GOVT. P.G. COLLEGE FOR WOMEN, SECTOR-14, PANCHKULA

LESSON-PLAN (Session 2024-25) EVEN SEMESTER

Name of Teacher: **Dr Surender Singh**

Designation: **Professor**

Class: **MSc 4th Sem**

Subject/ Paper: **Environmental Toxicology**

S. No.	Month	Topics to be covered	Teaching Learning Strategy	Learning Outcomes of Students	Remarks
1.	January 2025	Introduction to Environmental Toxicology. Toxic agents:	Group Learning & Teaching	Students will be able to get basic knowledge of Environmental Toxicology	
2.	February 2025	Toxicant uptake Xenobiotics	Group Learning & Teaching	Students will be able to study various ways of toxicant uptake and xenobiotics	
3.	March 2025	Food additives, air, water and soil pollutants and Bioindicators. Effect of pollutant on ecosystem Solid waste management	Group Learning & Teaching	Students will be able to study varous food additive, pollutants, Bioindicators and Solid waste management	

4.	**April & May2025**	**Bioremediation, its role and significance.** **Toxicological risk assessment** **Systematic toxicology.** **Genotoxicology** **Applications of toxicology** **Human toxicology and medicinal ethics.**	**Group Learning & Teaching**	**Students will be able to study Bioremediation, Genotoxicology**	

- **Seminar/Presentation/Assignment/Quiz/Class Test /Mid-Term Exam will be taken as per schedule.**

Signature of Teacher **Principal**

GOVT. P.G. COLLEGE FOR WOMEN, SECTOR-14, PANCHKULA

LESSON-PLAN (Session 2024-25) EVENSEMESTER

Name of Teacher: Ms. Bindu

Designation: Assistant Professor

Class:M.Sc II (Mathematics)

Subject/ Paper: MM-510 (opt. i) Fluid Mechanics –II

S. No.	Month	Topics to be covered	Teaching Learning Strategy	Learning Outcomes of Students	Remarks
1.	January	Fundamental Equations: Derivation of the equations of continuity and equation of motion in cylindrical and spherical coordinates. Two–dimentional inviscid incompressible flows, Stream function : Irrotatonal motion in two dimensions. Complex velocity potential. Sources, sinks, doublets and their images. Thomson circle theorem. Two- dimensional irrotational motion produced by motion of circular cylinder.	**Group- Learning and Teaching**	To understand Fundamental Equations, Stream function and its applications.	
2.	February	Two dimensional motion : Motion due to elliptic cylinder in an infinite mass of liquid, Kinetic energy of liquid contained in rotating elliptic cylinder, circulation about elliptic cylinder. Theorem of Blasius. Theorem of Kutta and Joukowski. Kinetic energy of a cyclic and acyclic irrotational motion. Axisymmetric flows, Stoke's stream function ,Stoke's stream functions of some basic flows.	**Group- Learning and Teaching**	To discuss Motion due to elliptic cylinder in an infinite mass of liquid, Kinetic energy of liquid contained in rotating elliptic cylinder, circulation about elliptic cylinder. Theorem of Blasius and its applications.	

3.	**March**	Three –dimentional motion : Motion of a sphere through a liquid at rest at infinity. Liquid streaming past a fixed sphere. Equation of motion a sphere. Alembert's paradox, impulsive motion, initial motion of liquid contained in the intervening space between two concentric spheres. Vortex motion and its elementary properties. Kelvin's proof of permanence. Motions due to circular and rectilinear vortices. Infinite rowes of line vortices.	**Group- Learning and Teaching**	To Study Motion of a sphere through a liquid at rest at infinity. Liquid streaming past a fixed sphere. Equation of motion a sphere. Alembert's paradox, impulsive motion, initial motion of liquid contained in the intervening space between two concentric spheres.	
4.	**April**	Dynamical similarity . Buckingham pi- theorem , Reynolds number. Prandtl's boundary layer, boundary layer equations in two dimensions. Blasius solution Boundary layer thickness. Displacement thickness, Karman integral conditions, separation of boundary layer.	**Group- Learning and Teaching**	To Learn Dynamical similarity . Buckingham pi-theorem , Reynolds number. Prandtl's boundary layer, boundary layer equations in two dimensions. Blasius solution Boundary layer thickness. Displacement thickness, Karman integral conditions, separation of boundary layer.	

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Signature of Teacher **Principal**

GOVT. P.G. COLLEGE FOR WOMEN, SECTOR-14, PANCHKULA

LESSON-PLAN (Session 2024-25) EVENSEMESTER

Name of Teacher: Kiran Bala

Designation: Assistant Professor

Class:M.Sc II (Mathematics)

Subject/ Paper: MM-509 (opt. i) Mechanics of Solids

S. No.	Month	Topics to be covered	Teaching Learning Strategy	Learning Outcomes of Students	Remarks
1.	January	Two dimensional problems : Plane stress. Generalized plane stress. Airy stress function. General solution of biharmonic equation, Stresses and displacements in terms of complex potentials. The structure of functions of $\phi(z)$ and $\psi(z)$. First and second boundary-value problems in plane elasticity. Existence and uniqueness of the solutions.	**Group- Learning and Teaching**	To understand stress tensor and to solve First and second boundary-value problems in plane elasticity. Existence and uniqueness of the solutions.	
2.	February	Waves : Propagation of waves in an isotropic elastic solid medium. Waves of dilatation and distortion. Plane waves. Elastic surface waves : Rayleigh waves and Love waves. Extension : Extension of beams, bending of beams by own weight and terminal couples,; bending of rectangular beams	**Group- Learning and Teaching**	To discuss plane wave and Surface Wave Propagation in an isotropic elastic solid medium.	

3.	**March**	Torsion : Torsion of cylindrical bars; Torsional rigidity. Torsion and stress functions. Lines of shearing stress. Torsion of anisotropic beams; Simple problems related to circle, ellipse and equilateral triangle.	**Group- Learning and Teaching**	To Study Torsion and to solve simple problems related to circle, ellipse and equilateral triangle.	
4.	**April**	Variational methods : Theorems of minimum potential energy. Theorems of minimum complementary energy. Reciprocal theorem of Betti and Rayleigh. Deflection of elastic string cental line of a beam and elastic membrane. Solution of Euler's equation by Ritz, Galerkin and Kantorovich methods.	**Group- Learning and Teaching**	To Learn variational methods to solve boundary Value problems in in elasticity. Learn to prove standard theorems related to theory ofvariational problems and to apply these techniques/methods by minimizing the potential / strain / complementary energies to solve scientific problems in mechanics ofsolids and get exposed to research problems in the field ofelasticity. Also to understand phenomenon of wave propagation in infinite elastic medium.	

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