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image: River Avon, Bath England – M. Ross

Course Syllabus

Urban Ecology/Sustainable Cities

Geology 443/590 & Geography 443

Spring 2023

Meeting Time and Place: 11:20-12:55 pm, Tuesday/Thursday in 104 Strong Hall

Course Credit Hours: 3 hours

FACULTY CONTACT INFORMATION:

Michael McKinney

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Mike Ross

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COURSE DESCRIPTION:

This course is a primer on urban socio-ecological systems and processes. As the planet continues to urbanize, we need to understand urban regions in terms of both the ecology of the city and ecology in the city. The *ecology of the city* implicates landscapes across the globe as urban residents require resources such as food, water, and other goods and materials that may come from very far away. This diagrammatic or networked condition of urbanism must be considered just as much or more as the localized condition typically understood as *ecology in the city*, which typically focuses on the discreet physical systems and processes of a city or metropolitan area.

The course is structured around 'facts' and 'frames' which suggests an approach that provides both useful facts about urban ecology and sustainability as well as conceptual frameworks within which these facts are made meaningful. This approach seeks to avoid a reductive, technocratic approach to urban ecology, which typically results in simplistic problem/solution approaches to urban issues. This course attempts to lay the groundwork for the development of a more holistic approach to urban ecology that more fully integrates the complexity inherent in socio-ecological systems. This approach requires the combination of science with design as has been seen in green infrastructural work including green roofs, green walls, greenways, and many other ways to enhance the ecological performance of urban systems.

TEXTS/RESOURCES/MATERIALS:

This course has a required textbook from which there will be weekly reading assignments: **Urban Ecology: An Introduction** by Ian Douglas and Philip James. This is a free ONLINE book available via Hodges Library. Textbook is found at <https://www.lib.utk.edu/Links to an external site>. then search for "urban ecology ian" to get online access to: *Urban Ecology: an Introduction* by Ian Douglas and Philip James. Additional required or recommended readings may be provided at times. These will be distributed electronically via the Canvas site, and students will be informed of their posting and if/when the material would need to be read by.

COURSE REQUIREMENTS, ASSESSMENT AND EVALUATION METHODS:

10% weekly quizzes on readings & lectures

10% mini-exams (5% each)

20% assignments

20% class project and presentation

20% mid-term exam

20% final exam

Class project: you will work in groups of threes on a short in-class presentation given at near the end of the class. You can choose any topic that interests you related to urban ecology. Each student must contribute to the research for the project and give part of the presentation. You will be graded by your peers and the instructors.

Field trips: we will take short field trips on campus to see concrete examples of content discussed in class. Information about any such field trips will be provided prior to the class session for the trip.

Exams and quizzes: will be timed, in-class, taken online with your laptop (on Canvas). Quizzes will be open note but exams and mini-exams will be closed note.

HOW TO BE SUCCESSFUL IN THIS CLASS:

Come to class. Attendance will be taken (see policy below).

Turn in all assignments on time.

Take good notes – from readings, lectures, and discussions, and any field trips.

Read the assigned material at least a day before class, to give you time to think about how it is related to your past experience. Reading the materials more than once will help you retain the information longer.

COURSE OUTLINE/ASSIGNMENT/UNITS OF INSTRUCTION SCHEDULE:

Week 1 – Cities and ecology

- Tues, Jan 24 –Introduction to course, instructors, and each other. Course expectations. Cities and ecology (Chapter 1) – McKinney and Ross
- Thurs, Jan 26 – Cities as systems (Chapter 3) - McKinney

Week 2 – Physical environment of cities

- **Tues, Jan 31 – Urban atmosphere, weather, air pollution (Chapter 4) - Ross**
- **Thurs, Feb 2 - Urban geomorphology and soils (Chapter 5) – McKinney**

Week 3 – Physical environment of cities II

- Tues, Feb 7 – Urban hydrology (Chapter 6) – Ross
- Thurs Feb 9- Urban geochemistry (Chapter 7) – McKinney

Week 4 – Urban habitats

- Tues, Feb 14 – Kinds of urban ecosystems (Chapter 8) - McKinney
- Thurs, Feb 16 - Urban wetlands – Ross, **Mini-exam 1 (20 minutes in-class)**

Week 5 – Urban flora

- Tues, Feb 21 – Urban plants I (Chapter 9) - McKinney
- Thurs, Feb 23 – Urban plants 2 Chapter 9) – Ross

Week 6 – Landscaping as restoration

- Tues, Feb 28 – Environmental restoration in urban habitats (Chapter 13) - McKinney
- Thurs, March 2 – Sustainable landscaping (Tallemy reading) – Ross

Week 7 – Mid-term events

- Tues, March 7 – Exam review
- Thurs, March 9 – **Mid-term Exam**

Week 8 – SPRING BREAK

Week 9 – Urban animals

- Tues, March 21 – Urban adapters, exploiters and avoiders (Chapter 10) - McKinney
- Thurs, March 23 – Urban amphibians and reptiles (Chapter 10) – Ross

Week 10 – Ecosystem services

- Tues, Mar 28 - **Group Project Progress Reports**
- Thurs, Mar 30 – Ecosystem Services (Chapter 11) – McKinney/Ross

Week 11 – Urban ecology and human health

- Tues, April 4 – Cities and human health (Chapter 12) - McKinney
- Thurs, April 6 – NO CLASS

Week 12 – Stewardship and environmental justice

- Tues, April 11 – Urban herps – Ross; **Mini-exam 2 (20 minutes in-class)**
- Thurs, April 13 – SITES – Ross -

