaceutical research and development in private as well as public sectors. This course serves as plethora of opportunities in different field's right from classical to applied Zoology.

Zoology has been studied in an integrated and cross-disciplinary manner with a comprehensive understanding of all living systems, their relationship with the ecosystem and their application. The framework imbibes a Learning Outcome-based Curriculum Framework (LOCF) for its entire Under Graduate program in Zoology.

A comprehensive understanding and appreciation of the organism differences through ICT tools, MOOCs and well-designed hands on practical exposures along with the field work and if the same principle is followed to understand different phyla through the ladder of evolution and compare cardinal features for classification involving both morphological and molecular tools, along with associated field and lab work, the final product would be better trained without rote learning. Syllabi required are to impart and assess the quality of critical thinking, analytical and scientific reasoning, reflective thinking, information and digital literacy, and problem-solving capacity.

Aim of program deals with the study of animal kingdom specially the structural diversity, biology, embryology, evolution, habits and distribution of animals, both living and extinct. As it covers a fascinating range of topics, the modern zoologists need to have insight into many disciplines.

The Zoology courses designed in terms of concepts, mechanisms, biological designs & functions and evolutionary significance. The students should do the dissertation/ project work under practical of different courses, wherever possible.


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Proposed Curricular and Credits Structure under Choice Based Credit System (CBCS) of
Biotechnology Major & One Minor Discipline Scheme for the Four Years Chemistry B.Sc.
Undergraduate Honors Programme with effect from 2021-22

SEMESTER-I									
Category	Course code	Title of the Paper	Marks			Teaching hours/week			Duration of exams (Hrs)
			IA	SE	Total	L	T	P	
L1	21BSC1L1LK1	Kannada	40	60	100	4	-	-	3
	21BSC1L1LFK1	Functional Kannada							2
L2	21BSC1L2LEN2	English	40	60	100	4	-	-	3
	21BSC1L2LH12	Hindi							2
	21BSC1L2LSN2	Sanskrit							
	21BSC1L2LTE2	Telugu							
	21BSC1L2LUR2	Urdu							
DSC1	21BSC1C1ZOO1L	Cytology, Genetics and Infectious Diseases	40	60	100	4	-	-	4
	21BSC1C1ZOO1P	Cell Biology and Genetics	25	25	50	-	-	4	4
DSC1	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4
			25	25	50	-	-	4	4
SEC1	21BSC1S1CS1/ 21BSC1S1ZOO1	Digital Fluency/ Aquarium Fish Keeping	25	25	50	10	-	4	4/3
VBC1	21BSC1V1PE1	Physical Education- Yoga	25	-	25	-	-	2	1
VBC2	21BSC1V2HW1	Health & Wellness	25	-	25	-	-	2	1
OEC1	21BSC1O1ZOO1	Economic Zoology	40	60	100	3	-	-	3
Total Marks			Total			Semester Credits			25


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SECOND YEAR; SEMESTER-III										
Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			LA	SE E	Total	L	T	P		
L5	21BSC3L5LK3	Kannada	40	60	100	4	-	-	3	2
	21BSC3L5LFK3	Functional Kannada								
L6	21BSC3L6EN3	English	40	60	100	4	-	-	3	2
	21BSC3L6HI3	Hindi								
	21BSC3L6SN3	Sanskrit								
	21BSC3L6TE3	Telugu								
	21BSC3L6UR3	Urdu								
DSC3	21BSC3C3ZOO3L	Molecular Biology, Bioinstrumentation & Biotechniques	40	60	100	4	-	-	4	2
	21BSC3C3ZOO3P	Bioinstrumentation & Molecular Biology	25	25	50	-	-	4	2	4
DSC3	Another Department Code	Another Department Course Title	40	60	100	4	-	-	4	2
			25	25	50	-	-	4	2	4
SEC2	21BSC3S2AI/ 21BSC3S2Zoo	Artificial Intelligence/	25	25	50	1	-	2	2	2
VBC5	21BSC3V3PE3	Physical Education- Sports	25	25	50	-	-	2	1	-
VBC6	21BSC3V6NC2	NCC/NSS/R&R(S & G) / Cultural	25	25	50	-	-	2	1	-
OEC3	21BSC3O3ZO O3		40	60	100	3	-	-	3	2
Total Marks			700			Semester Credits			25	


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SEMESTER-V										
Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			IA	SRE	Total	L	T	P		
Zoology as Major Discipline										
DSC5	21BSC5C5ZOO5L	Non-Chordates and Economic Zoology	40	60	100	3	-	-	3	2
	21BSC5C5ZOO5P	Non-Chordate and Economic Zoology	25	25	50	-	-	4	2	4
DSC6	21BSC5C6ZOO6L	Chordates and Comparative Anatomy	40	60	100	3	-	-	3	2
	21BSC5C6ZOO6P	Chordate(Virtual Dissection), Comparative Anatomy	25	25	50	-	-	4	2	4
DSC5	Another Department Code as a Minor Subject	Another Department Course Title	40	60	100	3	-	-	3	2
			25	25	50	-	-	4	2	4
VC1	21BSC5VC1ZOO		40	60	100	3	-	-	3	2
VBC 9	21BSC5V5PE5	Physical Education- Sports	25	-	25	-	-	2	1	-
VBC 10	21BSC5V6NC4	NCC/NSS/R &R(S&G) / Cultural	25	-	25	-	-	2	1	-
SEC3	21BSC5S3ZOO3	Zoology	25	25	50	1	-	2	2	2
Total Marks						650	Semester Credits		22	


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Zoology Subject as a Minor Discipline

SEMESTER-V										
Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			I	SE	Total	L	T	P		
DSC5 As a Minor Subject	21BSC5C5ZOO 5L	Non-Chordates and Economic Zoology	40	60	100	3	-	-	3	2
	21BSC5C5ZOO 5P	Non-Chordate and Economic Zoology	25	25	50	-	-	4	2	4

SEMESTER-VI										
Category	Course code	Title of the Paper	Marks			Teaching hours/week			Credit	Duration of exams (Hrs)
			IA	SEE	Total	L	T	P		
DSC6 As a Minor Subject	21BSC6C6ZOO7L	Evolutionary and Developmental Biology	40	60	100	3	-	-	3	2
	21BSC6C6ZOO7P	Evolutionary and Developmental Biology	25	25	50	-	-	4	2	4


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Program Coding:

1. Code 21: Year of Implementation
2. Code BSC: BSC Program under the faculty of Applied Science of the University
3. Code 1: First Semester of the Program, (2 to 6 represent higher semesters)
4. Code AE: AECC, (C for DSC, S for SEC, V for VBC and O for OEC)
5. Code 1: First "AECC" Course in semester, similarly in remaining semester for such other courses
6. Code LK: Language Kannada, similarly Language English, Language Hindi, Language Telugu, Language Sanskrit, & Language Urdu
7. Code 1: Course in that semester.
8. Zou: Zoology

Note: All skill enhancement course (SEC) syllabus and title should be selected time to time notice from the university and/ or NEP committee accordingly.

ASSESSMENT METHODS**Evaluation Scheme for Internal Assessment:****Theory:**

Assessment Criteria	40 marks
1 st Internal Assessment Test for 30 marks 1 hr after 8 weeks and 2 nd Internal Assessment Test for 30 marks 1 hr after 15 weeks. Average of two tests should be considered.	30
Assignment	10
Total	40

Assessment Criteria	25 marks
1 st Internal Assessment Test for 20 marks 1 hr after 8 weeks and 2 nd Internal Assessment Test for 20 marks 1 hr after 15 weeks. Average of two tests should be considered.	20
Assignment	05
Total	15

Practical:

Assessment Criteria	25 marks
Semester End Internal Assessment Test for 20 marks 2 hrs	20
Journal (Practical Record)	05
Total	25


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SYLLABUS

Semester I

Year	I	Course Code: 21BSC1C1ZOO1L	Credits	04
Sem.	I	Course Title: Cytology, Genetics and Infectious Diseases	Hours	56
Unit No.	Course Content		Hours	
Unit I	Structure and Function of Cell Organelles I in Animal cell - Plasma membrane: chemical structure—lipids and proteins - Endomembrane system: protein targeting and sorting, transport, endocytosis and exocytosis Structure and Function of Cell Organelles II in Animal Cell - Cytoskeleton: microtubules, microfilaments, intermediate filaments - Mitochondria: Structure, oxidative phosphorylation; electron transport system - Peroxisome and Ribosome: structure and function		14	
Unit II	Nucleus and Chromatin Structure - Structure and function of nucleus in eukaryotes - Chemical structure and base composition of DNA and RNA - Structure of chromosomes - Types of DNA and RNA Cell cycle, Cell Division and Cell Signaling - Cell division: mitosis and meiosis - Introduction to Cell cycle and its regulation, apoptosis - Signal transduction: intracellular 11 signaling and cell surface receptors, via G-protein linked receptors - Cell-cell interaction: cell adhesion molecules, cellular junctions		14	
Unit III	Mendelism and Sex Determination - Basic principles of heredity: Mendel's laws- monohybrid cross and hybrid cross - Complete and Incomplete Dominance - Genetic Sex-Determining Systems, Environmental Sex Determination, Sex Determination and mechanism in <i>Drosophila melanogaster</i> - Sex-linked characteristics in humans and dosage compensation Extensions of Mendelism, Genes and Environment - Extensions of Mendelism: Multiple Alleles, Gene Interaction - The Interaction Between Sex and Heredity: Sex-Influenced and Sex-Limited Characteristics - Cytoplasmic Inheritance, Genetic Maternal Effects Interaction between Genes and Environment: Environmental Effects on Gene Expression, Inheritance of Continuous Characteristics.		14	

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Course Outcomes (COs):

At the end of the course the student should be able to:

1. To use simple and compound microscopes.
2. To prepare stained slides to observe the cell organelles.
3. To be familiar with the basic principle of life, how a cell divides leading to the growth of an organism and also reproduces to form new organisms.
4. The chromosomal aberrations by preparing karyotypes.
5. How chromosomal aberrations are inherited in humans by pedigree analysis in families.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs)

Course Outcomes (COs) / Program	CC P1	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC
I Core competency	X											
II Critical thinking	X											
III Analytical reasoning	X											
IV Research skills	X											
V Team work	X											

Note: Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark 'X' in the intersection cell if a course outcome addresses a particular program outcome.


