**Sustainable Urban Development**

**CP 2233**

**Lecture:** Tuesday/Thursday 1:35 p.m. – 2:55 p.m.

Architecture (West) 258

**Instructor:** Catherine L. Ross Office Hours: T/R 11:00 a.m. – 12:30 p.m.

Center for Quality Growth & Regional Development and others by appointment

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**Course Materials:** All course materials are available on T-Square, https://t-square.gatech.edu in CP 2233.

**COURSE DESCRIPTION:**

This course will explore the principles and practice of sustainable development from the building and site to the city and region. This exploration will take place while considering national and global implications. We will begin by examining the issues of sustainability, and looking at conventional development practices to ascertain how they diverge from sustainable development practice.

What is sustainability? How can planners, engineers, architects and policy makers incorporate sustainability principles into their practice? How do the principles of sustainability and their application operate at various geographic scales? This course will help students answer these questions in light of the current international struggle to find the way forward given the need for increasing adaptation on the part of the world’s population and environment.

Sustainability is NOT simply concerned with the natural environment. Instead, sustainable practices place equal weight on environmental preservation, economic feasibility, and social equity to achieve long-term viability. For the purposes of this course, sustainability is defined as multi-faceted, multi-sectoral, and multi-temporal. It is the balancing of social, economic, and environmental issues through private-, public-, global and nonprofit sector efforts for today and for generations to come. Therefore a primary purpose of this course is to assess the appropriate themes and scales at which sustainable practices can be achieved.

This course is an undergraduate version of CP 6233, but the undergraduate and graduate versions of the course will be taught separately. There is substantial overlap in the basic course themes, a number of the readings, and some of the assignments. However CP 2233 omits the more advanced modeling material in CP 6233 and substitutes shorter readings drawn from The Sustainable Urban Development Reader for a number of the more technical graduate-student-oriented readings required for CP 6233. The number and substance of required graded assignments have also been adjusted to be appropriate for a sophmore-level course.

**LEARNING OBJECTIVES:**

After completing the course, students will be able to accomplish the following:

* understand the basic forces driving urban development processes.
* discuss different concepts of sustainability and their implications for urban areas.
* describe the environmental, economic, and social components of sustainability from an urban development perspective.
* apply measurement and assessment tools for sustainability as a whole and for each of the components of sustainability for projects, plans, programs or policies.
* understand the sustainability opportunities and challenges in specific substantive areas including energy, transportation, buildings, land use, greenspace, and climate change.
* relate basic community engagement principles to sustainability practice.
* synthesize the course materials and apply them in the real-world context of urban governance and implementation.

**ASSIGNMENTS AND REQUIRED WORK:**

This course will begin with a seminar and discussion format, then transition to a “studio-course” experience in that you will be defining the problem and your approach to conducting your study. The course requirements, therefore, are structured in a way that ensures that each student participates actively throughout course (both independently and in group environments) and contributes toward the final reports.

**Assignment 1: Opinion Essay**

Each student will be required to write a 600-800 word essay on sustainability. Students should critically reflect on the readings to assess the principles and goals of sustainable development. The essay should address obstacles (environmental, political, economic, and so on) to achieve sustainability and explore the ultimate goals—are they realistic? For this assignment there are no “right” answers, just well-supported arguments. More details will be provided.

**Assignment 2: Tsquare postings**

For eight of the 16 weeks in the course students will write and post a brief (200-250 word) summary of the week’s readings and two or three questions for class discussion. Posts will be due by 12:00 noon on Monday, and during the next several days students will review all class postings and be prepared for small-group and full-group discussion in the Thursday class.

**Assignment 3: Revisiting the Opinion Essay**

All students will be required to revisit and revise their Assignment 1 essays. Again, there are no “right” answers, just well-supported arguments.

**Assignment 4: Assessing Sustainability (report and presentation)**

Students will work in teams of three of four to assess the sustainability of a local project. This year’s project will be the Atlanta Beltline. Each group will conduct a sustainability assessment of one of the Beltline segments in terms of the environmental, economic, and social impacts on the neighborhood surrounding the team’s segment. The assessment will also address at least three of the substantive dimensions of urban sustainability and present recommendations to enhance the project’s sustainability. The results of the project will be presented in a professional presentation.