Week 13 – Future of cities

- Tues, April 18 – Adapting to climate change (Chapter 15) – Ross
- Thurs, April 20 – Urban ecology and future cities (Chapter 16) - McKinney

Week 13 – Special topics & Presentations

- Tues, April 25 – Environmental justice – Guest speaker
- Thurs, April 27 – Student Presentations

Week 14 – Student Presentations

- Tues, May 2 – Student Presentations
- Thurs, May 4 – Student Presentations

Week 15 – Final exam review

- Tues, May 9 – Final exam review

Week 16 - FINAL EXAM - Monday May 15 at 3:30-6 pm

Attendance:

Class attendance is required in order for a student to excel in the techniques and concepts being covered. Because of the large amount of subject matter covered in the course, instruction will start promptly at 11:20 a.m. If for any reason the student cannot meet this schedule (such as arriving from a class on the other side of campus) they should meet with the instructor to discuss options on the first day of class. Attendance will be taken at the beginning of class with a sign-in sheet. Students present at this time will be marked 'Present' on Canvas.

You are allowed one unexcused absence without a penalty – additional unexcused absences will result in your course grade being lowered by 5%. Unusual mitigating circumstances will be considered in applying any penalty. If you are absent it is your responsibility to acquire lecture notes, handouts, and assignments from a classmate.

Intellectual Property Statement:

All work performed under the direction of faculty in this course is subject to limitations of “fair use” and Intellectual Property Rights as outlined by the UTK General Counsel and the UTK Office of Research and Engagement. Unless otherwise noted, all rights are reserved by the colleges and university.

Grading Policies:

Submission Deadlines & Late Work

Late work will be accepted according to the following:

- up to 5 days late penalty of one letter grade (-10%)/day
- submitted after 5 days automatic F, 50% of earned grade
- not submitted grade of zero

Note that weekends count as a 24-hour period. If you wish to request an extension (granted only in cases of extenuating circumstances), please talk with the instructor prior to the due date, if possible.

Academic Dishonesty:

This course, like all courses offered at UTK, will abide by the policies and procedures of academic dishonesty that can be found here:
http://judicialaffairs.utk.edu/faculty_dishonesty.php

Grading Scale and Description:

0	60.0	63.0	67.0	70.0	73.0	77.0	80.0	83.0	87.0	90.0	93.0	97.0
F	D-	D	D+	C-	C	C+	B-	B	B+	A-	A	A+
0	0.67	1.00	1.33	1.67	2.00	2.33	2.67	3.00	3.33	3.67	4.00	4.00

Grades will be based primarily on the student's demonstration of effort and progress. Your instructors will encourage you to achieve work at the highest level possible but it is partly the student's responsibility to set high standards and continually challenge their abilities.

THE INSTRUCTORS RESERVE THE RIGHT TO REVISE, ALTER AND/OR AMEND THIS SYLLABUS, AS NECESSARY. STUDENTS WILL BE NOTIFIED IN WRITING AND/OR BY EMAIL OF ANY SUCH REVISIONS, ALTERATIONS AND/OR AMENDMENTS.

[UNIVERSITY CIVILITY STATEMENT](#) [Links to an external site.](#)

Civility is genuine respect and regard for others: politeness, consideration, tact, good manners, gracious-ness, cordiality, affability, amiability and courteous-ness. Civility enhances academic freedom and integrity and is a prerequisite to the free exchange of ideas and knowledge in the learning community. Our community consists of students, faculty, staff, alumni, and campus visitors. Community members affect each other's well-being and have a shared interest in creating and sustaining an environment where all community members and their points of view are valued and respected. Affirming the value of each member of the university community, the campus asks that all its members adhere to the principles of civility and community adopted by the campus.

[EMERGENCY ALERT SYSTEM](#) [Links to an external site.](#)

The University of Tennessee is committed to providing a safe environment to learn and work. When you are alerted to an emergency, please take appropriate action. Learn more about what to do in an emergency and sign up for [UT Alerts](#) [Links to an external site.](#). Check the emergency posters near exits and elevators for building specific information. In the event of an emergency, the course schedule and assignments may be subject to change. If changes to graded activities are required, reasonable adjustments will be made, and you will be responsible for meeting revised deadlines.

ACADEMIC INTEGRITY

Each student is responsible for his/her personal integrity in academic life and for adhering to UT's Honor Statement. The Honor Statement reads: "An essential feature of the University of Tennessee, Knoxville is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the university, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity."

YOUR ROLE IN IMPROVING THE COURSE THROUGH ASSESSMENT

At UT, it is our collective responsibility to improve the state of teaching and learning. During the semester you may be requested to assess aspects of this course either during class or at the completion of the class. You are encouraged to respond to these various forms of assessment as a means of continuing to improve the quality of the UT learning experience.

[STUDENTS WITH DISABILITIES](#)Links to an external site.

Any student who feels he or she may need an accommodation based on the impact of a disability should contact the Student Disability Services (SDS) at 865-974-6087 in 100 Dunford Hall to document their eligibility for services. Student Disability Services will work with students and faculty to coordinate reasonable accommodations for students with documented disabilities.

[ACCESSIBILITY POLICY AND TRAINING](#)Links to an external site.

WELLNESS -- <http://counselingcenter.utk.edu/Links to an external site.> and <http://wellness.utk.edu/Links to an external site.>

The Student Counseling Center is the university's primary facility for personal counseling, psychotherapy, and psychological outreach and consultation services. The Center for Health Education and Wellness manages 974-HELP, the distressed student protocol, case management, the Sexual Assault Response Team, and the Threat Assessment Task Force.