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OPEN-ELECTIVE SYLLABUS :

Year	I	Course Code: 21BSC101ZOO1	Credits	03
Sem.	I	Course Title: Economic Zoology	Hours	42
Unit No.		Course Content	Hours	
Unit I		1. Sericulture: - History and present status of sericulture in India - Mulberry and non-mulberry species in Karnataka and India - Mulberry cultivation - Morphology and life cycle of <i>Bombyx mori</i> - Silkworm rearing techniques: Processing of cocoon, reeling - Silkworm diseases and pest control 2. Apiculture: - Introduction and present status of apiculture - Species of honey bees in India, life cycle of <i>Apis indica</i> - Colony organization, division of labour and communication - Bee keeping as an agro based industry; methods and equipments: indigenous methods, extraction appliances, extraction of honey from the comb and processing - Bee pasturage, honey and bees wax and their uses Pests and diseases of bees and their management	14	
Unit II		3. Live Stock Management: Dairy: - Introduction to common dairy animals and techniques of dairy management - Types, loose housing system and conventional barn system: advantages and limitations of dairy farming - Establishment of dairy farm and choosing suitable dairy animals-cattle - Cattle feeds, milk and milk products - Cattle diseases Poultry: - Types of broods and their rearing methods - Feed formulations for chicks - Nutritive value of egg and meat - Disease of poultry and control measures 4. Aquaculture: - Aquaculture in India: An overview and present status and scope of aquaculture Types of aquacultures: Pond culture: Construction, maintenance and management; carp culture, shrimp culture, shellfish culture, composite fish culture and pearl culture	14	
Unit III		5. Fish culture: Common fishes used for culture.	14	


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 Dept. of Zoology,
 G.P. Porwal Arts, Commerce & Science
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7. Shukla and Upadhyaya (2002). Economic Zoology, Rastogi Publishers
8. Yadav Manju (2003). Economic Zoology, Discovery Publishing House.
9. Jabde Pradip V (2005). Textbook of applied Zoology, Discovery Publishing House, New Delhi.
10. Cherian & Ramachandran Bee keeping in-South Indian Govt. Press, Madras.
11. Sathe, T.V. Vermiculture and Organic farming.
12. Bard, J (1986). Handbook of Tropical Aquaculture.
13. Santharam, R. A. Manual of Aquaculture.
14. Zaka, R.I and Hamiyi (1971). Aquarium fishes and plants
15. Jabde, P.V. (2005) Text Book of Applied Zoology: Vermiculture, Apiculture, Sericulture, Lac culture.
16. Animal Disease- Bairagi K. N. Anmol Publications Pvt.Ltd 2014
17. Economics of Aquaculture - Singh (R.K.P) - Danika Publishing Company 2003
18. Applied and Economic Zoology (SWAYAM) web
https://swayam.gov.in/nd2_gac20_gac23/preview Course Books published in English and Kannada may be prescribed by the Universities and College

Pedagogy: Chalk and Talk, PPT, Group discussion, Seminar, Field visit


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Course Learning Objective:

The course will impart basic knowledge of ornamental fish industry and inculcate its scope as an avenue for career development as an entrepreneur or as an aquari-culturist. It will provide a clear understanding of the basics of biology and habits of aquarium fish, so as to facilitate taking up ornamental fish keeping as an enterprise, even at the household level. The skill capacity building of students will be promoted by teaching the techniques of aquarium constructions, feed formulation and preparation, transportation, maintenance and management of the system. Students will have 'hands-on' experience by exposure to technology, production, functioning or operation of an institution through visits to public aquariums in the markets, ornamental fish farms, hatcheries, and fish feed production plant as study tours or field visits.

Course Learning Outcome:

- Upon completion of the course, students should be able to: Acquire knowledge about different kinds of fish their compatibility in aquarium.
- Become aware of Aquarium as commercial, decorative and of scientific studies. Develop personal skills on maintenance of aquarium.
- Know about the basic needs to set up an aquarium, i.e., dechlorinated water, reflector, filters, scavenger, aquatic plants etc. and the ways to make it cost-effective.


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College, SINDGI, Dist: Vijayapur


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	ventilation; Respiratory volumes and capacities; Transport of oxygen and carbon dioxide in blood, Respiratory pigments, Dissociation curves and the factors influencing it. Circulation and Excretion in humans • Components of blood and their functions; hemopoiesis • Blood clotting: Blood clotting system, Blood groups: Rh-factor, ABO and MN • Structure of mammalian heart • Cardiac cycle; Cardiac output and its regulation, Electrocardiogram, Blood pressure and its regulation Structure of kidney and its functional unit; Mechanism of urine formation	
Unit IV	Nervous System and Endocrinology in humans • Structure of neuron, resting membrane potential(RMP) • Origin of action potential and its propagation across the myelinated and unmyelinated nerve fibers. Types of synapse Endocrine glands - pineal, pituitary, thyroid, parathyroid, pancreas and adrenal Muscular System in humans Histology of different types of muscle; Ultra structure of skeletal muscle; Molecular and chemical basis of muscle contraction; Characteristics of muscle twitch; Motor unit, summation and tetanus.	14

Suggested Readings

1. Nelson & Cox: Lehninger's Principles of Biochemistry: McMillan (2000)
2. Zubay et al: Principles of Biochemistry: WCB (1995)
3. Voet & Voet: Biochemistry Vols I & 2: Wiley (2004)
4. Murray et al: Harper's Illustrated Biochemistry: McGraw Hill (2003) Elliott and Elliott: Biochemistry and Molecular Biology: Oxford University Press
5. Guyton, A.C. & Hall, J.E. Textbook of Medical Physiology, XI Edition, Harcourt Asia PTE Ltd. /W.H.Saunders Company. (2006).
6. Tortora, G.J. & Grabowski, S. Principles of Anatomy & Physiology. XI Edition John Wiley & sons (2006).
7. Christopher D. Moyes, Patricia M. Schulte, Principles of Animal Physiology. 3rd Edition, Pearson Education (2016).
8. Hill, Richard W., et al. Animal Physiology. Vol. 2. Sunderland, MA: Sinauer Associates, (2004).
9. Chatterjee CC Human Physiology Volume I & 2, 11th edition, CBS Publishers (2016).

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G. P. Pokharlats College, Sindol, Dist. Vijayapur

Course Content

List of labs to be	Hours
1. Preparation of models of nitrogenous bases- nucleosides and nucleotides.	20
2. Preparation of models of amino acids and dipeptides.	
3. Preparation of models of DNA and RNA.	
4. Qualitative analysis of Carbohydrates, Proteins and Lipids.	
5. Qualitative analysis of Nitrogenous wastes – Ammonia, Urea and Uric acid.	
6. Separation of amino acids or proteins by paper chromatography.	
7. Determination of the activity of enzyme (Urease)-Effect of [S] and determination of K_m and V_{max} .	15
8. Determination of the activity of enzyme (Urease) - Effect of temperature and time.	
10. Estimation of Hemoglobin in human blood using Sahli's haemoglobinometer.	15
11. Counting of RBC in blood using Hemocytometer.	
12. Counting of WBC in blood using Hemocytometer.	
13. Differential staining of human blood corpuscles using Leishman stain.	
14. Recording of blood glucose level by using glucometer.	06
Virtual Labs (Suggestive sites) https://www.vlab.co.in https://zoologyssn.blogspot.com www.vlab.iitb.ac.in/vlab https://vlab.amrita.edu https://sites.dartmouth.edu www.online-labs.in	

Text Books

1. Nelson & Cox: Lehninger's Principles of Biochemistry: McMillan (2000)
2. Zubay et al: Principles of Biochemistry: WCB (1995)
3. Voet & Voet: Biochemistry Vols I & 2: Wiley (2004)
4. Murray et al: Harper's Illustrated Biochemistry: McGraw Hill (2003) Elliott and Elliott: Biochemistry and Molecular Biology: Oxford University Press
5. Guyton, A.C. & Hall, J.E. Textbook of Medical Physiology, XI Edition, Harcourt Asia PTE Ltd. / W.B. Saunders Company. (2006).
6. Tortora, G.J. & Grabowski, S. Principles of Anatomy & Physiology, XI Edition John

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VI - SEMESTER - DSE - 2

B. A. SOCIOLOGY

SOCIAL WELFARE AND SOCIAL POLICY IN INDIA

Objectives:

- To understand the Basic Concepts in Social Welfare
- To study the different Welfare Programmes and Policies in India
- To understand the process of Social Change and Development through Social Welfare.

Unit -I Introduction

1. Meaning, Definition and Importance of Social Welfare
2. Concepts - Welfare State, Re-distribution, Democracy, Accountability and Transparency
3. Social Welfare Needs: Compulsory Primary Education; Full-employment; Health Care

Unit -II Welfare of Disadvantage Groups

1. Welfare of Scheduled Castes
2. Welfare of Scheduled Tribe
3. Welfare of Other Backward Classes
4. Welfare of Minorities

Unit - III Women and Child Welfare

1. National Health Policy and Programmes for Women
2. Family Welfare Programmes
3. National Policy for Children
4. Welfare Policy for Elderly

Unit -IV Youth and Labour Welfare

1. National Youth Policy
2. Youth Welfare Programmes; Youth and Sports
3. Youth Empowerment and Employability
4. Labour Welfare Programmes

Unit -V Social Welfare and Development

1. Social Welfare and Social Legislations
2. Barriers to Social Welfare in India; Civil Society
3. Agencies of Social Welfare - Role of Government and Non-government Organizations in Social Welfare
4. Central Social Welfare Board and State Social Welfare Board


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VI - SEMESTER - SEC - 4
B. A. SOCIOLOGY
SOCIETY, MASS MEDIA AND COMMUNICATION

Objectives:

- To create interest among students to acquire knowledge about Mass Media and Communication.
- To provide a Sociological Perspective on the role of Mass Media and Communication in Indian Society.
- To develop the Communicative Ability of the students in Speaking, Reading and Writing Skills.
- To know the role of Communication and Mass Media in the Development of Society.

Unit - I

Introduction

1. Mass Media: Concept, Definition, Characteristics
2. News Paper, Magazines, Radio, Television and Cinema
3. Social Responsibility of Mass Media

Unit - II

Communication

1. Communication: Definition, Characteristics
2. Functions and Forms of Communication
3. Process of Communication, Barriers to Communication

Unit- III Mass Media, Communication and Social Change

1. Role of Mass Media in Social Change.
2. Information and Communication Technology (ICT), Computer, Internet
3. Role of ICT and Its Impact on Society

Activity: Preparing News Report of Various Functions in the College.

References:

- Graham Murdock. (1975). *The Sociology of Mass Communications and Sociological Theory*. The Australian and New Zealand Journal of Sociology, Volume 11, No. 2. Sage.
- Allan, Wells. (1979). *Mass Media and Society*. Mayfield, California.
- Denis Mcquill. (1969). *Towards a Sociology of Mass Communication*. Macmillan, London.
- Johnson, K. (2000). *Television and Social Change in Rural India*. London: Sage.
- Keval Kumar. (1981). *Mass Communication in India*. Jaico, Bombay.
- Knapp, M. L. & Miller, G.R. (1985). *Handbook of Interpersonal Communication*. Sage Publications.
- R.K. Chatterjee. (1978). *Mass Communication*. NBT, New Delhi.
- Singhal, A. and E.M. Rogers. (2000). *India's Communication Revolution*. Delhi: Sage.
- Seelivas R. Melkote. (1991). *Communication for Development in the Third World*. Sage Publications, New Delhi.


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RANI CHANNAMMA UNIVERSITY

BELAGAVI

THE COURSE STRUCTURE & SYLLABUS OF UNDER GRADUATE

BACHELOR OF ARTS

SOCIOLOGY

1ST TO 6TH Semesters

w.e.f.