**Participation**

The course requires students to be fully engaged in the classroom. This includes meaningful focus during lectures, appropriate and relevant questions, and class participation. Each student will also be required to participate in all discussions of the readings throughout the course. Participation is not simply talking, but saying something of value to the conversation, that is relevant, and that adds an insight or perspective to the topic. The instructors will provide periodic feedback to students regarding class participation and, if needed, suggestions for improvement.

**Midterm and Final Exams**

The course will have a midterm exam and a final exam. The exam will include short answer questions related to sustainability concepts, applications, and calculations, plus two essay questions. Five potential exam essay topics will be distributed to students one week before the midterm and final so students will have the opportunity to develop well-considered answers to the questions.

**SCHOLARLY CONDUCT:**

The Georgia Tech Honor Code is in effect throughout this course. You should review this code and make sure you understand your responsibilities. Plagiarism or other forms of violations of this Code will not be tolerated.

All work must be completed on time. Work that is submitted late will receive reduced credit, except in highly unusual instances. Usually, 10% of the total possible points will be deducted for each school day that an assignment is late.

All written work is expected to be polished and professional. Clarity of expression, organization of materials, absence of typographical errors, correctness of grammar and spelling, and other communication skills are considered in evaluating written assignments. All oral presentations are expected to be well organized, professional, and with appropriate graphical or visual aids.

Students must format all citations and corresponding entries in the list of references according to the Publication Manual of the American Psychological Association, Fifth Edition (American Psychological Association, 2001), except include both volume and issue number for all periodicals. When citing information from the web, include the date it was retrieved as well as the exact URL. Articles appearing the *Journal of the American Planning Association* use these guidelines and can be useful as an example (the journal is available in the Architecture Library).

**ACCOMMODATIONS:**

Please let us know if you have any emergency medical information that we should know, or if you need special arrangements in the event the building must be evacuated.

Georgia Tech complies with regulations of the Americans with Disabilities Act of 1990 and offers accomodations to students with disabilities. If you are in need of a classroom accomodation, please make an applintment with the Office of Disability Services to discuss the appropriate procedures. Their website is www.disabilityservices.gatech.edu.

**GRADING:**

 **TEXTBOOKS:**

There are two required textbooks for the course. Additional readings are posted on the class tsquare site as pdf files within different folders for each week. The required books are:  
  
Wheeler, Stephen M. and Timothy Beatley. (2014). The Sustainable Urban Development Reader, 3rd edition. Routledge, ISBN 978-0415707763. (Abbreviated as SUDR in the readings list).

Portney, Kent E. (2013). Taking Sustainable Cities Seriously: Economic Development, the Environment, and Quality of Life in American Cities, 2nd edition. MIT Press, ISBN 978-0262518277. (Abbreviated as TSCS in the readings list.)

