

Course Change Request

New Course Proposal

Date Submitted: 12/18/19 11:02 am

Viewing: **EVPP 544 : Urban Ecosystems and Processes-Lab/Fields**

Last edit: 12/18/19 11:02 am

Changes proposed by: slister1

In Workflow

1. **ESP Chair**
2. **SC Curriculum Committee**
3. SC Associate Dean
4. Assoc Provost-Graduate
5. Registrar-Courses
6. Banner

Approval Path

1. 12/18/19 11:24 am
A. Alonso Aguirre (aaguirr3):
Approved for ESP Chair

Are you completing this form on someone else's behalf?

No

Effective Term: Fall 2020

Subject Code: EVPP - Environmental Science & Policy

Course Number:
544

Bundled Courses:

Is this course replacing another course? No

Equivalent Courses:

Catalog Title: Urban Ecosystems and Processes-Lab/Fields

Banner Title: Urban Ecosystems Processes Lab

Will section titles vary by semester? No

Credits: 1

Schedule Type: Laboratory

Hours of Lab or Studio per week: 3

Repeatable: May only be taken once for credit (NR)
GRADUATE ONLY

Default Grade Mode: Graduate Regular

Recommended Prerequisite(s):

CHEM 211 or 213 General Chemistry, Math 113 (calculus) or equivalent, BIOL 307 or EVPP 302, PHYS 243 or EVPP 542 or equivalent. In case of not meeting prerequisite requirements permission of instructor is required to take the course.

Recommended Corequisite(s):

**Required
Prerequisite(s) /
Corequisite(s)
(Updates only):**

Registrar's Office Use Only - Required Prerequisite(s)/Corequisite(s):

And/Or	(Course/Test Code	Min Grade/Score	Academic Level)	Concurrency?

**Registration
Restrictions
(Updates only):**

Registrar's Office Use Only - Registration Restrictions:

- Field(s) of Study:**
- Class(es):**
- Level(s):**
- Degree(s):**
- School(s):**

**Catalog
Description:**

The course describes general ecosystem ecology for engineered ecosystems along with review on urban metabolisms of energy, water, soil, and foods with cultural and historical context. Especially, the course focuses on urban water and soil issues that are critical in urban ecosystem functioning involving streams, rivers, and wetlands. The course also aims to review and discuss numerous cases of urban coupled natural and human (social) processes and their relationship with design elements that can be incorporated into creating functional urban landscape (e.g., green infrastructure). The course will engage students in studying up-to-date information on green infrastructure implementation and applications through field trips. The course provides students with an introduction of systemic, interdisciplinary approach on designing and managing urban ecosystems. The course will involve field/design work on a specific theme for each semester it gets taught.

Justification:

The reason is to split the existing EVPP 542 four-credit course into two (three-credit lecture and one-credit lab/field) so that the course lecture portion (three-credit) can be listed as a course for the new Graduate Certificate in Environmental and Sustainability Management. EVPP 544 is the proposed one-credit lab part of the course.

**Does this course cover material which
crosses into another department?** No

Learning Outcomes:

- 1) A firm grasp of ecological principles for the built environment by studying relevant contemporary issues through peer-reviewed journal articles and other literature;
- 2) An understanding of ecological processes to create and restore ecosystem services with water, energy, and food and/or;
- 3) Designing and conducting a small-scale ecological experiment/project on the campus or in local areas throughout the semester with a relevant theme

Attach Syllabus

[EVPP 544 LabFields syllabus.pdf](#)

Additional Attachments

Staffing:

Dr. Changwoo Ahn will teach this class.

Relationship to Existing Programs:

Part of SC-MS-EVSP program

Relationship to Existing Courses:

Modification to existing EVPP 542 class

Additional Comments:

Reviewer Comments

Urban Ecosystems and Processes-Lab/Fields

INSTRUCTOR:	Dr. Changwoo Ahn Professor of Environmental Science and Policy
OFFICE:	3034 David King Hall (office hour: by appointment)
PHONE:	(703) 993-3978
E-MAIL:	cahn@gmu.edu
WEBSITE:	http://www.changwooahn.com
CLASS TIME:	Fields/Lab: Saturday 10:30AM-1:10 PM
CLASS LOCATION:	IN205/EXPL L502/Ahn Mesocosm Compound/Field Sites
CREDIT HOURS:	1

PREREQUISITE: CHEM 211 or 213 General Chemistry, Math 113 (calculus) or equivalent, EVPP302, PHYS 243 or EVPP 542 or equivalent. In case of not meeting prerequisite requirements permission of instructor is required to take the course. Please see me if you have any questions concerning this. EVPP 542 is not a co-requisite to take this course.

COURSE DESCRIPTION:

This undergraduate/graduate course will provide an overview and introduction of challenges and opportunities we face in urban environments. The course will engage students in studying up-to-date information on green infrastructure implementation and applications that focus on urban water and soil management through numerous field trips. The course provides students with real world cases or examples of designing and managing urban ecological processes. The course will involve field work and/or case studies on a specific theme for each semester it gets taught. This is not one of those conventional courses the majority of whose activities occurs in a classroom setting.