Academic Year 2020-21 and Onwards
Under

CHOICE BASED CREDIT SYSTEM (CBCS)


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B.A. Sociology (Optional)
CBCS Syllabus (UG)
(W.e.f. 2020-21 Onwards)

Semester	Code/ Course	Paper No	Title of the Paper	Teaching Hours/ Week	Credits	Marks			Duration of Sem, End Exam
						IA	Sem. End Exam	Total	
I	ASOCDSC 1	1	Principles of Sociology	5	3	20	80	100	3
II	ISOCDSC 2	2	Study of Indian Society	5	3	20	80	100	3
III	CSOCDSC 3	3.1	Indian Social Thinkers	5	3	20	80	100	3
	CSOCSEC 1	3.2	Personality Development and Communication Skills	2	2	10	40	50	2
IV	DSOCDSC 4	4.1	Study of Western Sociological Thought	5	3	20	80	100	3
	DSOCSEC 2	4.2	Health and Sanitation	2	2	10	40	50	2
V	ESOCDSC 5	5.1	Rural Development in India	4	4	20	80	100	3
	ESOCDSE 1	5.2(a) or 5.2(b)	Urban Society in India or Social Demography	4	4	20	80	100	3
	ESOCSEC 3	5.3	Sociology of Tourism	2	2	10	40	50	2
VI	FSOCDSC 6	6.1	Basics of Social Research	4	4	20	80	100	3
	FSOCDSE 2	6.2(a) or 6.2(b)	Current Social Problems or Social Welfare in India	4	4	20	80	100	3
	FSOCSEC 4	6.3	Society, Mass Media and Communication	2	2	10	40	50	2
				44	36				

DSC: Discipline Specific Course
DSE: Discipline Specific Elective
SEC: Skill Enhancement Course


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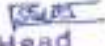

Principal,

Unit-V Social Change and Social Control

1. Social Change: Meaning, Definitions and Characteristics
2. Factors of Social Change: Geographical, Biological, Cultural and Technological Factors
3. Social Control: Meaning, Definitions and Characteristics
4. Agencies of Social Control (Formal and Informal)

References:

- Abraham Francis (2006): Contemporary Sociology, Oxford University Press, New Delhi.
- Bottomore, T.B.: Sociology: A Guide to Problems and Literature, George Allen and Unwin, Bombay, India.
- Davis Kingsley (1982): Human Society, Surfeit Publications, New Delhi.
- Giddens Anthony (2001): Sociology (4th Ed.), Blackwell Publishers, Cambridge, UK.
- Gisbert Pascual (1983): Fundamentals of Sociology, Orient Longmans, Bombay.
- Green A.W. (1964): Sociology- Analysis of Life in Modern Society (4th Edition)
- Ian Robertson (1980): Sociology, Worth Publishers, INC, New York 1980
- Jayaram, N. (1988): Introduction to Sociology, MacMilan, India, Madras.
- Johnson Harry M. (1995): Sociology: A Systematic Introduction, New Delhi : Allied Publishers
- Ogburn and Ninkoff (1964): A Handbook of Sociology, Publishing House, Pvt. Ltd, Ram Nagar, New Delhi.
- Ram Ahuja (2001): Research Methods, Rawat Publication, Jaipur.
- Samuel Koenig (1960): Sociology- An Introduction to the Science of Society, Barnes and Noble, INC, New York
- Shankar Rao (2004): Sociology, S. Chand & Co. New Delhi.
- Sharma R. N. (1976): Principles of Sociology, Media Publishers and Promoters Ltd, Bombay.
- Mulgund, L.C. (2008): Readings in General Sociology, Shruti Prakashan, Dharwad.


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References:

- Ahuja ram (1993): Indian Social System, Rawat pub. Jaipur.
- Ambedkar B.R Annihilation of Caste
- Berneman, G.D. (1979): Caste and Other Inequalities: Essays
- Betesille Andre (1992): Backward Classes in Contemporary India, New Delhi: OUP
- Bose, N.K. (1967): Culture and Society in India .Bombay: Asia Publishing House.
- Chaudhuri Buddhadeb (1991): Tribal Development in India. New Delhi: Inter India Publications.
- Dube, S.C. (1977): Tribal Heritage of India. New Delhi: Vikas Publication.
- Dube, S.C (1990): Indian Society, nation book trust, New Delhi. Inequality. Meerut: Folklore Institute.
- Ghurye.G.S (1969) : Caste and Race in India, Popular Prakashan, Bombay.
- Hasnain, N. (1983): Tribes in India. Harman Publications, New Delhi.
- Indene Ronald (1990): Imaging India. Oxford: Brasil Blackward.
- Karve, Irawati. (1961): Hindu Society: An Interpretation. Poona: Deccan College.
- Kothari Rajani (Ed.) (1973) :Caste in Indian Politics
- Mandelbaum (1970): Society in India Bombay. Popular Prakashan.
- Mulgund, I.C. (2008): Readings in Indian Sociology.Shrusti Prakashan, Dharwad.
- Satya Murthy T.V. (1996): Religion, Caste, Gender, and Culture Contemporary India. New Delhi: OUP


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References:

- Ambedkar B.R.: Complete Works of Dr. B.R. Ambedkar Vol. I, Govt. of Maharashtra, Bombay. (Also Available in Kannada)
- Barnes, H.E. (1969): Introduction to the History of Sociology. Chicago: The University of Chicago Press, Bombay.
- Dhananjay Keer - Life and Mission of Dr. B.R. Ambedkar
- Gandhi M.K.: Auto Biography. Navjeevan Prakashan, Ahmadabad.
- Ghurye G.S. 1945. Culture and Society. Bombay.
- Karve Irawati. 1961. Hindu Society: An interpretation. Pune: Deccan College
- Karve Irawati (1968) Kinship Organization in India, Asia Publishing House
- Mali, H.B. (2001): Samajik Chintaneya Adyayana (Kannada), Bharat Prakashan, Dharwad.
- Mulgund, I.C. (2008): Readings in General Sociology, Shruuti Prakashan Dharwad
- Nagesh, H.V. (2001): Samajik Chintane- Ondu Adyana (Kannada), Bharat Prakashan, Dharwad.
- Pandharinath Prabhu (1961): Hindu Social Organisation, Popular Prakashan, Bombay.
- Shankar Rao, C.N. (2001): Study of Social Thought. Jai Bharat Publication, Mangalore.
- Sharma, R. N. (1981): Indian Society. Media Publishers and Promoters Ltd., Bombay.
- Sharma, R. N. and Sharma, R. K.: Indian Social Thought. Media Publishers and Promoters Ltd.,
- Srinivas, M. N. 1963, Social Change in Modern India, California, Berkeley: California
- Srinivas, M. N.: Caste in Modern India and Other Essays. Popular Prakashan, Bombay.
- Srinivas, M. N.: Social Change in India. Popular Prakashan, Bombay.
- Srinivas, M.N. 1980. India: Social Structure, New Delhi: Hindustan Publishing, University Press, Popular Prakashan


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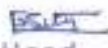
* 1998, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018, 2020, 2022, 2024, 2026, 2028, 2030, 2032, 2034, 2036, 2038, 2040, 2042, 2044, 2046, 2048, 2050, 2052, 2054, 2056, 2058, 2060, 2062, 2064, 2066, 2068, 2070, 2072, 2074, 2076, 2078, 2080, 2082, 2084, 2086, 2088, 2090, 2092, 2094, 2096, 2098, 2100, 2102, 2104, 2106, 2108, 2110, 2112, 2114, 2116, 2118, 2120, 2122, 2124, 2126, 2128, 2130, 2132, 2134, 2136, 2138, 2140, 2142, 2144, 2146, 2148, 2150, 2152, 2154, 2156, 2158, 2160, 2162, 2164, 2166, 2168, 2170, 2172, 2174, 2176, 2178, 2180, 2182, 2184, 2186, 2188, 2190, 2192, 2194, 2196, 2198, 2200, 2202, 2204, 2206, 2208, 2210, 2212, 2214, 2216, 2218, 2220, 2222, 2224, 2226, 2228, 2230, 2232, 2234, 2236, 2238, 2240, 2242, 2244, 2246, 2248, 2250, 2252, 2254, 2256, 2258, 2260, 2262, 2264, 2266, 2268, 2270, 2272, 2274, 2276, 2278, 2280, 2282, 2284, 2286, 2288, 2290, 2292, 2294, 2296, 2298, 2300, 2302, 2304, 2306, 2308, 2310, 2312, 2314, 2316, 2318, 2320, 2322, 2324, 2326, 2328, 2330, 2332, 2334, 2336, 2338, 2340, 2342, 2344, 2346, 2348, 2350, 2352, 2354, 2356, 2358, 2360, 2362, 2364, 2366, 2368, 2370, 2372, 2374, 2376, 2378, 2380, 2382, 2384, 2386, 2388, 2390, 2392, 2394, 2396, 2398, 2400, 2402, 2404, 2406, 2408, 2410, 2412, 2414, 2416, 2418, 2420, 2422, 2424, 2426, 2428, 2430, 2432, 2434, 2436, 2438, 2440, 2442, 2444, 2446, 2448, 2450, 2452, 2454, 2456, 2458, 2460, 2462, 2464, 2466, 2468, 2470, 2472, 2474, 2476, 2478, 2480, 2482, 2484, 2486, 2488, 2490, 2492, 2494, 2496, 2498, 2500, 2502, 2504, 2506, 2508, 2510, 2512, 2514, 2516, 2518, 2520, 2522, 2524, 2526, 2528, 2530, 2532, 2534, 2536, 2538, 2540, 2542, 2544, 2546, 2548, 2550, 2552, 2554, 2556, 2558, 2560, 2562, 2564, 2566, 2568, 2570, 2572, 2574, 2576, 2578, 2580, 2582, 2584, 2586, 2588, 2590, 2592, 2594, 2596, 2598, 2600, 2602, 2604, 2606, 2608, 2610, 2612, 2614, 2616, 2618, 2620, 2622, 2624, 2626, 2628, 2630, 2632, 2634, 2636, 2638, 2640, 2642, 2644, 2646, 2648, 2650, 2652, 2654, 2656, 2658, 2660, 2662, 2664, 2666, 2668, 2670, 2672, 2674, 2676, 2678, 2680, 2682, 2684, 2686, 2688, 2690, 2692, 2694, 2696, 2698, 2700, 2702, 2704, 2706, 2708, 2710, 2712, 2714, 2716, 2718, 2720, 2722, 2724, 2726, 2728, 2730, 2732, 2734, 2736, 2738, 2740, 2742, 2744, 2746, 2748, 2750, 2752, 2754, 2756, 2758, 2760, 2762, 2764, 2766, 2768, 2770, 2772, 2774, 2776, 2778, 2780, 2782, 2784, 2786, 2788, 2790, 2792, 2794, 2796, 2798, 2800, 2802, 2804, 2806, 2808, 2810, 2812, 2814, 2816, 2818, 2820, 2822, 2824, 2826, 2828, 2830, 2832, 2834, 2836, 2838, 2840, 2842, 2844, 2846, 2848, 2850, 2852, 2854, 2856, 2858, 2860, 2862, 2864, 2866, 2868, 2870, 2872, 2874, 2876, 2878, 2880, 2882, 2884, 2886, 2888, 2890, 2892, 2894, 2896, 2898, 2900, 2902, 2904, 2906, 2908, 2910, 2912, 2914, 2916, 2918, 2920, 2922, 2924, 2926, 2928, 2930, 2932, 2934, 2936, 2938, 2940, 2942, 2944, 2946, 2948, 2950, 2952, 2954, 2956, 2958, 2960, 2962, 2964, 2966, 2968, 2970, 2972, 2974, 2976, 2978, 2980, 2982, 2984, 2986, 2988, 2990, 2992, 2994, 2996, 2998, 3000, 3002, 3004, 3006, 3008, 3010, 3012, 3014, 3016, 3018, 3020, 3022, 3024, 3026, 3028, 3030, 3032, 3034, 3036, 3038, 3040, 3042, 3044, 3046, 3048, 3050, 3052, 3054, 3056, 3058, 3060, 3062, 3064, 3066, 3068, 3070, 3072, 3074, 3076, 3078, 3080, 3082, 3084, 3086, 3088, 3090, 3092, 3094, 3096, 3098, 3100, 3102, 3104, 3106, 3108, 3110, 3112, 3114, 3116, 3118, 3120, 3122, 3124, 3126, 3128, 3130, 3132, 3134, 3136, 3138, 3140, 3142, 3144, 3146, 3148, 3150, 3152, 3154, 3156, 3158, 3160, 3162, 3164, 3166, 3168, 3170, 3172, 3174, 3176, 3178, 3180, 3182, 3184, 3186, 3188, 3190, 3192, 3194, 3196, 3198, 3200, 3202, 3204, 3206, 3208, 3210, 3212, 3214, 3216, 3218, 3220, 3222, 3224, 3226, 3228, 3230, 3232, 3234, 3236, 3238, 3240, 3242, 3244, 3246, 3248, 3250, 3252, 3254, 3256, 3258, 3260, 3262, 3264, 3266, 3268, 3270, 3272, 3274, 3276, 3278, 3280, 3282, 3284, 3286, 3288, 3290, 3292, 3294, 3296, 3298, 3300, 3302, 3304, 3306, 3308, 3310, 3312, 3314, 3316, 3318, 3320, 3322, 3324, 3326, 3328, 3330, 3332, 3334, 3336, 3338, 3340, 3342, 3344, 3346, 3348, 3350, 3352, 3354, 3356, 3358, 3360, 3

