Urban Sustainability
NRE 501: Syllabus
University of Michigan
Fall 2014
Monday 1:00pm-4:00pm, Dana 1006
3 Credits

Instructor: Professor Joshua Newell
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Office Hours: Tuesday & Thursday, 1:00-2:00pm, Dana 1064; and by appointment

Course Description
As engines of capital accumulation, cities have often been viewed as environmental sacrifice zones. Some critics have argued that ‘sustainable cities’ is an oxymoron. Nonetheless, the debate over sustainable development generally, and sustainable urbanism specifically, has succeeded in reshaping and broadening discourse around cities and attendant policies and outcomes – both in industrialized and industrializing countries. Implying that sustainable use of natural resources involves social justice and economic development as well as environmental concerns, the notion of sustainability has led away from narrower conceptions of urban environmentalism, toward more consideration for the future, greater integration of social and economic goals with environmental and ecological objectives, and hence a fundamental rethinking of how cities should be theorized, planned and managed.

This course introduces graduate students to the emerging field of urban sustainability from multiple disciplinary perspectives, primarily industrial ecology, urban political ecology, urban ecology, and planning. The course provides students with the theoretical and methodological tools in which to explore the potential for a sustainable urbanism. Approaches to foster more sustainable and resilient forms of urbanization and urban life – ranging from localization, to industrial symbiosis, to ecological restoration – will be introduced and evaluated. The theme of this year’s course is “Urban Metabolism” and students will be exposed to literature that conceptualizes the city through this lens. There is a focus on experiential learning, with two site visits to Detroit during which students are asked to view the city from varying disciplinary viewpoints, frameworks, and methodological approaches.

Urban Metabolism of Brussels, Duvigneaud and Denaeyer-De Smet (1977).
Learning Objectives
By the end of this course, you should be able to:

1. Connect sustainability concepts and technology to real-world urban challenges, including individual/social needs and political debates;
2. Understand the importance (and difficulty) of defining and fostering “urban sustainability”;
3. Present complex material to a diverse audience in a succinct and effective manner;
4. Facilitate effective discussions, while being attentive to diverse opinions and perspectives;
5. Read and write more effectively, both essential skills for your future.

Course Structure
The course is divided into three interdependent sections: 1. Concepts and Approaches of Urban Metabolism; 2. Urban Resource Flows and Form; and 3. Towards an Integrative Approach for a Sustainable Urban Metabolism. The course meets once a week for three hours and is discussion based, focusing heavily on the required readings. The course has an experiential component consisting of two field trips to Detroit and periodic in-class exercises. The primary deliverables, which are graded, are as follows: 1) Course participation; 2) Discussion leadership; 3) Reading responses; 4) and a Research paper.

Course Participation
All students are expected to attend and participate in the scheduled class sessions. Unexcused absences will be reflected in final grades. Attendance will be taken each week. In order to participate fully, completing the required reading for each session is essential.

Discussion Leadership
Each week, 1-2 students will work together to:

a) Prepare a 15-minute presentation on the week’s major concepts, based on the assigned readings. You may use PowerPoint if you wish, although you are by no means required to do so.

b) Prepare and distribute a handout with an agenda for discussion. These handouts should include 3-5 discussion questions/points. In addition to the readings, for both the presentation and the handout, please feel free to draw on a range of outside sources (e.g. websites, etc.). Just be sure that you carefully evaluate these sources before using them.

These discussions will last approximately 90 minutes, so be sure that you have prepared the right amount of material (e.g. questions, points). All students are expected to complete the readings and be prepared to discuss them in class. In crafting the presentation and handout-discussion materials think about the central theme. What are the main points in the readings? How do they relate to the theme of the class [urban sustainability] and the theme of the week and previous/future weeks? You will need to
critically evaluate these readings, by carefully assessing the ideas proposed, arguments made, and methods proposed. What questions remain unanswered and what ideas need further clarification? Additional guidance on developing effective discussion sessions will be provided in class.

