

Lesson Plan

Name of Faculty-Dr. Rajbala

Designation – Asstt. Professor

Deptt.-Applied Science

Duration -10 January -25 April 2018.

Subject – Environment Studies (**GES 106 F**)

Duration	Theory Topics	
1 st Week	1 st Lect.	Definition of Environment. Multidisciplinary nature of Env. Studies, Scope of Env. Studies
	2 nd Lect.	Importance of Environment.
	3 rd Lect.	Need for public Awareness
2 nd Week	1 st Lect.	Renewable and Non-Renewable resources
	2 nd Lect.	Forest resources, Water resources, Mineral Resources.
	3 rd Lect.	Food Resources, Energy Resources
3 rd Week	1 st Lect.	Land Resources
	2 nd Lect.	Concept of Ecosystem, Types , components of ecosystem, Energy and Function of ecosystem
	3 rd Lect.	Energy flow &Productivity, Ecological Succession.
4 th Week	1 st Lect.	Grassland Ecosystem, Forest Ecosystem
	2 nd Lect.	Desert Ecosystem, Aquatic Ecosystem
	3 rd Lect.	Introduction of Biodiversity, Genetic, Species and Ecosystem Diversity.
5 th Week	1 st Lect.	Biogeographically classification of India, Value of Biodiversity .,Global, national biodiversity
	2 nd Lect.	India as mega diversity Nation, Local or regional Value ,Hot spot of Biodiversity
	3 rd Lect.	Threats to biodiversity, habitat loss, poaching of wild life
6 th Week	1 st Lect.	Man vs wild life conflict and endanger and endemic species of India, Conservation of biodiversity
	2 nd Lect.	Cause and classification of air pollutants Effect of gaseous pollutant,

		effect of hydrocarbons
	3 rd Lect.	Water pollution and pollutants
7 th Week	1 st Lect.	Soil pollution ,sanitary land filling, Marine Pollution
	2 nd Lect.	Noise pollution and Thermal Pollution
	3 rd Lect.	Nuclear Pollution, Solid waste management, Case studies
8 th Week	1 st Lect.	Disaster, Earthquakes
	2 nd Lect.	Landslide and Cylcone, Case studies
	3 rd Lect.	Social issue, Water conservation, Rain water harvesting ,acid rain
9 th Week	1 st Lect.	Climate change, Ozone Layer, Global warming
	2 nd Lect.	Environment Act, Wild Life Act
	3 rd Lect.	Air act 1981, Water Act 1974
10 th Week	1 st Lect.	Human population and Environment
	2 nd Lect.	Human Rights
	3 rd Lect.	Women and Child welfare

Name of Faculty-Dr. Sanjay Gupta

Designation - Professor

Deptt.-Applied Science

Duration -10 January -25 April 2018.

Subject-Physics-II (PHY-102F)

	Theory Topics	
1 st Week	1 st Lect.	Space Lattice, Unit cell and translation vector, Miller indices, simple crystal st., Laue's treatment to Bragg's Law
	2 nd Lect.	Powder method, Point defects in solids
	3 rd Lect.	Schottky and Frenkel defects
2 nd Week	1 st Lect.	Bonding in solids, Ionic and covalent bonds
	2 nd Lect.	Difficulties with classical physics, introduction to quantum mechanics, simple concept, black body radiation
	3 rd Lect.	Discovery of planks constant, Phase velocity and Group Velocity.
3 rd Week	1 st Lect.	Schrodinger wave equation-time dependent and independent
	2 nd Lect.	Expectation values and Ehrenfest Theorem
	3 rd Lect.	Particle in one dimension box, Quantum statistics
4 th Week	1 st Lect.	Bose Einstein and Fermi Dirac Statistics
	2 nd Lect.	Elementary ideas of Quark, gluons and hadrons
	3 rd Lect.	Features of Nano system, concept of quantum size effects,
5 th Week	1 st Lect.	Quantum dots and their applications
	2 nd Lect.	Elements of classical free electron theory and limitations
	3 rd Lect.	Drude theory of conduction, Quantum theory of free electrons
6 th Week	1 st Lect.	Fermi level and density of states, FERMI Dirac distribution function
	2 nd Lect.	Thermionic emission and Richardson's equation
	3 rd Lect.	Origin of energy bands, Kronig Penny model
7 th Week	1 st Lect.	E-K Diagrams, Brillouin Zones

	2 nd Lect.	Concept of effective mass and holes, Classification of solids-Metals, insulators, semiconductors
	3 rd Lect.	Fermi Energy and variation in Temp.
8 th Week	1 st Lect.	Hall Effect and its application
	2 nd Lect.	Photo conductivity in insulating conductor, Variation with illumination
	3 rd Lect.	Effect of traps, Application of Photoconductivity
9 th Week	1 st Lect.	Photovoltaic cells, solar cell, and its characteristics
	2 nd Lect.	Atomic magnetic moments, types
	3 rd Lect.	Orbital diamagnetism
10 th Week	1 st Lect.	Classical theory of Para magnetism
	2 nd Lect.	Classical theory of Ferromagnetism
	3 rd Lect.	Molecular field and domain Hypothesis

Name of Faculty-Dr. Rashmi Gupta

Designation - Professor

Deptt.-Applied Science

Duration -10 January, 2018 -10 May, 2018.

