

URPL 6500

Environmental Planning and Management, Fall 2021

This syllabus is preliminary and subject to change.

Instructor: Austin Troy

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Meets Tuesday, 9:30-12:15

Course description

This course covers topics related to the integration of environmental sustainability into urban and regional planning from the perspective of the natural/physical sciences on the one hand and policy, planning, and management on the other. The course is split into two modules: terrestrial resources and water resources. We then focus on a variety of topics relevant to planners and urban/suburban contexts, within the terrestrial domain, including urban heat island management, habitat conservation, urban forestry and agriculture, endangered species management, fire-safe planning in the wildland-urban interface, brownfields remediation and community-based parks and open space planning. In the process we will cover some key pieces of legislation, such as the Endangered Species Act, NEPA and CERCLA. The second module starts with the scientific fundamentals of surface and groundwater hydrology and then focuses on topics integrating water and planning, such as stormwater management, source water/ groundwater protection, residential water conservation, water supply management, water pollution control, and Clean Water Act compliance. Instruction in scientific principles is designed to convey key concepts and terminology that are essential for understanding the technical literature upon which environmental plans are built. Students apply this scientific literacy to address a planning problem in the final project. Throughout the course, students will learn a mix of the scientific fundamentals needed to understand professional documents, legal requirements, and planning best practices. Students will also learn about data sources for urban environmental data and how to analyze and present this data when environmentally characterizing sites. This class involves several field trips that require some limited hiking, as well as class projects.

Learning objectives

- Understand basic scientific fundamentals of environmental planning in disciplines such as ecology and hydrology sufficiently to be able to read and understand professional documents
- Understand key laws and regulations that regulate urban environmental management
- Understand planning fundamentals and best practices for urban environmental management and its various subfields
- Understand how to apply scientific principles to the plan making and review process
- Acquire data skills to be able to environmentally characterize sites
- Learn about the professional domains that work in urban environmental planning

Requirements

- Attendance and participation: you're expected to attend all classes and field trips and actively participate in discussions and activities. Half of the attendance grade is based on participation in in-class group exercises. Most of these will involve turning some kind of group-work into Canvas

that will be marked as complete or not complete. When absences are unexcused, these assignments will be marked zero and cannot be made up. Furthermore, I will on occasion present questions and pull a name out of a hat to answer that question. Excused absences should be arranged in advance. Each unexcused absence will count for a 20% reduction of your attendance and participation grade.

- Reading: You are expected to do all the required reading. I will draw random names to answer questions in class. These will be easy to questions to answer if you've done the reading.
- Exams: TBD
- Homework: TBD
- Final project and presentation: TBD

Grading

- TBD

Letter Grade Criteria

for the full MURP grading policy, see the section on grading in the student handbook.

The MURP program uses the University's standard 4.00 grading letter and point system:

A 4.00 points A- 3.70 points B+ 3.30 points B 3.00 points B- 2.70 points C+ 2.30 points

C 2.00 points C- 1.70 points D+ 1.30 points D 1.00 points D- 0.70 points F 0.00 points

These statements describe the expectations associated with letter grades awarded for MURP program assignments and courses:

- "A" grade range: Exceptional scholarship and superior work products that significantly exceed stated requirements in scope and/or quality
- "B" grade range: Commendable scholarship and accomplished work products that somewhat exceed stated requirements in scope and/or quality
- "C" grade range: Satisfactory scholarship and work products that meet or almost meet stated requirements in scope and/or quality
- "D" grade range: Inadequate scholarship and inferior work products that clearly fail to meet stated requirements in scope and/or quality
- "F" grade: Unacceptable scholarship and work product

Attendance Policy

Attendance is mandatory. If you have to miss a class for a valid reason, please email the instructor as far in advance as possible. Each unexcused absence will result in a 2% deduction from the total grade. Also, please arrive on time out of respect for your colleagues.

Academic Integrity:

Students must adhere to UCD's [code on academic honesty](http://catalog.ucdenver.edu/content.php?catoid=6&navoid=530) (please visit <http://catalog.ucdenver.edu/content.php?catoid=6&navoid=530>). In particular, students should make all efforts to properly cite sources in papers and avoid plagiarism. Unattributed copying of text from sources can lead to failure for an assignment.