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References:

- Aron Raymond (1962): Main Currents in Sociological Thought, (2 Volumes), Harmondsworth, Middlesex, Penguin Books.
- Barnes, H. E. (1999): Introduction to the History of Sociology. Chicago: The University of Chicago Press.
- Borgardus, E. A.: The History of Social Thought
- Cover Lewis, A. (2001): Masters of Sociological Thought, (2 Volumes), Rawat Publishers, New Delhi
- Fletcher Ronald (1994): The Making of Sociology (2 Volumes), Rawat Publication, Jaipur.
- Francis Abraham and John Henry Morgan (1985): Sociological Thought. MacMillan, India Ltd., New Delhi
- George Ritzer (Ed.): The Blackwell Companion to Major Social Theories. Blackwell Publishers, Great Britain.
- Guy Rocher (1990): A General Introduction to Sociology- A theoretical Perspective, Academic Publishers, Calcutta.
- Haralambos Michael (1997): Sociology- Themes and Perspectives, Oxford University Press, Delhi
- Morrison, Ken. (1985): Marx, Durkheim, Weber- Formation of Modern Social Thought. London Sage Publishers.
- Ritzer George (1996): Sociological Theory, Tata McGraw Hill, New Delhi
- Shankar Rao, C.N. (2001): Study of Social Thought, Jai Bharat, Mangalore.
- Timasheff Nicolas and George Theodorson (1976): Sociological Theory (4th Edn), Random House New York.
- Zeltin Irving (1998): Rethinking Sociology: A Critique of Contemporary Theory. Rawat Publication, Jaipur.


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V - SEMESTER - DSC - 5
B. A. SOCIOLOGY
RURAL DEVELOPMENT IN INDIA

Objectives:

- To understand the nature of Rural Development in India.
- To understand the changing nature of Land Tenure System and Land Reforms.
- To Understand the Panchayat Raj System in India
- To understand the nature of Rural Development Programmes.

Unit- I Introduction

1. Meaning, Nature and Significance of Rural Development
2. Objectives of Rural Development in India
3. Land Tenure, Agrarian Relations Land Reforms, and Social Changes
4. Green Revolution, White Revolution, Red Revolution, Yellow Revolution, Blue Revolution: Objectives and Achievements

Unit- II Rural Community

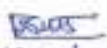
1. Characteristics of Rural Community
2. Rural Problems: Rural Poverty, Rural Unemployment,
3. Rural Health and Sanitation
4. Indebtedness: Causes and Effects, Farmer's Suicide

Unit- III Peasant Movements in India

1. Meaning and Nature of Peasant Movements
2. Bardoli Satyagraha, Telangana Movement and Naxabari Movement
3. Peasant Movements in Karnataka: Mahadayi, Naragunda Bandaya, Kaveri
4. Impact of Peasant Movement.

Unit- IV Panchayat Raj System and Rural Development

1. Constitution of Gram Panchayat, Taluk Panchayat, and Zilla Panchayat
2. Panchayat Raj: Objectives, Functions and Its Duties
3. People's Participation and Women's Participation in Governance
4. Role of Personnel in Rural Development-Village Level Worker(VLW) Adyaksh and Upadyekshas, Grama Sevak(GS), Block Level Development Officers(BDO) and District Level Officers(CEO)


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V - SEMESTER - DSE - 1
B. A. SOCIOLOGY
URBAN SOCIETY IN INDIA

Objectives:

- To Provide Sociological understanding of Urban Society in India.
- To understand about the Evolution of Cities and Urban Communities.
- To make the students aware of Urban Problems in India
- To understand Urban Planning and Urban Development

Unit- I Introduction to Urban Society in India

1. Meaning and Characteristics of Urban Society
2. Significance of Study of Urban Life
3. Types of Cities
4. Urban Development in Ancient and Medieval Periods

Unit- II Cities in India

1. History and Growth of Cities in India
2. Factors for the Growth of Cities
3. Metropolitan and Mega Cities: Meaning and Characteristics
4. Growth of Metropolitan and Mega Cities in India

Unit- III Urbanization in Modern India

1. Meaning and Nature of Urbanization
2. Rural-Urban Migration
3. Factors Responsible for Rapid Urbanization
4. Consequences of Over Urbanization and its Measures

Unit- IV Urban Problems in India

1. Problems of Housing, Slums and Sanitation
2. Urban Crimes, Drug Addiction
3. Water Supply and Transportation
4. Environmental Problems: Pollution and its Effects, Remedies for Environmental Problems

Unit- V Urban Planning and Development

1. Urban Development and Its Objectives
 2. Urban Policy and Urban Development Programmes
 3. Urban Governance and its Role
 4. Challenges of Urban Management
- Activity: Field Visits to study the structure, Planning and Development of various Cities


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17 
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V - SEMESTER - DSE - 2
B. A. SOCIOLOGY
SOCIAL DEMOGRAPHY

Objectives:

- To understand about the Nature and Scope of Demographic Studies
- To know about the Changing Trends of Indian Population
- To know about the Family Welfare Programmes and Schemes in India

Unit- I Introduction

1. Origin and Development of Demography
2. Meaning, Nature and Scope
3. Importance of Social Demography

Unit- II Components of Population Growth

1. Fertility
2. Mortality
3. Migration

Unit- III Theories of Population Growth

1. Malthusian Theory
2. Optimum theory
3. Theory of Demographic Transition

Unit- IV Population Growth

1. Trends of World Population Growth
2. Trends and Patterns of Population Growth in India
3. Causes and Consequence of Population Growth in India

Unit- V Population Control

1. History of Family Planning Programmes
2. Family Welfare Programmes
3. Population Policy- 2000


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V - SEMESTER - SEC - 3
B. A. SOCIOLOGY
SOCIOLOGY OF TOURISM

Objectives:

- To provide the basic understanding of Tourism and its Social Dimensions.
- To Study the impact of Tourism on Society and Culture.
- To Provide knowledge of Tourism, Social aspects of Tourism and its Social Dimensions
- Understanding Tourism as a Socio-Cultural and Economic force in Social Development
- Motivation to choose a career in Tourism Management

Unit- I Introduction

1. Tourism; Meaning and Definitions
2. Sociological Perspectives of Tourism,
3. Significance of Sociological Tourism

Unit-II Tourism Industry in India

1. Types of Tourism; Eco Tourism, Health Tourism, Religious Tourism, Educational Tourism.
2. Tourism in India- Opportunities
3. Policies of Tourism in India

Unit-III Tourism and Social Change

1. Socio-Cultural Impact of Tourism on Society
2. Tourism and Cultural Exchange
3. Development of Tourism, Sociological factor in Tourist Motivation, Motivating Locals for Tourism

Activity: Visiting Historical places and Preparing Report

References:

- Andrew Holden, 2005, *Tourism studies and the social sciences*, London: Routledge
- Apostolopoulos, Y., Lelvadi, S & Yiannakis, A., (eds.) 2000, *The Sociology of Tourism: Theoretical and Empirical Investigations*, London: Routledge.
- Archer, B.H., 1973, *The Impact of Domestic Tourism*, Cardiff University of Wales Press.
- Basuwaraj, Gulabetty, 2016 *Sociology of Leisure and Tourism Study* Lambert publication
- Bezbaruah, M.P., 1999, "Tourism - Current Scenario and Future Prospects", *Yojana*, Vol.43.
- Bhatia, A.K., 2003, *Tourism Development, Principles and Practices*, New Delhi: Sterling
- Brahmankar, E.B., 1998, *Travel and Tourism as a Career*, Vol.37, .11.
- Brij, Bhardwaj, 1999, "Infrastructure for Tourism Growth", *Yojana*, Vol.43.

VI - SEMESTER - DSC - 6
B. A. SOCIOLOGY
BASICS OF SOCIAL RESEARCH

Objectives:

- To understand the Importance of Social Research in Social Science
- To know about the Research Procedure
- Make the students to understand, Report Writing and Application of Basic Statistics
- To understand the Application of Computers in Social Research

Unit- I Introduction

1. Social Research : Meaning and Definition
2. Importance of Research in Social Sciences
3. Qualities of Researcher
4. Relationship between Theory and Research

Unit- II Research Procedure

1. Stages of Social Research
2. Research Design
3. Report Writing
4. Reference and Bibliography

Unit- III Data Collection

1. Primary Data: Questionnaire, Interview
2. Secondary Data
3. Qualitative and Quantitative Data

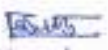
Unit- IV Use of Statistics in Social Research

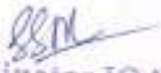
1. Meaning and Definitions of Statistics
2. Classification and Tabulation
3. Graphical Presentation of Data (Graphs and Diagrams)
4. Measures of Central Tendency : Mean, Median, Mode

Unit- V Computer Application in Social Research

1. Characteristics of Computers
2. Use of Computers in Social Research
3. Microsoft Office: Word, Excel and Power Point Presentation (PPT)
4. Need of Internet : e-Library, Websites and Web Browsers

Activity: Preparing field Survey Report Making Small Presentations.


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VI - SEMESTER - DSE - 2
B. A. SOCIOLOGY
CURRENT SOCIAL PROBLEMS

Objectives:

- To understand about the Nature of Social Problems.
- To understand the Nature and Causes of Changing trends of Crimes in India.
- To understand the Nature of Vulnerable Problems of Life.

