PhD course: *Urban Ecology* (3ECTS)

**Prerequisites**
Accepted to PhD education in Biology, Landscape planning or Rural development or similar

**Objectives and aims**
To learn ecological theories and concepts of relevance for urban areas. To compare perspectives on urban green areas and biodiversity from ecology, landscape planning, landscape architecture and design. An important aim is to bridge the gaps between ecologists, landscape architects and physical planners. The course will cover the following themes:
- Urban biodiversity and ecosystem services
- Urban areas in the landscape – interdependences between urban and rural biodiversity
- Spatial planning of urban areas for biodiversity
- Adaptation of plants and animals to urban environments
- Green infrastructure in practice – assessing connectivity in urban areas

**Intended learning outcomes:**
After the course, the student is expected to be able to:
- Urban biodiversity and ecological design
- Discuss urban biodiversity and ecosystems from different spatial-, temporal-, scales and demographic perspectives.
- Understand how urban ecosystems and organisms in urban areas interact with the surrounding landscape such as urban green and waters
- Understand how organisms are adapting to urban environments
- Apply ecological knowledge in urban landscape planning – provide examples of how theory is implemented in cities.

**Content**
The course will consist mainly of lectures and seminars lead by researchers from different departments within SLU (primarily Department of Ecology and Department of Urban and Rural Development). The course will also contain lectures by at least one invited external expert lecturer, demonstrations in the field, as well as individual assignments.

**Pedagogical form**
Lectures, seminars, exercises including a written assignment.
Course plan Urban Ecology

Teachers

Mia Agvald Jägborn, Uppsala Municipality
Jan Bengtsson, Dept. of Ecology, SLU
Malin Björk, Head of Nature Conservation at Örebro Municipality, (excursion to Örebro)
Yang Fengping, Dept. of Rural Development, SLU
Dagmar Haase, Humboldt University, Germany and SLU
Marcus Hedblom, Dept. of Ecology, SLU
Maria Ignatieva, Dept. of Rural Development, SLU and University of Western Australia
Tomas Pärt, Dept of Ecology, SLU
Sara Ryttar Uppsala Municipality
Göran Thor, Dept. of Ecology, SLU

Literature: Scientific papers delivered before the start of the course.

Requirements for examination
To pass the course and acquire the course credits (3 ECTS) the student should actively participate in all lectures and seminar discussions. At the end of the course the students need to (individually or in groups) hand in a written assignment.

Time table
24th of September 2018- 3rd of October 2018, and additional 3 days for the assignment.

Apply no later than the 24th of August by sending an e-mail to Marcus Hedblom (marcus.hedblom@slu.se). Maximum number of participants is 20.

Organizers: Marcus Hedblom (marcus.hedblom@slu.se) and Erik Öckinger (erik.ockinger@slu.se), Department of Ecology, SLU in collaboration with the research school Ecology – basics and applications.
Schedule PhD- course in Urban Ecology 2018 in Uppsala, Sweden (3ECTS)

24th September. Introduction to the course.
1) The course and objectives and practical stuff (Fil. Dr. Marcus Hedblom; SLU and Professor Maria Ignatieva; SLU and University of Western Australia)
2) Theory about Urban Ecology (Marcus Hedblom)
3) Transdisciplinary (Maria Ignatieva)

25th September. Theory and field walk
9-12. Urban densification (Professor Dagmar Haase; Humboldt University, Germany)
13-17. Field walk. Walking to the new highly densified area Rosendal in Uppsala guided by Uppsala municipality. Sara Ryttar and Mia Agvald Jägborn

26th September. Theory
9-12. Urban biodiversity and design. (Maria Ignatieva)
13-15. Lawns in China (PhD, student. Yang Fengping; SLU)

27th September. Theory
9-12. Importance of dead and dying trees and lichens in Urban areas. (Professor Göran Thor; SLU).
13-16. Biodiversity and Health in urban areas (Marcus Hedblom)

28th September. Theory
9-12. Effects of predation, food and nesting places of birds – urban and rural examples from Poland (Professor Tomas Pärt; SLU)
13-15. Ecosystem services in urban areas, linking social and natural sciences (Professor Jan Bengtsson; SLU).

30th September. Travel to the city of Örebro (Sunday Afternoon)

1st October. Field
8.30- 15. See different projects in Örebro. Malin Björk (Head of Nature Conservation)

2nd October. Theory
Discussing assignments and common article. End course.

3rd October.
Discussing assignments and common article. End course.