Teaching Plan

Name of the Faculty : Dr. Anupama

Name of the Course : B.Sc (Physical Sciences) (CBCS)

Semester : II Sec (if any) :

Title of the Paper : Electricity and Magnetism

Month	Topics Covered	References
January 2016	Vector Analysis: Review of vector algebra (Scalar and Vector product), gradient, divergence, Curl and their significance, Vector Integration, Line, surface and volume integrals of Vector fields, Gauss-divergence theorem and Stoke's theorem of vectors (statement only) Electrostatics: Electrostatic Field, electric flux, Gauss's theorem of electrostatics.	Schaum's Outline of Vector Analysis by Murray R Spiegel, McGraw-Hill • Electricity and Magnetism, D C Tayal, 1988, Himalaya Publishing House. • Electricity and Magnetism, N. K. Sehgal,K. L. Chopra,D. L. Sehgal, Sultan Chand & Sons
February 2016	Applications of Gauss theorem- Electric field due to point charge, infinite line of charge, uniformly charged spherical shell and solid sphere, plane charged sheet, charged conductor. Electric potential as line integral of electric field, potential due to a point charge, electric dipole, uniformly charged spherical shell and solid sphere. Calculation of electric field from potential. Capacitance of an isolated spherical conductor. Parallel plate, spherical and cylindrical condenser. Energy per unit volume in electrostatic field. Dielectric medium, Polarisation, Displacement vector. Gauss's theorem in dielectrics. Parallel plate capacitor completely filled with dielectric.	• Electricity and Magnetism, Edward M. Purcell, 1986, McGraw-Hill Education. • Electricity and Magnetism, D C Tayal, 1988, Himalaya Publishing House. • D.J.Griffiths, Introduction to Electrodynamics, 3rd Edn, 1998, Benjamin Cummings. • Electricity and Magnetism, N. K. Sehgal,K. L. Chopra,D. L. Sehgal, Sultan Chand & Sons • Electricity and Magnetism, K. K. Tiwari, S. Chand.
March 2016	Magnetism: Magnetostatics: Biot-Savart's law and its applications- straight conductor, circular coil, solenoid carrying current. Divergence and curl of magnetic field. Magnetic vector potential. Ampere's circuital law. Magnetic properties of materials: Magnetic intensity, magnetic induction, permeability, magnetic susceptibility. Brief introduction of dia-, para- and ferromagnetic materials.	• Electricity and Magnetism, Edward M. Purcell, 1986, McGraw-Hill Education. • Electricity and Magnetism, D C Tayal, 1988, Himalaya Publishing House. • D.J.Griffiths, Introduction to Electrodynamics, 3rd Edn, 1998, Benjamin Cummings. • Electricity and Magnetism, N. K. Sehgal,K. L. Chopra,D. L. Sehgal,

	Electromagnetic Induction: Faraday's laws of electromagnetic induction, Lenz's law, self and mutual inductance, L of single coil, M of two coils. Energy stored in magnetic field.	Sultan Chand & Sons • Electricity and Magnetism, K. K. Tiwari, S. Chand.
April 2016	Maxwell`s equations and Electromagnetic wave propagation: Equation of continuity of current, Displacement current, Maxwell's equations, Poynting vector, energy density in electromagnetic field, electromagnetic wave propagation through vacuum and isotropic dielectric medium, transverse nature of EM waves, polarization.	• D.J.Griffiths, Introduction to Electrodynamics, 3rd Edn, 1998, Benjamin Cummings. • Elements of Electromagnetics, M.N.O. Sadiku, 2001, Oxford University Press.

Tentative date of Test- February 15, 2016.