Unit- I Introduction

1. Meaning, Definition and Nature of Social Problems
2. Causes and Consequences of Social Problems
3. Social Organization and Disorganization
4. Characteristics of Social Disorganization

Unit- II Social Disorganization Issues and Problems

1. **Crime and Delinquency- Meaning, Causes and Consequences**
2. Types of Crime
3. Changing Aspects of Crime and Criminals: White Collar Crime, Criminalization of Politics and Communalism
4. Measures to Control Crime

Unit- III Youths, Children and Aged

1. Youth Unrest, Youth and Drug Addiction
2. Juvenile Delinquency
3. **Child Abuse and Child Labour**
4. **Problems of Aged**

Unit- IV Corruption, Terrorism

1. Corruption: Meaning and Types
2. Causes and Consequences of Corruption
3. Terrorism: Meaning, Causes and Effects
4. **Measures to Control Corruption and Terrorism**

Unit- V Problems of Women and Dalits

1. Domestic Violence, Dowry
2. Rape and Sexual Abuse
3. Female Foeticide and Infanticide
4. **Atrocities on Untouchables**


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UNIT – IV	HEALTH CARE REFORMS	15
Chapter 10		
National Health Policy		
Medicalisation and Pharmaceuticalisation of Health		
Chapters 11 & 12		
Learning from the Field: Report on Health Services, or Functioning of Health Organisations or Selected Health Programmes at State Level		

REFERENCE BOOKS:

- Albert, Gary L. and R. Fitzpatrick (1994). Quality of Life in Health Care: Advances in Medical Sociology, Mumbai: Jai Press.
- Annandale Allen (2001). The Sociology of Health and Medicine- A Critical Introduction, Cambridge: Polity Press.
- Bloom, Samuel W. (1963). The Doctor and His Patient, New York: Free Press.
- Coe, Rodney M. (1970). Sociology of Medicine, New York: McGraw Hill.
- Chloe Bird, Peter Conrad and Alan Fremont eds. (2000). Handbook of Medical Sociology, New York: Prentice Hall.
- Cockerham, William C. (1997). Medical Sociology, New Jersey: Prentice Hall.
- Conrad, Peter ed. (2005). Sociology of Health and Illness: Critical Perspectives, New York: Worth Publishing.
- Dutta, P.R. (1955). Rural Health and Medical Care in India, Ambala: Army Education Press.
- Madan, T.N. (1980). Doctors and Nurses, New Delhi: Vikas.
- Ommen, T.K. (1978). Doctors and Nurses: A Study in Occupational Role Structures, Bombay: Macmillan.
- Baru, Rama V. (1998). Private Health Care in India, New Delhi: Sage.
- Schwatz, Howard (1994). Dominant Issues in Medical Sociology, New York: McGraw Hill.
- Venkataratnam, R. (1979). Medical Sociology in an Indian Setting, Madras: Macmillan.

Pedagogy: Field work, micro projects, group discussion, role play, written/oral presentation by students

Formative Assessment	
Assessment Occasion/ Type	Weightage in Marks
Fieldwork as per Chapter 11 and 12 of Unit IV	30
Written Test	10
Total	40

Teachers can adopt best of three or five principles for both activities and written test



 Page 28 of 34



DSC SOC C15 - Content of Course: SOCIETY IN KARNATAKA		60 Hours
UNIT - I	FEATURES OF KARNATAKA	15
Chapter 1: Overview of Karnataka's History: Antiquity of Land and Language; Social Composition: Religion, Caste, Tribe, Class, Language (as per latest Census/Sample Surveys);		
Chapter 2: Geography and Politics: Spatial Features: Plains, Coastal and Malnad; Old Mysuru, Hyderabad Karnataka, Bombay Karnataka; Present Administrative Divisions (Mysuru, Bengaluru, Kalyana Karnataka and Kittur Karnataka); Political Landscape since Independence		
Chapter 3: Economic Profile: Developments in Agriculture, Industry and Service Sectors		
UNIT - II	SOCIAL ORGANISATION	15
Chapter 4: Folklore and Regional Culture of Karnataka Urbanisation: Trends and Issues		
Chapter 5: Education: Status of Social Sciences and Humanities; Growth of STEM Courses,		
Chapter 6: Human Development Index (HDI) and Regional Disparities		
UNIT - III	SOCIAL MOVEMENTS OF KARNATAKA	15
Chapter 7: Socio-Religious Movements: Veerashaiva, Non-Brahmin, Dalit Movements		
Chapter 8: Unification of Karnataka; Save Kannada Movement; Gokak Movement		

Page 30 of 34

Page 30 of 34

Page 30 of 34

Chapter 9: Environment Movements: Chipko and Appiko, Sahyadri Mining Protest, Seabird Naval Base, Movement against Social Forestry	
UNIT – IV	STUDIES ON KARNATAKA SOCIETY
15	
Chapter 10: Contributions of M.N. Srinivas, S. Parvathamma, Hiremallur Ishwaran, and other prominent Sociologists of Karnataka	
Chapters 11 and 12: Fieldwork report on Changing Social Institutions and their Impact on Social Life	

REFERENCE BOOKS:

- Government of Karnataka. Human Development Reports, Planning and Statistics Department, Bangalore.
- Jai Prabhakar, S.C. Socio-Cultural Dimensions of Development in North Karnataka, CMDR Monograph Series No. 63.
- Panchamukhi, P.R. (2001). North-South Divide: Karnataka's Development Scenario, CMDR Monograph, Series No. 21, pp. 1-10, Centre for Multi-Disciplinary Development (CMDR), Dharwad, Karnataka.
- Rajyashree, K.S. Kodava Speech Community: An Ethno Linguistic Study. Online webpage of languageindia.com. M.S. Thirumalai.
- Srikanta Sastri, S. (1940). Sources of Karnataka History, Vol. I (1940) - University of Mysore Historical Series, University of Mysore, Mysore.
- Suryanath U. Kamat. (2001). Concise History of Karnataka. MCC, Bangalore.
- Nanjundappa High Commission Report.

Pedagogy: Field work, micro projects, group discussion, role play, written/oral presentation by students

Formative Assessment	
Assessment Occasion/ Type	Weightage in Marks
Fieldwork as per Chapter 11 and 12 of Unit - IV	30
Written Test	10
Total	40

Teachers can adopt best of three or five principles for both activities and written test.

Sociology B A NEP 2020



RANI CHANNAMMA UNIVERSITY, BELAGAVI

Vidyasangama, N.H. 4, Belagavi- 591156. Karnataka State

B. A. SOCIOLOGY SYLLABUS

NEP-2020

*With Effect from
the Academic Year 2021- 2022*


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NEP 2020 - UG SOCIOLOGY: Syllabus			
SEM	Paper	Title of paper	Credits
1	DSC -1	Understanding Sociology	3
	DSC -2	Changing Social Institutions in India	3
	OE-1	OE 1.1: Indian Society: Continuity and Change or OE 1.2: Sociology of Everyday Life or OE 1.3: Sociology of Mass Media	3
2	DSC -3	Foundations of Sociological Theory	3
	DSC -4	Sociology of Rural Life in India	3
	OE-2	OE 2.1: Society through Gender Lens or OE 2.2: Social Development in India or OE 2.3: Sociology of Health Care	3
3	DSC-5	Social Stratification and Mobility	3
	DSC-6	Sociology of Urban Life in India	3
	OE-3	OE 3.1: Sociology of Youth or OE 3.2: Sociology of Tourism Management or OE 3.3: Social Welfare and Social Policy In India	3
4	DSC-7	Sociology of Marginalized Groups	3
	DSC-8	Population and Society	3
	OE-4	OE 4.1: Sociology of Leisure or OE 4.2: Sociology of Food Culture or OE 4.3: Current Social Problems	3

DSC: Discipline Specific Core

DSE: Discipline Specific Elective

SEC: Skill Enhancement

OE: Open Elective


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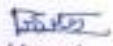
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BA Semester 1

Title of the Course:

Course 1: Understanding Sociology		Course 2: Changing Social Institutions in India	
Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester
3	42	3	42

Content of Course 1: Understanding Sociology	42 Hrs
Unit - 1 Sociology as Science	17
Chapter No. 1 Sociology as a study of Groups and Social Interaction - Definition, Scope and Need; Sociology as Science Vs. Sociology as Social Reform	
Chapter No. 2 Foci of Sociology: Social Institutions	
Chapter No. 3 (C) Sociological Eye (Randall Collins), Sociological Imagination (C Wright Mills' distinction between trouble i.e. personal in nature and issue, i.e. public in nature)	
Chapter No. 4. Sociological Perspectives: Functionalist, Conflict, Symbolic Interactionist, Feminist	
Unit - 2 Culture and Socialization	14
Chapter No. 5. Culture: Definition and Elements of Culture; Comparison between Culture and Civilization; Acculturation; Robert Ezra Park's idea of Melting Pot; Cultural Contact, Cultural Shock, Counter Culture and Contra Culture	
Chapter No. 6. Global Culture: Globalization of Values; Cultural Imperialism	
Chapter No. 7. Emerging Issues in Culture: Consumer Culture, Children as Consumers, Cyber culture, Netiquette in the age of Digital Living and Digital Divide	
Chapter No. 8 Socialization: Definition, Stages, Theories of Self: Charles Horton Cooley and George Herbert Mead	


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Unit - 3 Social Change	11
Chapter No. 9 Meaning, Definitions and Features, Changes due to Industrialization, Rationalization, Globalization, Urbanization and Information Explosion	
Chapter No. 10. Consequences of Change: Changing age Structure of Societies: Technological Impact on Social Life; Changing Environment	

Text Books

- Abraham Francis (2006): Contemporary Sociology, Oxford University Press, New Delhi.
- Berger, P L 1963, Invitation to Sociology: A Humanistic Perspective, Doubleday, Garden City, N.Y
- Bottomore, T.B.: Sociology: A Guide to Problems and Literature, George Allen and Unwin, Bombay, India.
- Bruce, Steve, 2018, Sociology: A Very Short Introduction, 2nd edition, Oxford University Press, New York
- Corrigan-Brown, Catherine 2020, Imagining Sociology: An Introduction with Readings, 2nd Edition, Oxford University Press, Canada
- Davis Kingsley (1982): Human Society, Surfeit Publications, New Delhi.
- Davis, Kingsley 1949, Human Society, Macmillan, Delhi
- Ferrante, Joan 2013, Seeing Sociology: An Introduction, 3rd Edition, Cengage Learning, USA
- Ferris, Kerry and Jill Stein, 2018, The Real World: An Introduction to Sociology, 6th Edition, W W Norton, New York
- Giddens Anthony (2001): Sociology (4th Ed.), Blackwell Publishers, Cambridge, UK
- Giddens, Anthony and Philip W Sutton, 2013, Sociology, 7th edition, Wiley India Pvt. Ltd, New Delhi
- Gisbert Pascual (1983): Fundamentals of Sociology, Orient Longmans, Bombay.
- Harlambois, M and R M Heald, 1980, Sociology: Themes and Perspectives, Oxford University Press, Delhi
- Ian Robertson (1980): Sociology, Worth Publishers, INC, New York 1980
- Inkeles, Alex 1987, What is Sociology? Prentice-Hall of India, New Delhi
- Jayaram, N 1989, Sociology - Methods and Theories, Macmillan India Ltd. Bangalore
- Jayaram, N. (1988): Introduction to Sociology, MacMillan, India, Madras.
- Johnson Harry M. (1995): Sociology: A Systematic Introduction, New Delhi : Allied Publishers
- Johnson, H M 1995, Sociology: A Systematic Introduction, Allied Publishers, New Delhi
- Lemert, Charles 2012, Social Things: An Introduction to the Sociological Life, Rowman and Littlefield Publishers, Maryland
- Macdonis, John 2018, Sociology Global Edition, Pearson, England
- Mulagund, I C 2008 Readings in General Sociology, Srushti Prakashana, Dharwad
- Mulagund, I C 2008 Readings in Indian Sociology, Srushti Prakashana, Dharwad Ritzer, George and W W Murphy, 2020, Introduction to Sociology, 5th edition,
- Mulagund, I. C. (2008): Readings in General Sociology, Shrushti Prakashan, Dharwad.

