

Course Syllabus
University of Kansas
Department of Urban Planning
Spring 2015
Monday and Wednesdays 2:30-3:45 (TBD)
LOCATION: Marvin 308

UBPL 738: Environmental Planning Techniques

Instructor:

Ward Lyles, Assistant Professor of Urban Planning
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OFFICE HOURS: *Monday and Wednesday 1:00-2:30 (TBD)*

Course Summary:

The course covers a variety of topics within environmental planning. Each topic is examined with respect to the scope of the issues, the methods of analyzing and/or measuring those issues, and the ways planners can address those issues in order to avoid or mitigate environmental problems. The main topics will include 1) soils, 2) water and land use, 3) urban ecology, wildlife habitats, and urban biodiversity, and 4) energy, climate change, and natural hazards.

Learning Objectives:

The primary purposes of this course are to:

- 1) Gain an overview of the range of environmental topics and challenges involved in sustainable land use planning;
- 2) Develop familiarity with common principles and datasets used in environmental planning analysis; and
- 3) Apply techniques of environmental analysis to build skills applicable in practice.

Readings:

The required textbook for the course is:

Environmental Land Use Planning and Management, Second Edition, John Randolph. 2012. Island Press: Washington, DC. It is IMPORTANT to get the 2nd edition and not an earlier edition.

All other readings are available through the course blackboard page.

Format:

The format of the course is based on the principles of Team-Based Learning (TBL), which is an approach to collaborative learning that motivates students to hold themselves and each other accountable (see Michaelson, Knight and Fink 2004 for more information). It involves strategically ordered individual work and teamwork with immediate feedback. TBL shifts the focus of classroom time from the instructor conveying course concepts to the **application of course concepts** by student learning teams.

Modules

The course is designed around five modules that address:

1. Environmental Data, Geospatial Analysis and Soils
2. Water and Land Use
3. Urban Ecology, Wildlife Habitats and Urban Biodiversity
4. Energy, Climate
5. Change and Natural Hazards
6. Integration Methods and Synthesis Metrics

Readiness Assurance Process (RAP)

For each of the five modules, students will acquire fundamental knowledge through readings completed before the module begins (Required Readings.) Students will be held accountable for their preparation through the completion of a Readiness Assurance Process (RAP) on the first day of the module. The RAP will proceed as follows:

1. **READING:** Students read required materials prior to class.
2. **INDIVIDUAL READINESS ASSURANCE TEST:** Each student will complete an in-class test with 5-10 multiple-choice questions covering assigned readings. These tests hold students accountable for acquiring foundational knowledge from the readings that will prepare them for team problem solving in subsequent classroom time.
3. **TEAM READINESS ASSURANCE TEST:** Each team will then complete the same test that was completed by individual students. By the time of completion of the team test, every student will know the correct answer to every question.
4. **APPEALS:** Teams will have the opportunity to appeal any question that the team answered incorrectly. (Individuals cannot appeal, nor can teams appeal questions they answered correctly). Time will be allocated for teams to work on the appeals, after which written appeals must be submitted in class that day to the instructor. The instructor will review the appeals and determine whether or not to restore zero, partial, or full credit.
5. **DISCUSSION:** The instructor will facilitate a discussion of test questions that were most problematic for individual students and teams, and of the assigned readings for the day.

In-Class Applications

Following the RAP (which we'll complete at the beginning of each module and also at the end of the semester), the bulk of class time will be used to practice applying knowledge from readings in a series of team application exercises that will require teams to discuss and solve relevant, significant problems. The exercises will be based on the following 4 S's:

1. **SIGNIFICANT PROBLEM:** problems are intended to be interesting and relevant, requiring students to use course concepts to solve them.
2. **SAME PROBLEM:** each team will be given the same problem.
3. **SPECIFIC CHOICE:** each team will be required to make a specific choice among a specified set of solutions.
4. **SIMULTANEOUS REPORT:** each team will report its choice simultaneously for other teams to view.

Following the simultaneous reporting process, time will be allocated for discussion across teams that will center on why teams made the decisions they made, what factors they considered, and what is most important to learn from the exercises. In some cases, teams will be required to submit written products from the exercises for credit. Resources will be made available before many of the exercises and groups may find it beneficial to review the materials before class meets.