Readings:

Required textbook: John Randolph. 2012. Environmental Land Use Planning and Management, Second Edition. (subject to change)

Other readings on Canvas. Bibliographic information is contained within the PDF for each reading.

Preliminary Schedule (subject to change: will be updated later)

Date	In class	Reading	Assignment
Part 1: Terrestrial Resource Management and Planning			
Week 1	Intro to course Discussion: environmental planning careers Lecture: Intro to urban climate and heat island	<ul style="list-style-type: none"> • Chapin et al., Principles of Terrestrial Ecosystem Ecology (Climate Chapter) • Gago: The City and Urban Heat Islands 	
Week 2	Lecture: Soils, plant communities, ecosystem ecology and succession	<ul style="list-style-type: none"> • Smith and Smith 2001, chapter 4 excerpts (follow in-text notes on what to read) • Randolph pages 143-153 • Smith and Smith 2006, ch 18 	In class exercise: soil flowchart, soil mapping
Week 3	Lair of the Bear Field trip?	<ul style="list-style-type: none"> • Benedict, chs 17 and 20 • Smith (1977) Elements of Ecology and Field Biology: Community chapter 	Homework due: weather mapping
Week 4	Lecture: Urban Forestry and urban greening, Denver green building ordinance	<ul style="list-style-type: none"> • Randolph: 328- 342 • Nowak et al.:Sustaining America's Urban Forests (pp 1-18) 	
Week 5	Lecture: landscape ecology, Habitat Conservation Planning, Endangered Species Act, ecosystem planning processes	<ul style="list-style-type: none"> • Randolph: 388-400, • Watchman: Science and Uncertainty in Habitat Conservation Planning 	Homework due: Field report In class: IPaC conservation web site exercise
Week 6	Planning for fire hazard and the wildland-urban interface.	<ul style="list-style-type: none"> • Randolph: 481-485 • Headwaters Economics: Local Responses to Wildfire (pp. 5-25) • Mowery and Wafaie 	in class fire planning exercise
Week 7	Highlands Ranch field trip with Mark Giebel	<ul style="list-style-type: none"> • Plan docs for HRCA (skim): • Open Space Conceptual Plan • Mngmt Implementation plan • Open Space Cons. Area Plan 	
Week 8	Key federal legislation: NEPA, CERCLA and Brownfields Exam review		
Week 9	Exam 1 Final project review		

Part 2: Water Resource Management and Planning

Week 10	Lecture: Intro to hydrology and human impacts on hydrology	<ul style="list-style-type: none"> • Randolph: 186-213 • O'Driscoll et al: Urbanization Effects on Watershed Hydrology(excerpts) 	In class runoff assignment
Week 11	Lecture: Water pollution, Low Impact Development, wastewater, wetlands, stormwater BMPs	<ul style="list-style-type: none"> • Randolph, pp213-226, 247-289 • Roy et al. Impediments and solutions to watershed scale urban stormwater management 	In class water quality assignment
Week 12	Guest Lecture on stormwater Lecture: Groundwater science and protection	<ul style="list-style-type: none"> • Randolph, pp. 290-297 • Sophocleous, M. (2000), From safe yield to sustainable development of water resources • Before the Well Runs Dry: Executive Summary 	
Week 13	Lecture: Clean Water Act and source water assessment and protection planning	<ul style="list-style-type: none"> • Randolph pp 305-315 and review 251-257 again • Clean Water Act Summary (pp 1-6) • Safe Drinking Water Act Summary (pp 2-7, 12-15) 	Homework due: EPA stormwater calculator exercise
Week 14: Thanksgiving			
Week 15	Lecture and Guest Lecture on urban water supply and conservation Exam review	<ul style="list-style-type: none"> • Guide to water conservation planning in CO, pp. 1-11 . 	
Week 16	Exam 2 In class work on projects		
Week 17 (finals week)	Presentations for project		