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Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark 'X' in the intersection cell if a course outcome addresses a particular program outcome.

Content of Course 2: Changing Social Institutions in India	42 Hrs
Unit - 1 Family and Marriage	16
Chapter No. 1 Family - Definitions of Family and Household; Changing structure of family; changes in size and composition	
Chapter No. 2 Weakening of gender and age stratification - democratization of relationships: between spouses, parent-children; step-parenting	
Chapter No. 3 Changes in care giving of children and elderly	
Chapter No. 4 Marriage - Definition; changing patterns of marital relations- cohabitation, separation, divorce and remarriage.	
Chapter No. 5 Changes in age of marriage, marriage decision making and regional variations	
Chapter No. 6 Decrease in number of children and voluntary childlessness	
Unit - 2 Religion and Education	13
Chapter No. 4. Religion:- Definition; secularisation vs resurgence of religion in modern world	
Chapter No. 5. Challenge of diversity - religious freedom vs state laws	
Chapter No. 6. Education: Definition; education as socialization; types of education - formal and informal	
Chapter No. 6 Functional view - manifest and latent functions; Conflict view- education as tool for perpetuating inequality	
Chapter No. 7 Schooling and Life Chances (Max Weber's views) - increasing Enrolment Ratio	
Chapter No.8 Education and Employability - Technology and Digital Divide	
Unit - 3 Economic and Political Institutions	13
Chapter No. 9 Definitions of Economy and Work	
Chapter No.10 Gender stratification in work and its feminization	
Chapter No. 11 Job insecurity, Unemployment; Outsourcing - opportunities and threats	
Chapter No. 12 Definitions of Political Institution, Government, Governance and State	
Chapter No. 13 Status of Democracy in India :- Social Reality	
Chapter No. 14 Challenges: Militancy, Fundamentalism, Regionalism	

Content of Course 3: Foundations of Sociological Theory		Hrs 42
Unit - 1 August Comte and Herbert Spencer		12
Chapter 1: Auguste Comte: Intellectual context, Positivism, Law of Three Stages, Classification of Sciences		
Chapter 2: Herbert Spencer: Theory of Social Evolution, Organic Analogy, Types of Society		
Unit - 2 Karl Marx and Georg Simmel		14
Chapter 3: Karl Marx: Dialectical Materialism, Economic Determinism, Class Struggle, Alienation		
Chapter 4: Georg Simmel: Formal Sociology, Theory of Sociation, Theory of Conflict		
Unit - 3. Emile Durkheim and Max Weber		16
Chapter 5: Emile Durkheim: Social Facts, Division of Labour in Society, Suicide, Sociology of Religion		
Chapter 6: Max Weber: Social Action, Ideal Types, Bureaucracy, Types of Authority, Protestant Ethics and Spirit of Capitalism		

Text Books

- Abraham, Francis 1984, Modern Sociological Theory, Orient Longman, Delhi Berger, P L 1963, Invitation to Sociology: A Humanistic Perspective, Doubleday, Garden City, N.Y
- Aron Raymond (1982): Main Currents in Sociological Thought. (2 Volumes), Harmondsworth, Middlesex, Penguin Books.
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- Collins, Randall 1997, Sociological Theory, Rawat Publications, Jaipur
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- Coser Lewis, A. (2001): Masters of Sociological Thought. (2 Volumes), Rawat Publishers, New Delhi
- Coser, Lewis A 2002, Masters of Sociological Thought: Ideas in Historical and Social Context, Rawat Publications, Jaipur
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- Francis Abraham and John Henry Morgan (1985): Sociological Thought. MacMillan, India Ltd. New Delhi

Content of Course 4: Sociology of Rural Life in India	42 Hrs
Unit - 1 Rural and Agrarian Social Structure	16
Chapter No. 1: Social Construction of Rural Societies: Myth and Reality (M N Shrinivas)	
Chapter No. 2: Agrarian Social Structure: Land Tenure Systems (Colonial Period); Post-Independence Indian Land Reform Laws	
Chapter No. 3: Commercialization of Agriculture	
Chapter No. 4: Commoditization of Land	
Unit - 2. Themes of Rural Society in India	14
Chapter No. 4: Rural Caste and Class Structure	
Chapter No 5: Gender and Agrarian Relations	
Chapter No. 6: Impact of Panchayat Raj System and Rural Politics	
Chapter No. 7: Actors in Market - Weekly Fairs, Trading Castes, Emerging Trading Classes and Key Role of Intermediaries	
Chapter No. 8: Emergence of Online and Virtual Commodity Markets - Features and Impact on Traditional Sellers and Buyers	
Unit - 3 Rural Development	12
Chapter No. 9: Objectives of Rural Development- Induced Intervention: PURA, MGNREGA, Swach Bharat Abhiyan, Akshara Dasoha, Water and Land Development Efforts	
Chapter No. 10: Challenges to Sustainable Rural Development: Casteism, Factional Politics, Natural Calamities (Droughts and Floods), Utilization of Water, Fertilizers and Pesticides	

Text Books

- Aniz Sartaj (1978): Rural Development: Learning from China. London: MacMillan Press.
- Bhattacharaya, Sub Nath (1983): Rural Development in India and Other Developing Countries. Calcutta: Metropolitan Book Co. Pvt. Ltd.
- Brahmananda, P.R., B.K. Narayana and A. Kalappa. (Ed. 1987): Dimensions of Rural Development. Himalaya Publishing House, Mumbai.
- Chambers Robert (1984): Rural Development: Putting the Past First. Chennai: Orient Longman Ltd.
- Chaturvedi, T. N. (Ed. 1986): Rural Development: Some Themes and Dimensions. New Delhi: Indian Institute of Public Administration.
- Deb, K. (1986): Rural Development in India- Since Independence. Sterling, New Delhi.
- Desai, A R 1977, Rural Sociology in India, Popular Prakashan, Bombay Doshi, S L.

Sociology B A NEP 2020

Examine the changing conditions of socially excluded groups through movement for social justice	X	X	X	X	X	X	X	X	X
To critically look at the two way street of globalisation and its impact on Indian society and communicate in clear terms	X	X		X	X	X	X	X	X
Communicate critical observations with clarity	X	X	X	X	X	X	X	X	X

Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark 'X' in the intersection cell if a course outcome addresses a particular program outcome.

Content of Course 1- Indian Society: Continuity and Change	39 Hrs
Unit - 1 Traditions in Transition	13
Chapter 1: The Nature and Direction of Change in Indian Society	
Chapter 2: The Changing Face of Indian Social Institutions: Family, Caste, Polity and Economy	
Chapter 3: The Rural-Urban Divide: Infrastructure, Education, Health and Local Governance	
Unit - 2 Movements for Social Justice	13
Chapter No. 4: A Background View: Role of the Constitution of India and Legislation	
Chapter No. 5: Backward Classes and Dalit Movements	
Chapter No. 6: New Social Movements: LGBTQ, Civil Rights, Ecological, Anticorruption Movements	
Chapter No. 9 Opportunities for Social Mobility for Scheduled Castes, Scheduled Tribes and Women	
Unit - 3 India in the Globalisation Era	13
Chapter No. 10: Globalisation and Indian Culture: Impact on Food Habits, Language, Ideas and Life Styles	
Chapter No. 11: Globalisation and Social Values: Impact on Youth and their World View, Changing Landscape of Love and Marriage, Impact on Familial Relationships and Understanding Others	

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Content of Open Elective Course I: Sociology of Everyday Life	39 Hrs
Unit - 1 Introduction	14
Chapter No. 1: Sociology as a study of Social Interactions and its Need Social processes:- Nature, types: Cooperation, Competition, accommodation, assimilation.	
Chapter No. 2: Everyday Life - Meaning; Why Study Everyday Life? (Contributions of Erving Goffman and Anthony Giddens); Role of Socialisation in establishing habits and practices- action, thinking and feeling	
Chapter No. 3: Social Institutions as Established Practices and Customs - Definition and Elements	
Chapter No. 4: Challenges and Problems of Everyday Life	
Unit - 2 Self and Society	13
Chapter No. 5: Definition of Situation (W I Thomas' Principle) Chapter No. 6: The Looking-Glass Self; Relation between Individual and Society	
Chapter No. 7: Role of Social Media in Constructing Self and Identity	
Unit - 3 Culture in Everyday Life	12
Chapter No. 8: Definition of Culture; Types of Culture: High Culture, Popular Culture, Recorded Culture and Lived Culture Chapter No. 9: Mass Media and Everyday Life	
Chapter No. 10: Globalisation and Cultural Diffusion	

Text Books:

- Berger, P L 1963, Invitation to Sociology: A Humanistic Perspective, Doubleday, Garden City, N.Y
- Bruce, Steve, 2018, Sociology: A Very Short Introduction, 2nd edition, Oxford University Press, New York
- Corrigan-Brown, Catherine 2020, Imagining Sociology: An Introduction with Readings, 2nd Edition, Oxford University Press, Canada
- Coser, Lewis 1977 Masters of Sociological Thought, Harcourt Brace Jovanovich, New York
- Davis, Kingsley 1949, Human Society, Macmillan, Delhi
- Ferrante, Joan 2013, Seeing Sociology: An Introduction, 3rd Edition, Cengage Learning, USA
- Ferris, Kerry and Jill Stein, 2018, The Real World: An Introduction to Sociology, 6th Edition, W W Norton, New York
- Giddens, Anthony and Philip W Sutton, 2013, Sociology, 7th edition, Wiley India Pvt. Ltd. New Delhi
- Haralambos, M and R M Hild, 1980, Sociology: Themes and Perspectives, Oxford University Press, Delhi
- Inkeles, Alex 1987, What is Sociology? Prentice-Hall of India, New Delhi
- Jayaram, N 1989, Sociology - Methods and Theories, Macmillan India Ltd. Bangalore

B.A. Semester I - Open Elective 1.3

1.3 SOCIETY AND MASS MEDIA	
Total Contact Hours: 39	Course Credits: 3
Formative Assessment Marks: 40	Duration of ESA/Exam: 2 hours
Model Syllabus Authors:	Summative Assessment Marks: 60

Course Outcomes (COs):

At the end of the course the student should be able to:

- Analyze the relationship between mass media and society and role of Mass Media in the Development of Society.
- The learner will be familiarize with nature, characteristics and functions of mass media in modern society and able to develop analytical capacity.
- Students will be provided Sociological Perspective on the role of Mass Media in Indian Society.
- The course seeks to improve the employability of students who are willing to make career as Journalists, Reporters editors and Freelance Writers

Open Elective 3: Sociology of Mass Media	39 Hrs
Unit - 1 Introduction to Mass Media	13
Chap 1 Meaning, Definitions, Characteristics and functions of mass media	
Chap 2. Evolution of mass media and digital revolution in India	
Chap 3. Importance of Mass media and communication	
Unit - 2 Types of Mass media	13
Chap 4. Typology of Media	
Chap 5. Print Media: Merits and demerits	
Chap 6. Electronic Media: Merits and demerits, digital divide	
Chap 7. Social Media: Types and Implications	
Unit- III Mass Media and society	13
Chap 8: Impact of media on culture, education, consumer behaviour and politics	
Chap 9: Impact of Globalization and Mass Media	
Chap 9: Abuse of Media, commercialization of news & media imperialism	
Chap 10: Ethics and Social Responsibility of Mass media, Media, technology and culture	

Suggested Internet Resources

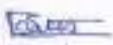
Unit 1 : Introduction to Mass Media

- <https://sendpulse.com/support/glossary/mass-media>
- <http://indiannewsmediawatch.blogspot.com/2015/11/mass-media-definition-types-and-nature.html>
- <https://www.crisis-control.com/blogs/the-revolution-of-mass-communication/>
- <https://www.vistualkollage.com/2019/03/the-advantages-or-importance-of-mass-media.html>

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Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark 'X' in the intersection cell if a course outcome addresses a particular program outcome.