COURSE OBJECTIVES: the course is intended to involve students in:

- 1) A firm grasp of ecological principles for the built environment by *studying* relevant contemporary issues through peer-reviewed journal articles and other literature;
- 2) An understanding of ecological processes to create and restore ecosystem services with water, energy, and food and/or;
- 3) Designing and conducting a small-scale ecological experiment/project on the campus or in local areas throughout the semester with a relevant theme

TEXTBOOK

Robert I. McDonald. 2015 Conservation for Cities – How to plan & build natural infrastructure. Island Press

RECOMMENDED TEXT

Kate Orff SCAPE2016. Toward an Urban Ecology. The Monacelli Press –Examples of “Engage” in the learning of your city as a place

Frederick R. Alder and Colby J. Tanner, 2013. Urban Ecosystems –Ecological Principles for the Built Environment

Travis Beck.2013. Principles of Ecological Landscape Design. Island Press (PDF available)

COURSE POLICY AND EXPECTATIONS: Class attendance is strongly recommended. Be punctual. Lateness is disruptive and disrespectful to your peers and to me. There will be strong emphasis on active and effective **participation** in class discussions, not only during the class presentations and discussion periods following these presentations, but also throughout all the other class periods. I expect each of you to be present and prepared for each class. *Academic dishonesty* will not be tolerated (honor code responsibilities). *Minor changes in course organization and content* may be required throughout the semester, thus students will be made aware and asked for input if such actions are needed. Late assignments will not be accepted.

LET ME KNOW if you have any documented learning or other disability and wish to discuss academic accommodations. The Disability Resource Center can also help you or direct you toward help with a wide range of learning, studying, mental health, career, and physical disability issues (located in Student Union Building I, Room 2500; Tel: 703- 993-2474; <http://ods.gmu.edu/>).

CLASS E-MAIL AND COMMUNICATING WITH ME:

I will frequently e-mail to remind you of deadlines or to clarify points from a lecture. Please use GMU e-mail (**@gmu.edu) to facilitate any communication or discussion. Please check your e-mail **daily**. When you email your assignments be sure to label your file with your last name, date, and course number (e.g., ahn0205-490). If you email a question of general interest, I will likely send my response to the entire class list. Be sure to take full advantage of your classmates, the library, and the web as learning resources. Finding answers and solutions among yourselves by tapping into the multitude of resources available to you is generally a more gratifying and educationally valuable approach than seeking answers from a single authority.

LABS & FIELD TRIPS:

Students are required to participate in scheduled field trips and fieldworks, and to do lab assignment as necessary. Field trips are usually scheduled for Saturdays 10:30 AM – 1:10 PM and on-campus lab sessions for Saturdays the same time. Based upon previous experience field trips to the locations may end by around 12:45 PM, but some field trips may take longer than the regular class hour. Instructor will discuss about each field trip before they occur. Additional work in any of lab or fields should be arranged with both Dr. Ahn and Dr. Ahn’s designated graduate student (TA) as necessary for your class project. Limited yet laboratory space for your class project work, if needed, can be made available in Ahn Wetland Ecosystem Lab (3071 and 3079a David King Hall). Coordination with Dr. Ahn on lab and equipment use is imperative.

Most field trips involve visiting green buildings, homestead, and green infrastructure sites, which may involve walking on fields, so you may want to wear shoes that can get wet or soiled. Transportation will not be provided for local field trips, car-pooling is strongly recommended.

The cost of food (water and lunch) and your share of the transportation costs (i.e., gas) are at your own expense.

Also needed for field trips may include field notebook (e.g., paper or electronic –phone, pads), camera (or your smartphone that can take pictures and videos), pencil, calculator and/or just your smartphone with photo-taking capacity. Old clothes and boots/shoes for fieldwork, rain gear upon weather conditions may be needed in some situations.

LAB REPORT

Each field lab will require a short written report with photos and videos incorporated when possible (~ 1000 words limit with photos/videos incorporated) that will be due by next field/lab session. You generally create a blog post for each field trip. We will discuss more about it during the class, but photo journal documentation is strongly recommended with well-summarized and edited wording. Specific instruction will be provided for each field trip with addresses and directions for the locations prior to the trip

GRADING: (subject to minor changes)

Field-Lab work and participation (I/G)	30
Fields/Lab report	50
Homework	20
TOTAL POINTS	<u>100</u>

Your course will be determined using the following straight scale: A (94-100), A- (90-93), B+(86-89), B (80-85), C (70-79), F (< 70)

Failure to meet deadlines for reading assignment and final paper submission will result in losing 5% of total points for letter grade. * **Please note that there will be occasional small assignments throughout the semester.**

LAB/FIELD COURSE SCHEDULE (subject to minor change)

Date	Locations	Topics and activities
Sep 2		Course orientation, groups, literature resource review
Sep 9		Overview of urban ecosystems and ecological processes, groups for final projects
Sep 16	Ahn Mesocosm Compound, <u>Lab report 1</u>	(building an urban green space/garden)
Sep 23		Engineered beaver wetland, Huntley Meadow Park, Alexandria, VA
Sep 30		Carbon footprint of your household and electricity use, Seeds
Oct 7		DC Green Building Council, <u>Lab report 2</u>
Oct 14		Local wastewater treatment plant, Centerville, VA
Oct 21		Urban Farming – UDC Aquaculture Farm, <u>Lab report 3</u>
Oct 28		Four Mile Run – Urban stream restoration, <u>Lab report 4</u>
Nov 4		Final project design session 1, WaterWASH
Nov 11		A case of green homestead project, Culpeper, VA, <u>Lab report 5</u>
Nov 18		Final project design session 1, Dirt the Movie
Nov 25		No class (Thanksgiving)
Dec 2		Individual or group work on final projects, Biophilic Design
Dec 10		Final presentation

Videos to Watch: Seeds, WaterWASH, Dirt the Movie, Biophilic Design,