**WEEKLY READINGS:**

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| Week 1: Cities and urbanization | |
| Molotch, City as Growth Machine (tsquare) | |
| Ewing, Compactness vs. sprawl (SUDR: 130-137) | |
| Fry, Big City Growth Revival (tsquare) | |
| European Commission, World and European Sustainable Cities (tsquare) | |
| Portney, Conceptual foundations (TSCS: pp. 1-36) | |
| Portney, Summary (TSCS: pp. 323-334) | |
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| Week 2: Sustainability as a concept | |
| McDouough, Design for the Triple Top Line (tsquare) | |
| Mumford, Cities (SUDR: 19-23) | |
| McHard, Plight and Prospect (SUDR: 39-44) | |
| Bruntland Commission, Towards Sustainable Development (SUDR: 66-70) | |
| McKibben, The End of Nature (SUDR: 71-77) | |
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| Week 3: The sustainability debate | |
| Campbell, Green Cities (tsauare) | |
| Solow, Economist's Perspective (tsquare) | |
| Gunder, Sustainability: Planning's Saving Grace (tsquare) | |
| Leopold, The Land Ethic (SUDR: 24-33) | |
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| Week 4: Measuring sustainability | |
| Portney, Measuring the seriousness (TSCS: 37-88) | |
| Kristensen, The DPSIR Framework (tsquare) | |
| Ross, Measuring transportation sustainability (tsquare) | |
| Haughton, Environmenal Justice (tsquare) | |
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| Week 5: Economics element | |
| Gastparatos, Critical review (tsquare) | |
| Harnick, Value of city park system (tsquare) | |
| Glaeser, Greeness of Cities (tsquare) | |
| Cost-benefit analysis (tsquare) | |
| Kelman, Ethical critique (tsquare) | |
| Leonard, cost-benefit analysis defended (tsquare) | |
| Portney, Economic development (TSCS: 123-150) | |
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| Week 6: Environment element | |
| Wackernagel, Ecological footprint (tsquare) | |
| McManus, Planning with ecological footprints (tsquare) | |
| Beatley, Biophilic (SUDR: 181-183) | |
| Riley, Restoration (SUDR: 184-189) | |
| Steiner, Landscape (SUDR: 190-194) | |
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| Week 7: Social element | |
| Portney, More egalitarian place (TSCS: 187-204) | |
| Bullard, People of Color (SUDR: 235-241) | |
| Perlman, Fighting poverty (SUDR: 248-260) | |
| Corburn, Confronting (tsquare) | |
| Rainham, Public health (tsquare) | |
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| Week 8: Sustainable energy and climate change | |
| Portney, Environment & energy (TSCS: 89-122) | |
| Girardet, Metabolism (SUDR: 197-204) | |
| Brown, Harnessing (SUDR: 205-213) | |
| Yohe, Perspectives (tsquare) | |
| Pacala, Wedges (SUDR: 93-100) | |
| Buckley, Low carbon (SUDR: 101-106) | |
| Solecki, Urbanization (SUDR: 107-116) | |
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| Week 10: Sustainable transportation | |
| Ross, Measuring (tsquare) | |
| Gibson, Sustainability assessment (tsquare) | |
| Cervero, Transit (SUDR: 153-160) | |
| Newman, Traffic calming (SUDR: 161-167) | |
| Pucher, Cycling (SUDR: 168-178) | |
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| Week 11: Green architecture and buildings | |
| Vale, Green architecture (SUDR: 318-322) | |
| Eisenberg, Building Codes (SUDR: 323-327) | |
| US Green Buildings Council, Introduction (SUDR: 328-333) | |
| Sharp, Cost effective (SUDR: 334-336) | |
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| Week 12: Impacts of growth controls and smart growth | |
| Nelson, TDR handbook (tsquare) | |
| Porter, Managing growth (tsquare) | |
| Martin, Containment (tsquare) | |
| Zovanyi, Growth management (tsquare) | |
| Ewing, Compactness (SUDR: 130-137) | |
| Wheeler, Infill (SUDR: 138-145) | |
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| Week 13: Sustainability and green infrastructure | |
| Benedict, Green infrastructure (tsquare) | |
| Chiesura, Urban parks (tsquare) | |
| Alvarez, Green infrastructure (tsquare) | |
| Gehl, Outdoor space (SUDR: 146-150) | |
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| Week 14: Community engagement for sustainability | |
| Portney, Communitarian & Participatory (TSCS: 151-186) | |
| Arnstein, Ladder (tsquare) | |
| Davidoff, Advocacy (tsquare) | |
| Hsu, Social media (SUDR: 389-391) | |
| Lerner, Politics (SUDR: 400-405) | |
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| Week 15: Urban sustainability case studies | |
| Portney, Case studies (TSCS: 229-322) | |
| Wheeler, Case studies (SUDR: 495-562) | |
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| Week 16: Urban governance, efficiency & implementation | |
| Portney, Implementation (TSCS: 205-228) | |
| Svedin, Governance (SUDR: 392-399) | |
| Rowland, Sustainable governance (tsquare) | |

**READINGS BIBLIOGRAPHY:**

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Arnstein, Sherry R. (1969). "A Ladder of Citizen Participation," Journal of the American Institute of Planners, Vol. 35, No. 4, July 1969, pp. 216-224.

Benedict, M. A., & McMahon, E. T. (2002). Green Infrastructure: Smart Conservation for the 21st Century. Renewable Resources Journal, 20(3), 12.

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**CLASS SCHEDULE:**   
