

**ENVIRONMENTAL SCIENCE**  
**VII SEMESTER**  
**(For Research with Honours courses)**

**COURSE CODE: EVSR3722M**

**COURSE TYPE: MAJOR**

**COURSE TITLE: Laboratory Course-I (64 hours)**

**CREDITS: 4**

1. Construction of a simple compartment model (e.g., pollutant transport in a lake or river).
2. Lotka–Volterra predator–prey modelling with time-series.
3. Modelling interspecific interactions – competition and mutualism models.
4. Nutrient cycling model (carbon or nitrogen flows in a simple ecosystem).
5. Forest ecosystem modelling – biomass growth and regeneration dynamics.
6. Gaussian plume model for predicting pollutant dispersion in air.
7. Global change modelling case studies – effect of temperature rise or CO<sub>2</sub> on crop yield/carbon balance.
8. Preparation of a checklist for EIA of a small developmental project (e.g., highway, dam, industry).
9. Screening and scoping exercise for a proposed project using EIA Notification 2006 guidelines.
10. Baseline data collection methods – design of sampling strategies for air, water, soil, and noise.
11. Air quality prediction using Gaussian plume model for an industrial stack emission scenario.
12. Ecological impact assessment – methods for biodiversity survey and habitat evaluation.
13. Social impact assessment (SIA) exercise – preparation of a socio-economic survey questionnaire.
14. Environmental management plan (EMP) preparation for a small project (e.g., solid waste management facility).