Content of Open Elective 2: Society Through Gender Lens	39 Hrs
Unit - 1 Social Construction of Gender	14
Chapter 1: Gender and Sex, Patriarchy, Gender Relations, Gender Discrimination, Gender Division of Labour	
Chapter 2: Gender Equality, Gender Neutrality, Androgyny and Gender Sensitivity	
Chapter 3: Gender Representation of Women and Transgender in Indian Social Institutions	
Unit - 2 Gender Representation and Violence	14
Chapter 4: Mass Media and Politics	
Chapter 5: Education, Employment and Health	
Chapter 6: Domestic Violence, Sexual Harassment at Work Place, Dowry and Rape, Dishonour Killing	
Unit-3 Addressing Gender Justice	11
Chapter 7: The Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)	
Chapter 8: 73rd and 74th Constitutional Amendment and Women's Empowerment	
Chapter 9: Right to self determination of gender - Supreme Court of India's Judgment in NLSA Vs Union of India and others (Writ Petition (Civil) No 400 of 2012)	


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 V.V.S. SCIENCE


Principal,
 G. P. Porwal Arts, Comm. &
 V.V.S. Science

Content of Open Elective 2: Social Development in India	39 Hrs
Unit - 1 Social Change and Development	13
Chapter No. 1: Rethinking Development: From economic development to social development and Human Development Index (HDI)	
Chapter No. 2: Development: Concept - changes in values and social relations as development; S C Dube's contributions; Importance of Social Development	
Chapter No. 3: Indian thinking about Social Development - Swami Vivekananda, Ravindranath Tagore, MK Gandhi and Dr BR Ambedkar	
Unit - 2. Components of Social Development	13
Chapter No. 4: Political Freedom, Economic Facilities	
Chapter No 5: Social Opportunities, Transparency, Security	
Unit - 3 Challenges to Social Development	13
Chapter No. 6: Sustainable and Inclusive Development, Environmental Sustainability	
Chapter No. 7: Responsible Private Corporations, Redressing Regional Imbalance, Harnessing Demographic Dividend	

Text Books

- So, Alvin Y 1990 Social Change and Development : Sage Publication.
- Sen, Amartya 1999 Development as Freedom, Oxford University Press, Delhi
- Rai, Harendranath 2013 Economic Thinking of Swami Vivekananda, Mahatma Gandhi and Ravindranath Tagore : Advaita Ashrama Calcutta
- Dayal, P 2006 Gandhian Theory of Reconstruction. Atlantic
- Mulagund, I C 2008 Readings in General Sociology, Srushti Prakashana, Dharwad
- Mulagund, I C 2008 Readings in Indian Sociology, Srushti Prakashana, Dharwad
- Pearson, P W 1996 Post -Development Theory. Sage Publication
- Srivatsava S P 1998 The Development Debate. Rawat Publication
- ಇಂದ್ರಜಿತ್, ಆರ್ ಎಸ್ ಸಾಮಾಜಿಕ ಬದಲಾವಣೆ, ಕನ್ನಡ ಭಾಷೆಯಲ್ಲಿ ಅನುವಾದ, ಕರ್ನಾಟಕ

Reference Works

- <https://blogs.bse.ac.uk/southasia/2016/01/13/5689/> Top 100 economic and development challenges for India 20016 http://docuue.net/swtn/upload_newfiles/2 SocialDevelopment-TheConcept.pdf https://uk.sagepub.com/sites/default/files/upm-assets/57961_book_item_57961.pdf Defining Social Development http://www.gsdrc.org/wp-content/uploads/2015/10/SD_HDI.pdf Social Development and Human Development
- <http://csdindia.org/wp-content/uploads/2017/10/Working-Paper-Impact-of-Economic-Growth-on-Social-Development-2017.pdf>
- <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/200011468764675475/social-development-in-economic-development>
- <https://www.oecd-ilibrary.org/sites/c1305.pdf-en/index.html?itemId=/content/>

OEC 2.3- Sociology of Health Care	Hrs
Unit-I Health as a Social System	13
Chapter 1 Definitions, Concept of Health and Wellbeing, Illness, sickness, diseases, hygiene; Significance of Sociology of Health Care	
Chapter 2 Sociological Perspective on Health, The determinants of Health: The Social Basis of Health, Class, Gender and Health Inequalities	
Chapter 3 Diseases: Chronic and Other Diseases, Communicable and Non communicable Diseases, Health and Sanitation, Measures to Control Diseases	
Unit-II Health Care Institutions	13
Chapter 4. Significance of institutions in Context of health care and illness: Family and Health care, The elderly and Gender,	
Chapter 5. Hospitals and Health Care: Hospital as a social organization (Doctors, Nurses and Patients); Community Health Care	
Chapter 6. State and health Care: Health for all, maternal and child health	
Chapter 7. NGOs and Health Care	
Unit-III Health Care System in India	13
Chapter 8: Indigenous Knowledge systems of medicine in India, Systems of Medicine and alternative practices	
Chapter 9 Community Health Care; Rural Health Programs; Commercialization of health care services	
Chapter 10: health as a fundamental right. Health policy of the government of India	

Reference:

- Albert, Gary. L., and R. Fitzpatrick. (1994). Quality of Life in Health Care: Advance in Medical
- Albrecht Gary L. and Fitzpatrick R. Quality of life in Health Care: Advances in Medical Sociology, Jai Press Mumbai, 1994
- Arnold, 1994. Colonising the Body: State, Medicine and the Epidemic Disease in Nineteenth Century India, Oxford University Press, Delhi.
- Banerjee 1982. Poverty, Class and Health Culture in India, Vol. 1, New Delhi: Prachi Prakashan
- Bird, Chloe E. and Patricia P. Ricker. 2008. Gender and Health: The Effects of Constrained Choices and Social Policies. Cambridge, UK: Cambridge University Press ("Gender Differences in Health" 16-45, "Gender Barriers to Health" 62-68).
- Chloe Bird, Peter Conrad & Alan Fremont (2000) Handbook of Medical Sociology. New York
- Cockerham, William C. 1997. Medical Sociology. New Jersey: Prentice Hall. Michael Bury, Jonathan Gabe, 2004, The Sociology of Health and Illness: A Reader, London: Routledge
- Coe, Rodney M. (1970). Sociology of Medicine. New York: Mac Graw Hill.
- Conrad P. 2007. Medicalisation of Society: On the Transformations of Human Conditions into Treatable Disorders, Baltimore, John Hopkins University Press David.
- Dak, T.M. Ed. 1991. Sociology of Health, Rawat Publications, New Delhi.
- Dalal, Ajit, Ray Shubha, 2005. (Ed). Social Dimensions of Health, Rawat.
- Das Gupta, Monica et.al. ed.1996, Women's Health in India: Risk and Vulnerability New Delhi: Oxford University Press Turner.
- Dingwall, R. (1976). Aspects of Illness. Martin Robertson, London.
- Dittap, R. (1955). Rural Health and Medical Care in India. Army Education Press, Ambala.
- Govt. of Karnataka: Health Development Reports, 1990 to 2005.

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DEPARTMENT OF SOCIOLOGY

SYLLABUS

For

Undergraduate Programme in

Sociology 5th and 6th Semester

2023-24




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**Listing of Courses in
SOCIOLOGY for V & VI SEMESTERS:
TWO (2) MAJOR SUBJECTS
(Model A3-1)**

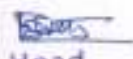
Semester	Course Category	Course Code	COURSE TITLE	Credits Assigned	Instructional Hours Per Week	
					Theory	Practical
V	DSC	SOC C9	SOCIAL ENTREPRENEURSHIP	4	4	-
		SOC C10	SOCIETY AND TRIBES	4	4	-
		SOC C11	STATISTICS FOR SOCIOLOGICAL RESEARCH	4	4	-
V	SEC	SOC C12	SOCIAL SKILLS AND CAREER DEVELOPMENT	3	2	-
VI	DSC	SOC C13	SOCIOLOGICAL PERSPECTIVES	4	4	-
		SOC C14	SOCIOLOGY OF HEALTH	4	4	-
		SOC C15	SOCIETY IN KARNATAKA	4	4	-
VI		SOC C16	INTERNSHIP/ DISSERTATION	2	2	-


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V. V. SALIMATH Sr. College


Principal,
G. P. Perwal Arts, Com. &
V. V. Salimath Sr. College,
SMDGI-586128, College Code: 5712

DSC SOC C9 - Content of Course: SOCIAL ENTREPRENEURSHIP		60 Hours
UNIT - I	FUNDAMENTALS OF SOCIAL ENTREPRENEURSHIP	15
Chapter 1 Social Entrepreneurship: Meaning, Features and Relevance; Social Business: Meaning; Difference between Social Entrepreneurship and Social Business; Relationship between Social Entrepreneurship and Social Change Chapter 2 Typology of Ventures: Social Purpose Ventures, Social Consequence Entrepreneurship, Profit & Non-Profit Models of Social Entrepreneurship Chapter 3 Identifying social business opportunities		
UNIT - II	ESTABLISHMENT OF NON-PROFIT ORGANISATIONS	15
Chapter 4 Concept (includes Non-Government Organisations), Objectives and establishment of Non-Profit Organisations (NPOs) Chapter 5 Legal Procedure for establishment of NPOs: Societies Registration Act, Indian Companies Act, Charitable Endowments Act, Foreign Contribution (Regulation) Act (FCRA); Available Tax Reliefs Chapter 6 Social Values of NPOs: Mission and Vision; MoA and Bye-Laws		
UNIT - III	MANAGEMENT AND FINANCING	15
Chapter 7 Human Resource Management: Staffing Plan, Social Security of Workers: Provisions and Benefits of Gratuity Act; Rules and Regulations of EPF Scheme Chapter 8 Project Management: Definition of Concept; Identification of Project; Proposal Development: Basic Factors, Project Proposal Guide; Budget, Rationale for sending Project Proposal to the Donor; Proposal Writing: Do's and Don'ts of a Project Proposal Chapter 9 Financing: Sources of Finance: Government, Donors, International Agencies; Documents Used in Fund Raising; Due Diligence; Campaigns; Internal Income Generation		


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Page 9 of 34
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UNIT - IV	CASE STUDIES	15
Chapter 10 Pratham, RUDSET, Vivekananda Girijana Kalyana Kendra, B.R. Hills, etc.		
Chapters 11 & 12 Students should study the functioning of a local NPO, present their ideas in a seminar and submit a report (For example working in the areas of Sanitation, Rural Development, Women Empowerment, etc.)		