Tentative date for Assignment Submission- March 15, 2016

Teaching Plan

Name of the Faculty: Dr. (Ms). Shalu Chandra

Name of the Course and Subject: B.Sc (H) Physical Science (Environmental Science)

Semester: II Sec (if any):

Title of the paper: Ability enhancement credit course (AECC Jan- May 2016)

Month	Topics Covered	References
January	**Unit 6 : Environmental Policies & Practices** • Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture • Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. •Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context. **(7 lectures)** **1 lecture per week field trip/presentation**	Bharucha, E. 2003, Textbook for Environmental Studies, University Grants Commission, New Delhi and Bharati Vidyapeeth Institute of Environmental Education and Research, Pune. 361. Odum, E.P., Odum, H.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders. Singh, J.S., Singh, S.P. and Gupta, S.R. 2006. Ecology, Environment and Resource Ecology, Environment and Resource Conservation. Anamaya Publishers.
February	**Unit 5 : Environmental Pollution** •Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution •Nuclear hazards and human health risks• Solid waste management: Control measures of urban and industrial waste. • Pollution case studies. **(8 lectures)** **1 lecture per week field trip/presentation**	-do-
March	**Unit 7 : Human Communities and the Environment** • Human population growth: Impacts on environment, human health and welfare.• Resettlement and rehabilitation of project affected persons; case studies.• Disaster	-do-

	management: floods, earthquake, cyclones and landslides. (**6 lectures)** **1 lecture per week field trip/presentation**	
April	**Unit 7 : Human Communities and the Environment** • Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan.• Environmental ethics: Role of Indian and other religions and cultures in environmental conservation. • Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi). (**6 lectures)** **1 lecture per week field trip/presentation** The tentative date of assignment/test/project Assignment: 15 March 2016 Submission: March 2016 Test/Presentation: 25 February 2016	-do-

Note: The tentative date of assignment/test/project may also be provided.

The schedule of Field trip may also be provided.

Teaching Plan

Name of the Faculty: Ms. Geetanjali Sageena

Name of the Course: B.Sc. (H) Physical Science

Semester: II Sec (if any): -

Title of the paper: Ability enhancement credit course (AECC Jan- May 2016)

Month	Topics Covered	References
January	Unit 1 : Introduction to environmental studies Multidisciplinary nature of environmental studies;• Scope	Bharucha, E. 2003, Textbook for Environmental Studies, University Grants Commission, New Delhi and Bharati

	and importance; Need for public awareness. **(2 lectures)** **1 lecture per week field trip/ presentation**	Vidyapeeth Institute of Environmental Education and Research, Pune. 361. Odum, E.P., Odum, H.T. & Andrews, J. 1971. Fundamentals of Ecology. Philadelphia: Saunders. Singh, J.S., Singh, S.P. and Gupta, S.R. 2006. Ecology, Environment and Resource Ecology, Environment and Resource Conservation. Anamaya Publishers.
February	Unit 2 : Ecosystems What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem:• food chains, food webs and ecological succession. Case studies of the following ecosystems : a) Forest ecosystem b) Grassland ecosystem c) Desert ecosystem d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) **(6 lectures)** **1 lecture per week field trip/ presentation**	-do-
March	Unit 3 : Natural Resources : Renewable and Non-renewable Resources Land resources and landuse change; Land degradation, soil erosion and desertification.• Deforestation: Causes and impacts due to mining, dam building on environment, forests,• biodiversity and tribal populations. Water : Use and over-exploitation of surface and ground water, floods, droughts, conflicts• over water (international & inter-state). Energy resources : Renewable and non renewable energy	-do-

	sources, use of alternate energy• sources, growing energy needs, case studies. **(8 lectures)** **1 lecture per week field trip/ presentation**	
April	Unit 4 : Biodiversity and Conservation Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones• of India; Biodiversity patterns and global biodiversity hot spots India as a mega-biodiversity nation; Endangered and endemic species of India• Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological• invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity. Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and• Informational value. **(8 lectures)** **1 lecture per week field trip/ presentation**	-do-

The tentative date of assignment/test/project

Assignment: 15 March 2016

Test/ Presentation: 25 February 2016