Grading:

Grades will be calculated based on the following components.

	Percentage
1) Individual Performance	
a) Class attendance and homework assignments	20%
b) Readiness assurance tests	10%
c) Individual assignments	25%
2) Team Performance	
a) Readiness assurance tests	15%
b) In-class exercises	20%
3) Team Maintenance	
a) Peer Evaluation	15%

Course Assignment Due Dates:

Readiness assurance test dates: 1/28, 2/11, 3/4, 3/30 and 4/13

Assignments due: 2/16, 3/9, 3/27, and 4/13

Incompletes

The Faculty Handbook (F-6) outlines the Grade of Incomplete in the following way:

“The Grade of I should not be used when a definite grade can be assigned for the work done. It shall not be given for the work of a student in any course except to indicate that some part of the work has, for good reason, not been done, while the rest has been satisfactorily completed” (emphasis added).

Academic Misconduct

Students should be aware of the University rules regarding academic misconduct (which includes plagiarism). These may be found at: <https://documents.ku.edu/policies/governance/USRR.htm#art2sect6>

Students with Disabilities

Any student who has a disability that may prevent the fullest expression of abilities should contact me personally as soon as possible so that we can discuss accommodations necessary to ensure full participation and to facilitate the educational opportunity.

Religious Holidays

If any scheduled assignment or exam conflicts with a mandated religious observance, a student should contact me immediately to arrange a make-up assignment or exam on a mutually acceptable date.

KU Writing Center

The KU Writing Center offers a variety of service to help students improve their writing. Check out their web site at: <http://www.writing.ku.edu/>. You can receive peer consulting on your work, as well as on-line feedback to work submitted via email. They are a great resource, so please check them out!

Attendance

In a team-based class, attendance is essential for individual, team, and class success. Because unexpected situations do arise, one unexcused absence will not be penalized. However, an escalating scale will be used for 2, 3 or more absences. That is, the more classes one misses, the greater the deduction on the final grade for each missed class. This policy is used to prevent situations whereby teams cannot function because of individual absences.

Course Schedule:

The following schedule is subject to change. Notification will be provided as soon as possible regarding any changes. Readings in the course schedule are listed before the class period by which they should be completed.

Wed 1-21 Course Overview and Team Formation

Mon 1-26 RAP Practice and Introduction to Environmental Planning Techniques

- Katzenbach, J.R. and D.K. Smith. 2003. The Wisdom of Teams (Chapter 3). New York, NY: Harper Business Essentials.

MODULE 1: ENVIRONMENTAL DATA, GEOSPATIAL ANALYSIS AND SOILS

Topics to be covered in Module 1 include:

1. Geospatial information and analysis
2. Geographic information systems
3. Soil quality and soil surveys
4. Waste management
5. Agricultural lands and food systems

Learning objectives for Module 1 include being able to:

1. Identify the types, formats and sources of geospatial data and analysis;
2. Describe the role of soils in sustainable land use planning, particularly in relation to waste management and agriculture; and
3. Apply techniques of soil analysis for waste management and agriculture.

RAP Readings:

- Randolph Chapter 5: Environmental Data and Geospatial Analysis
- Randolph Chapter 6: Soils, Agriculture, and Land Use

Wed 1-28 Readiness Assurance Process

Mon 2-2 Team Application Exercise: Geospatial Information and Analysis

Wed 2-4 Team Application Exercise – Soils and Waste Management

Mon 2-9 Team Application Exercise – Urban Agriculture

MODULE 2: WATER AND LAND USE

Topics to be covered in Module 2 include:

1. Watersheds and water quantity
2. Water quality
3. Integrated stormwater management
4. Watershed restoration
5. Groundwater and source water protection

Learning objectives for Module 2 include being able to:

1. Identify and describe the role of watershed management for water quantity and quality;
2. Identify and describe key features of integrated stormwater management and watershed restoration;
3. Identify and describe the role of groundwater and source water protection; and
4. Apply techniques for water management in the context of sustainable land use planning.