**Reading Responses**
Over the course of the semester, you are required to submit five ‘reading responses.’ These two-to-four page responses are an opportunity for you to thoughtfully evaluate academic work in written form. These responses are designed to help you hone your critical thinking and writing skills and to generate material for your final term papers. I am also very interested in your perspectives about the various readings and topics. You have freedom to select readings that are of particular interest to you, analyzing one or two in depth or synthesizing a larger number of them. These are graded as credit/no credit and are designed to be low-pressure writing exercises that stimulate your creative juices. Have fun with them! But please do not take this flexibility as an excuse to submit work that is sloppy and uninspired. I do reserve the right to have you resubmit inferior response papers. Response paper due dates: September 22, October 6, October 20, November 3, and November 17. Please submit by Ctools and by hard copy in class.

**Research Paper**
The major deliverable for the course is a 6,000-8,000 word research paper that you will write with another student over the course of the semester. You may also elect to write one alone if you prefer. You have freedom to select a research topic that interests you; it just needs to be aligned with the subject matter of the course and should focus on some dimension of urban political ecology, industrial ecology, or urban ecology/planning, or some combination of these thought traditions. The format of the research paper is as a journal article to be hypothetically submitted to an academic journal of your choice. This requires that you follow the author guidelines of the journal, including structure (e.g. introduction, literature review, material/methods, results, discussion, conclusion, references, tables, figures) and style (e.g. reference format, etc.). These author guidelines are readily available on the websites of the various journals. As this is an interdisciplinary course, you are free to select a journal that most closely aligns with your research interests and/or disciplinary orientation. Some journals you may want to consider include the *Journal of Industrial Ecology, Annals of the Association of American Geographers, Landscape and Urban Planning, Journal of the American Planning Association, Environmental Science and Technology* and *Geoforum*.

To ensure that you generate a quality product, the term paper assignment is divided into four deliverables due over the course of the semester.

1. **Research Proposal (2 – 5 pages)** – Due Wednesday, October 15th (Ctools and in my Dana mailbox). This research proposal should include the following components:
   a. Identify an interesting problem or question re. urban sustainability that is connected to the themes and concepts of the course.
b. Provide an initial outline, structured along the guidelines of the journal that you select.
c. Provide a list of references that you plan to use.
d. Include preliminary diagrams or figures as needed.

2. **First Draft of Paper – Peer Review** (to reviewers) – Due Monday, November 24th by class.

   This peer review exercise will help you improve the content, structure, and overall argument of the term paper. You are each responsible for reviewing two papers. An instruction sheet for how to conduct this review will be provided in class. This peer review exercise is double-blind (you do not know who wrote the paper and they do not know who is reviewing it). These peer review comments are due Monday, December 1 by the beginning of class.

   With respect to completing a full draft of your paper, please keep the following in mind:
   a) The research question and main claim/thesis/argument should be easy to identify
   b) Evidence should be used to support your claims
   c) Methods used should be clearly articulated
   d) Paper should adhere to the standards described in the author guidelines of the journal of your choice.

3. **In-Class Presentation of Research Findings** – Due Monday, December 8

   For the final class, you will present your major research findings and field questions. The presentation should be 5 minutes long, followed by 5 minutes of Q&A. You may use PowerPoint if you wish.

4. **Revised Final Paper** - Due Friday, December 12, end of day. Upload on Ctools

   This final paper includes revisions stemming from the peer review process.

**Grading**

Course Participation (20%)
Discussion Leadership (20%)
Reading Responses (5 total) – (15%)
Research Proposal (5%)
Peer Review of Research Paper (10%)
Final Paper (25%)
Research Presentation (5%)

Final grades are based on the total percentage received for the semester. Equivalent letter grades are as follows: A+ (98.50%-100%), A (93.5-98.49%), A- (89.50 – 93.49%), B+ (87.50-89.49%), B (83.5-88.49%), B- (79.50 – 83.49%), C+ (77.50-79.49%), C (73.5-78.49%), and C- (69.50 – 73.49%).
Writing Help
A primary objective of this course is to develop your writing skills. You may find it helpful to contact the Sweetland Writing Center which offers free individual writing conferences for graduate students who are working on course papers, as well as dissertations, etc. Helpful research and writing aids include: *The Elements of Style* (Strunk and White); *The Craft of Research* (Booth, Colomb, and Williams); A Manual for Writers of Research Papers, Theses, and Dissertations (Turabian). Online sources with useful guidance on writing include OWL on-line writing lab from Purdue University (https://owl.english.purdue.edu/) and the University of Wisconsin writing handbook (http://writing.wisc.edu/Handbook/)

Accommodations for Students with Disabilities
Please contact me during the first week of class so that your needs can be accommodated. You may also wish to contact Services for Students with Disabilities (G-664 Haven Hall, 505 South State St.: 734-763-3000, http://ssd.umich.edu).