SUGGESTED INTERNET RESOURCES

Unit 1

- <https://www.un.org/development/desa/youth/wp-content/uploads/sites/21/2020/10/WYR2020-Chapter1.pdf>
- <https://www.adb.org/sites/default/files/institutional-document/826606/adb2022bn-social-entrepreneurship-definition-philippines.pdf>
- https://web.mit.edu/sloan2/dese/readings/week01/Martin_Osberg_SocialEntrepreneurship.pdf
- https://entreprenorskapsforum.se/wp-content/uploads/2013/03/WP_09.pdf
- https://business.expertjournals.com/ark:/16759/EJBM_710mthembu147-177.pdf
- <https://isfcolombia.unilandes.edu.co/images/201519/LRD32.pdf>
- <https://www.hec.edu/en/faculty-research/centers/society-organizations-institute/think/society-institute-executive-factsheets/what-social-business>
- <https://socialtrendspot.medium.com/what-is-the-difference-between-social-innovation-social-enterprise-social-entrepreneurship-f63fce7bf925>
- https://www.albany.edu/faculty/miesing/teaching/soent/3_Recognizing_Social_Opportunities.pdf

Unit 2

- <http://eprints.lse.ac.uk/29032/1/cswp3.pdf> Defining the non-profit sector
- <https://prosper-strategies.com/seven-nonprofit-core-values-examples/>

Unit 3

- <https://www.intechopen.com/chapters/55499>
- <https://www2.fundsforngos.org/cat/project-planning-and-development/#:~:text=Project Planning: Project development is,lot of research and planning.>
- <https://www.pmf4dev.com/resources/manuals-and-guidelines/117-guide-for-ngo-s-project-preparation-and-management-euroaid/file.html>
- http://www.pmf4ngos.org/wp-content/uploads/2015/05/PMD_Pro_Guide_2e_EN_USLetter.pdf

REFERENCE BOOKS:

- Bornestein, David. (2007). How to change the world: Social entrepreneurs and the power of new ideas, Oxford University Press
- Carlson, Eric J and James Koch (2018). Building a successful social venture: A guide for social entrepreneurs. Berrett-Koehler Publishers Inc, California

DSC SOC C10 - Content of Course: SOCIETY AND TRIBES		60 Hours
UNIT – I	CONCEPTS AND CATEGORIES	15
Chapter 1: Tribes and Indigenous People; Genealogies, Scheduled Tribes, Primitive Tribes, De-Notified or ex-criminal Tribes in India; Geographical Distribution of Tribes in India		
Chapter 2: Hadis (Yarava, Jenukuruba, Kadukurubas); Meaning, Rules of Marriage, Clan, Lineage, Consanguinity and Affinity; Male-Female relations		
Chapter 3: Social System, Legal System, Political System, Economic System, Religion and Magic		
UNIT – II	CHANGES AND DEVELOPMENT ISSUES	15
Chapter 4: Social Mobility: Types, Tribes and Caste, Tribe-Caste-Peasant Continuum, Sanskritisation		
Chapter 5: Tribalisation, Detribalisation, Retribalisation		
Chapter 6: Tribal Development and Welfare: Approaches- Assimilationist and Isolationist; Problems of Exploitation, Land Alienation, Unemployment, Cultural Transformation, Scheduled Areas, Tribal Justice and Modern Law		
UNIT – III	STUDYING TRIBES	15
Chapter 7: Tradition of Fieldwork: History and Significance; Ethics of Fieldwork		
Chapter 8: Indian Tribes- Participatory Method, Case Studies, Sample Surveys		
Chapter 9: Studying Tribes: Primary and Secondary Data; Etic & Emic Perspectives		
UNIT – IV	FIELD WORK	15
Students have to take up field work in any nearby tribal settlement and present their findings in a Seminar and written report		

DSC SOC C11 - Content of Course: STATISTICS IN SOCIOLOGICAL RESEARCH		60 Hours
UNIT - I	SOCIOLOGICAL RESEARCH	15
Chapter 1 Meaning of Science, Social Science, Research Steps for Conducting Research: Choosing Research Topic Chapter 2 Literature Review; Research Design; Reference and Bibliography Chapter 3 Meaning of - Concept, Assumption, Hypothesis Formulating a Hypothesis; Independent Variable, Dependent Variable		
UNIT - II	METHODS OF SOCIOLOGICAL RESEARCH	15
Chapter 4 Qualitative and Quantitative Methods: Meaning, Differences Survey Methods: Sampling Chapter 5 & 6 Sources of Data (Primary, Secondary) Questionnaire, Interview, Participant Observation, Non-participant Observation		
UNIT - III	SOCIAL STATISTICS	15
Chapter 7 Social Statistics- Meaning, Need of Studying Social Statistics Types of Statistics: Descriptive Statistics, Inferential Statistics Chapter 8 Definition of- Population, Sample, Count, Fractions, Constant Variable Classification and Tabulation of Data Chapter 9 Meaning of Frequency Distribution; Construction of Frequency Tables; Diagrammatic and Graphical Representation of Grouped Data: Advantages; Bar Charts, Histogram, Frequency Polygon and Frequency Curve; Pie Charts		

UNIT – IV	STATISTICAL MEASUREMENT AND USE OF COMPUTERS	15
Chapter 10		
Measures of Central Tendency: Merits, Demerits		
Arithmetic Mean, Median and Mode		
Chapter 11		
Microsoft (MS) Office (<i>Word, Excel, Power Point</i>)		
Chapter 12		
Use of Computer in Social Science Research, e-library		

Reference Books

- Agarwal, Y.P. (1995). Statistical Methods: Concepts, Applications and Computation, New Delhi: Sterling Publishers.
- Altman, Micah, Jeff Gill and Michael McDonald. (2003). Numerical Issues in statistical computing for the social scientist. New York: John Wiley and Sons.
- Babbie, Earl. (2013). The practice of social research, Cengage, 13th Edition
- Bailey, K. (1994). The research process in methods of social research. Simon and Schuster, 4th Ed. The Free Press, New York
- Bryman, Alan. (1988). Quality and Quantity in Social Research. London: Unwin Hyman.
- Goode, W.E. and P.K. Hatt. (1952). Methods in Social Research. McGraw Hill New York
- Gupta, S.C. (1990). Fundamentals of Statistics. New Delhi: Himalaya Publishing House.
- Gupta, S.C. (1985). Statistical Methods. New Delhi: S. Chand and Sons.
- Irvine, J. I. Miles and J. Evans eds. (1979). Demystifying Statistics. London: Pluto Press.
- Norton, Peter. (2005). Introduction to Computers. New Delhi: Tata McGraw Hill.
- Luker, Kristin. (2008). Salsa Dancing into the Social Sciences, Harvard University Press, Harvard
- Rajaraman, V. (2004). Fundamentals of Computers. New Delhi: Prentice Hall.
- Shipman, Martin. (1998). The Limitations of Statistics. London: Longman.
- Srinivas, M.N. et al. (2002) (reprint). The Fieldworker and the Field: Problems and Challenges in Sociological Investigation, Oxford University Press, New Delhi

Pedagogy Field work, micro projects, group discussion, role play, written/oral presentation by students

Formative Assessment	
Assessment Occasion/ Type	Weightage in Marks
Activities	30
Written Test	10
Total	40

DSC SOC C13 - Content of Course: SOCIOLOGICAL PERSPECTIVES		60 Hours
UNIT - I	BASICS OF THEORY	15
Chapter 1 Meaning of Theory and Social Theory, Features Types of Theory: Macro, Meso, Micro Chapter 2 Building Blocks: Concept, Assumption, Hypothesis, Model; Need for Theoretical Thinking Chapter 3 Meaning of - Induction, Deduction, Fact, Causal Relation, Correlation, Constant, Variable, Generalisation		
UNIT - II	STRUCTURAL FUNCTIONAL PERSPECTIVE	15
Chapter 4 Functionalism: Origin and Meaning of Functionalism Chapter 5 Social System: Functions and Dysfunctions Chapter 6 Structuralism: Origin and Meaning, Features of Social Structure, Integration, Social Equilibrium, Social Order		
UNIT - III	CONFLICT PERSPECTIVE	15
Chapter 7 Conflict Perspective: Origin, Meaning of Conflict, Social Inequality Chapter 8 Power & Authority Dominance & Hegemony, Class Struggle Chapter 9 Process of Social Conflict, Functions of Social Conflict		

UNIT - IV	SYMBOLIC INTERACTION PERSPECTIVE	15
Chapter 10 Symbolic Interaction: Origin, Meaning, Social Construction of Reality, Interpretation, Reflexivity, Negotiation		
Chapter 11 Situation : Meaning, Definition and Importance		
Chapter 12 Dramaturgy and Everyday Life		

Reference Books

- Aron, Raymond (1991). Main Currents in Sociological Thought [Vol.1]. London: Penguin.
- Barnes H.E. ed. (1948). An Introduction to the History of Sociology, Chicago: Chicago University Press.
- Black, Max ed. (1961). The Social Theories of Talcott Parsons: A Critical Examination, Carbondale: Southern Illinois University Press.
- Coser, Lewis (1975). Masters of Sociological Thought: Ideas in Historical and Social Context, New York: Harcourt Brace Jovanovich.
- Firth, Raymond (1957). Man and Culture: An Evaluation of the Work of Bronislaw Malinowski, New York: Humanities Press.
- Giddens, Anthony (2004). In Defence of Sociology, Cambridge: Polity Press.
- Giddens, Anthony and J.H. Turner (1987). Social Theory Today, Cambridge: Polity Press.
- Jeffrey, Alexander C. (1985). Neo-functionalism, London: Sage.
- Luckmann, Thomas ed. (1978). Phenomenology and Sociology: Selected Readings, New York: Penguin Books.
- Merton, R.K. (1968). Social Theory and Social Structure, New York: The Free press
- Ritzer, George ed. (2007). The Blackwell Encyclopaedia of Sociology, Oxford: Blackwell.
- Routledge Library Edition (2004). The Sociology of Radcliffe Brown, London: Routledge.
- Scott, Appletrouth and Laura Desfor Edles (2008). Classical and Contemporary Sociological Theory: Text and Readings, California: Pine Forge Press.
- Tucker, K.N (2002). Classical Social Theory, Oxford: Blackwell Publication
- Wiseman, Boris (1998). Introducing Lévi-Strauss. Toronto: Totem Books.

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BSC SOC C14 - Content of Course SOCIOLOGY OF HEALTH		60 Hours
UNIT - I	INTRODUCTION	15
Chapter 1 Sociology of Health: Emergence Development of Sociology of Health in World and India Chapter 2 Sociology of Health: Meaning, Nature, Scope and Need, Sociology in Medicine and Sociology of Medicine Chapter 3 Actors: Doctors, Nurses; Paramedical Staff-Patients and their relationship		
UNIT - II	DETERMINANTS OF HEALTH	15
Chapter 4 Social Determinants: Class, Caste, Power, Gender, Social Cohesion Chapter 5 Cultural Determinants: Beliefs, Nutrition, Environment Chapter 6 Economic Determinants: Poverty, Homelessness, Living Conditions, Neighbourhood		
UNIT - III	MODELS OF HEALTH	15
Chapter 7 The Professionalization and Socialization of the Physician Sick Role and Experiencing Illness Chapter 8 Systems of Medicine (Biomedicine and AYUSH); Dominance of Biomedical Model Chapter 9 Functions of Hospital Hospital as Social Organisation		

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