RAP Readings:

- Randolph Chapter 7: Water and Land Use: Stream Flow, Flooding and Runoff Pollution
- Randolph Chapter 8: Stormwater Management and Watershed Restoration
- Randolph Chapter 9: Groundwater and Source Water Protection

Wed 2-11 Readiness Assurance Process for Module 2

Mon 2-16 Team Application Exercise – Watersheds and Water Quantity

Mon 2-16 ASSIGNMENT 1 DUE

Wed 2-18 Team Application Exercise – Water Quality

Mon 2-23 Team Application Exercise – Stormwater Management

Wed 2-25 Team Application Exercise – Watershed Restoration

Mon 3-2 Team Application Exercise – Groundwater and Source Water Protection

MODULE 3: URBAN ECOLOGY, WILDLIFE HABITATS, AND URBAN BIODIVERSITY

Topics to be covered in Module 3 include:

1. Landscape and urban ecology
2. Urban Forestry
3. Wetland Protection and Management
4. Wildlife Habitat
5. Urban Biodiversity

Learning objectives for Module 3 include being able to:

1. Identify and describe core concepts of landscape and urban ecology;
2. Identify, describe and apply principles and techniques for urban forestry and wetland preservation;
and
3. Identify, describe and apply principles and techniques for wildlife habitat and urban biodiversity management.

RAP Readings

- Randolph Chapter 10: Landscape and Urban Ecology, Urban Forestry, and Wetlands
- Randolph Chapter 11: Wildlife Habitats and Urban Biodiversity

Wed 3-4 Readiness Assurance Process for Module 4

Mon 3-9 Team Application Exercise – Urban Forestry

Mon 3-9 ASSIGNMENT 2 DUE

Wed 3-11 Peer Review Exercise and Discussion of Final Assignment

Mon 3-23 Team Application Exercise – Wetland Protection and Management

Wed 3-25 Team Application Exercise – Wildlife Habitat Fundamentals and Urban Biodiversity

Fri 3-27 ASSIGNMENT 3 DUE

MODULE 4: ENERGY, CLIMATE CHANGE, AND NATURAL HAZARDS

Topics to be covered in Module 4 include:

1. Energy and Air Quality
2. Climate Change Mitigation
3. Climate Change Adaptation
4. Natural Hazard Mitigation – Flooding
5. Natural Hazard Mitigation – Coastal Hazards, Geologic Hazards, and Wildfires

Learning objectives for Module 4 include being able to:

1. Identify and describe relationships between energy, air quality and climate change
2. Identify, describe and apply climate change mitigation techniques
3. Identify, describe and apply climate change adaptation techniques
4. Identify, describe and apply natural hazard mitigation techniques

RAP Readings:

- Randolph Chapter 12: Energy, Air Quality, and Climate Change
- Randolph Chapter 13: Natural Hazard Mitigation and Community Resilience

Mon 3-30 Readiness Assurance Process for Module 4

Wed 4-1 Team Application Exercise – Climate Change Mitigation

Mon 4-6 Team Application Exercise – Climate Change Adaptation

Wed 4-8 Team Application Exercise – Natural Hazard Mitigation -Flooding

Fri 4-10 ASSIGNMENT 4 DUE

MODULE 5: INTEGRATION METHODS AND SYNTHESIS METRICS

Topics to be covered in Module 5 include:

1. Land Capability and Suitability Analysis
2. Carrying Capacity Studies
3. Environmental Impact Assessment
4. Build-Out Analysis
5. Synthesis Metrics, Indicators, and Indices

Learning objectives for Module 5 include being able to:

1. Identify and describe key approaches for integrating the quite of environmental analysis techniques available to planners and
2. Identify and describe the rationale for and example of metrics, indicators and indices for sustainable land use.

RAP Readings:

- Randolph Chapter 14: Integration Methods and Synthesis Metrics

Mon 4-13 Readiness Assurance Process for Module 5

Wed 4-15 Team Application Exercise – Land Capability and Suitability Analysis

Mon 4-20 Team Application Exercise –Carrying Capacity Studies

Wed 4-22 Team Application Exercise – Synthesis Metrics, Indicators and Indices

CLOSING MODULE: FINAL ASSIGNMENT

Mon 4-27 Final assignment work session

Wed 4-29 Final assignment work session

Week of May 4th – Final Exam – Final Assignment Poster Session