Co-funded by the
Erasmus+ Programme
of the European Union

ECOL 485:
Ecology of Urban Environment

Course Teacher

Dr. Gurjeet Kaur

Dept. of Ecology & Environmental Sciences

Pondicherry University

Puducherry, India

Pondicherry University, India

Co-funded by the
Erasmus+ Programme
of the European Union

Content

Pondicherry University, India

Co-funded by the
Erasmus+ Programme
of the European Union

1. General Information

Course Code	:	ECOL - 485
Course Title	:	Ecology of Urban Environment
Number of Credits	:	3.0 ECTS
Course duration	:	18 Weeks
Level	:	Postgraduate
Course Teacher	:	Dr. Gurjeet Kaur
Prerequisite	:	Basic understanding on environmental studies (school higher level), English language skill.

Pondicherry University, India

Co-funded by the
Erasmus+ Programme
of the European Union

2. Course description

This course provides students an in-depth theoretical knowledge on the interaction of between humans and their surroundings such as construction, housing, transport, etc. It will make students understand the impact of urbanization on various natural resources. It will also emphasis the need for maintaining urban biodiversity.

Pondicherry University, India

Co-funded by the
Erasmus+ Programme
of the European Union

3. Course goals

This course aims to provide students an overall understanding of the complex urban environment and its dynamics in response to human's actions. The objectives of the course are to introduce the importance of urban ecology and urban environment in the light of human health, to familiarize urbanization and its impacts on the natural resources, to introduce connection between urban greeneries and sustainable development goals, to explain the carbon and water cycle in urbanization, to elucidate the role of peri-urban environment in urbanization, to introduce the concept of green city, green building in the light of ecosystem services.

Pondicherry University, India

4. Course outcome

By the end of the course, successful students will:

1. know about ecology of urban environment and the role of humans in urban ecology

2. be familiar with the role of urban environment on human health

3. be aware of the impacts of urbanization on the urban vegetation and aquatic habitats

4. know the potential of urban forestry and its role on sustainable development goals

5. be able to design urban forestry

6. be acquainted with response of urbanization at the community and ecosystem level

7. be familiar with the carbon cycle and water cycle in the urban environment.

8. know about indoor and outdoor air pollutions and health inequities in cities

9. be aware of the need for maintain the urban biodiversity for healthy living

5. Course structure

5.a. Course Content

Week - 1	Introduction to urban ecology
Week - 2	Urban environment and human well being
Week - 3	Urbanization and primary physical process
Week - 4	Impacts of urbanization on natural resources
Week - 5	Urban forestry and sustainable development
Week - 6	Community and ecosystem level response to urbanization
Week – 7	Niche theories and urban ecology
Week – 8	Habitat models and ecological guilds
Week – 9	Carbon and water cycle
Week – 10	Urban sprawl and neighborhood disorders
Week – 11	Air pollution and health inequities
Week – 12	Peri-urban environment, diversity and invasion
Week – 13	Ecosystem services in cities
Week – 14	Urban ecology and urban planning
Week – 15	Green city, green building concepts and landscape connectivity

Co-funded by the
Erasmus+ Programme
of the European Union

5. Course structure

Understanding the concept of urban ecology and its importance for sustainable urban environment for human health and well being

5.b. Mode of delivery

In-Class Lectures

On-line Lectures

Students will get enrolled in Google classroom

And online classes will be conducted if covid -19 conditions do not permit to conduct off-line classes

Pondicherry University, India

5. Course structure

5.c. In-class discussion

Understanding the process of urbanization in India and its impact on the natural resources

5.d. In-class assignments & field assignment

Understanding the role of various natural resources in urban environment. Understanding the impact of urban sprawl on vegetation, water body and vacant land

5.e. Reading and discussion of assigned papers for seminars

Understanding the concept of green cities, green building towards achieving sustainable development goals and health living

5.f. Group project presentation

Ability to make presentation, effective communication, critical interpretation of data, response to audience

6. Course Assessment

Type of assessment	Percentage of Marks
In-class discussion	5
Assignment	5
Seminars	10
Group projects	10
Internal assessment test (MCQ types)	10
Final assessment	60
Total	**100**

7. References

1. Kristen, MP, 2016, Ecology of Urban Environments, Wiley-Blackwell publications, USA.
2. Forman RTT, 2014, Urban Ecology: Science of Cities, Cambridge University Press,
3. Carreiro, MM, Song, YC, Wu, J., 2008, Ecology, planning, and management of Urban forests, Springer Publisher.
4. McCleery, RA, Moorman, CE, Peterson, MN, 2014, Urban Wildlife Conservation Theory and Practice, Springer Publisher.
5. Hall, P, 2020, Urban and Regional Planning 6th Ed. Taylor & Francis Ltd