Academic Integrity
The University of Michigan seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one’s own academic work from misuse by others as well as to avoid using another’s work as one’s own. Plagiarism will not be tolerated and there will be severe consequences. For more information, please see http://www.rackham.umich.edu/current-students/policies/academic-policies/section10
 PART I  URBAN METABOLISM: CONCEPTS AND APPROACHES

Week 1: Course Overview and What is Urban Sustainability?

Monday, Sep 8

Required Readings


Supplemental


Week 2: Urban Metabolism I: Urban Political Ecology

Monday, Sep 15

Required Readings


**Supplemental**


**Week 4: Urban Metabolism II: Industrial Ecology**

**Monday, Sep 22**

**Required Readings**


**Supplemental**


**Week 5: Urban Metabolism III: Urban Ecology and Planning**

**Monday, Sep 29**

**Required Readings**


**Supplemental**


PART II  URBAN RESOURCE FLOWS AND FORM: OBJECTS OF STUDY

Week 6:  Urban Infrastructure: Detroit Site Visit: Ford Factory Tour

Monday, Oct 6

Required Readings


Gallagher, J. (2010). Reimagining Detroit: Opportunities for redefining an American city. Wayne State University Press. (Ch. 2: Detroit today: pp. 21-38 and Ch. 4: Road diets and roundabouts: pp.73-83)


Supplemental

Gillham, O. (2002). The limitless city: a primer on the urban sprawl debate. Island Press. (Chapter 1)


Week 7:  No Class

Monday, Oct 13

No Required Reading
**Week 8: Water**

**Monday, October 20**

**Required Readings**


**Supplemental**


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**Week 9: Food: Detroit Site Visit: Detroit Future City**

**Monday, October 27**

**Required Readings**


**Week 10: Food II and Green Space**

**Monday, November 3**

**Required Readings**


**Supplemental**


**Week 11: Buildings and Energy**

**Monday, November 10**

**Required Readings**


**Supplemental**


Wheeler, S. M., & Beatley, T. (Eds.). (2004). *The sustainable urban development reader*. Psychology Press. (Reading from Peter Calthorpe, and Section on Transportation, pp. 87-110, Section of Green Architecture and Building, pp. 179-198, and Case Studies of Sustainability at the Building and Site Scale, at the Neighborhood or District Scale, and at the City and Regional Scale, pp. 297-316).

**Week 12: Waste and Justice**

**Monday, November 17**

**Required Readings**


Supplemental


PART III TOWARDS AN INTEGRATIVE APPROACH FOR A SUSTAINABLE URBAN METABOLISM

Week 13: Indicators of Urban Sustainability

Monday, November 24

Required Readings

Bell, S., & Morse, S. (2008). Sustainability indicators: measuring the immeasurable? Earthscan. (Ch.1: Sustainability and sustainability indicators: pp. 3-44)


Supplemental


**Week 14: Towards Synthesis? Integrative Approaches to Urban Metabolism**

Monday, December 1

**Required Readings**


**Supplemental**


**Week 15: Final Presentations**

Monday, December 8

No Required Reading
# NRE 501 (Urban Sustainability) Major Course Deliverables

<table>
<thead>
<tr>
<th>Deliverables</th>
<th>Due Date</th>
<th>Delivery Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Response #1</td>
<td>Monday, September 22</td>
<td>Ctools; hard copy in class</td>
</tr>
<tr>
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</tr>
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</tr>
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<tr>
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<td>Monday, November 3</td>
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</tr>
<tr>
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<td>Monday, November 17</td>
<td>Ctools; hard copy in class</td>
</tr>
<tr>
<td>Paper Drafts for Peer Review</td>
<td>Monday, November 24</td>
<td>Ctools</td>
</tr>
<tr>
<td>Peer Review Comments</td>
<td>Monday, December 1</td>
<td>Ctools</td>
</tr>
<tr>
<td>Final Presentations</td>
<td>Monday, December 8</td>
<td>In-Class presentations</td>
</tr>
<tr>
<td>Final Papers</td>
<td>Friday, December 12</td>
<td>Ctools</td>
</tr>
</tbody>
</table>