

Green Belt Development for Smart Cities

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution Of The Course | | | Eligibility Criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Green Belt Development for Smart Cities | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning objectives:

- To introduce students with one of the key green skill development programs under the Skill India mission by the Government of India.
- To acquaint students with various methods and techniques used in development of green infrastructure for smart cities

Learning Outcomes:

After completion of the course, students will be able to:

- measure factors (biotic and abiotic) contributing to sustainable, healthy environment.
- Assess, describe and use the appropriate plants for restoring polluted environment.
- use their skills enhancing for green infrastructure development (UN-SDG).

Syllabus

Practical:

1. Methods of vegetation sampling and calculation of importance value index 4 hours
2. Measuring Tree Basal Area, Height and Canopy Cover to estimate green cover of an area.
8 hours
3. Understanding of Instruments for measuring microclimatic variables viz., light, wind, temperature, humidity and precipitation 4 hours
4. Estimation of Total Carbon stock of an area. 8 hours
5. Understanding methods for selection of plants according to pollutant load of both air and water (includes field survey) 4 hours

6. Assessing air pollution tolerance of plant species using APTI (Air pollution tolerance index). 8 hours
7. Use Open Source Softwares for mapping the GPS points and generating a cover map. 4 hours
8. Measurement of Dissolved Oxygen (DO) from treated wastewater. 8 hours
9. Measurement of BOD and TDS from tank and treated pond. 8 hours
10. Determination of total dissolved and suspended solids in water. 4 hours

Essential Readings:

1. Bell, J. R., Wheater, C. P., Cook, P. A., Bell, J. R., Wheater, C. P., Cook, P. A. (2011). Practical Field Ecology: A Project Guide. United Kingdom: Wiley.
2. Singh J.S., Singh S.P. & Gupta S.R. · 2014. Ecology, Environmental Science & Conservation. (2014). India: S. Chand Pvt. Limited.
3. Measurements for Estimation of Carbon Stocks in Afforestation and Reforestation Project Activities under the Clean Development Mechanism, A field Manual UNFCCC.
4. Slingsby, D., Cook, C., Slingsby, D., Cook, C. (2016). Practical Ecology. United Kingdom: Macmillan Education UK.
5. Mukerji, K. G. (2013). Laboratory Manual of Food Microbiology. India: I.K. International Publishing House Pvt. Limited.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.