Subject- Mathematics (**Math 102F**)

	Theory Topics	
1 st Week	1 st Lect.	Exact differential Equation.
	2 nd Lect.	Equation reducible to exact differential equations
	3 rd Lect.	1 st order and 1 st Degree to simple electric circuit
		Newton law of cooling ,heat flow and orthogonal trajectories
2 nd Week	1 st Lect.	Linear differential equation of second and higher order
	2 nd Lect.	Complete solution. complimentary function and particular integral
	3 rd Lect.	Method of variation of parameters to find particular integral
	4 th Lect.	Cauchy and Legendre's equation
3 rd Week	1 st Lect.	Simultaneous linear equation with constant coefficients
	2 nd Lect.	Application of linear differential equation to simple pendulum
	3 rd Lect.	Application of linear differential equation to oscillatory electric circuit
	4 th Lect.	Differentiation of vectors, scalar vector point function , .
4 th Week	1 st Lect.	Gradient of scalar field and directional derivatives
	2 nd Lect.	Divergence of vectors field
	3 rd Lect.	Curl of vector filed
	4 th Lect.	Integration of vectors, Line integral
5 th Week	1 st Lect.	Surface integral
	2 nd Lect.	Volume integral
	3 rd Lect.	Green Theorem
		Stoke Theorem
6 th Week	1 st Lect.	Gauss Theorem

	2 nd Lect.	Laplace transform of elementary function,
	3 rd Lect.	Properties of Laplace transform,
	4 th Lect.	Transform of derivatives, Transform of Integrals
7 th Week	1 st Lect.	Multiplication by t^n , division by t
	2 nd Lect.	Evaluation of integrals by Laplace transform
	3 rd Lect.	Laplace transform of unit step function and periodic function
	4 th Lect.	Inverse transforms
8 th Week	1 st Lect.	Convolution theorem
	2 nd Lect.	Application to linear differential equations
	3 rd Lect.	Simultaneous linear differential equations with constant coefficient
	4 th Lect.	Simultaneous linear differential equations with constant coefficient
9 th Week	1 st Lect.	Formation of partial differential equations
	2 nd Lect.	Lagranges linear partial differential equations
	3 rd Lect.	First order non-linear partial differential equations
	4 th Lect.	First order non-linear partial differential equations
10 th Week	1 st Lect.	Charpits method
	2 nd Lect.	Homogenous linear partial differential equations
	3 rd Lect.	Non- Homogenous linear partial differential equations
	4 th Lect.	Methods of separation of variables
11 th Week	1 st Lect.	Application to wave equation
	2 nd Lect.	Application to one dimensional heat equation
	3 rd Lect.	Application to two dimensional heat equation
	4 th Lect.	Application to two dimensional heat equation

Name of Faculty-Dr. Rashmi Gupta

Designation -Professor

Deptt.-Applied Science

Duration -10 January, 2018 -10 May, 2018.

Subject- **Numerical Method(MATH 204F)**

	Theory Topics	
1 st Week	1 st Lect.	Newton Forward and backward interpolation formula
2 nd Week	1 st Lect.	Bessel , stirlling, newton divided difference interpolation formula
3 rd Week	1 st Lect.	Bisection regula falsi, secant method to solve non linear equation
4 th Week	1 st Lect.	Fixed point method ,Newton Raphson method to solve non linear equation
5 th Week	1 st Lect.	Gauss elimination and Gauss Jordan Method to solve simultaneous linear equation
6 th Week	1 st Lect.	Jacobis and Gauss seidal method to solve simultaneous linear equation
7 th Week	1 st Lect.	Trapezoidal ,Simpsons one third and three eighth rule
8 th Week	1 st Lect.	Bools and Weddle rules
9 th Week	1 st Lect.	Taylor ,Eulers and Modified Euler's Method to solve ordinary differential Equation
10 th Week	1 st Lect.	Runge and Runge kutta Method to solve ordinary differential Equation
11 th Week	1 st Lect.	Predictor –Corrector method to solve ordinary differential Equation
12 th Week	1 st Lect.	Solution of Laplace Equation (Partial Differential Equation)