Course Overview and Goals
Indicators drive decisions and inform action. This workshop introduces students to the history, theory and practice of measuring sustainability, with a focus on the metropolitan environment. Students will come to understand the relationship between sustainability, measurement and governance, analyzing and comparing specific indicators within their institutional, political and social contexts. How do communities, experts and organizations use and develop indicators, and how do they drive action and decision-making? The course is intended for students with an interest in sustainability in the urban environment, whether they intend to engage with these issues from a private, public or non-profit perspective.

The course is divided into four parts: A History of Sustainability, Designing Sustainability Indicators in Practice, Case Studies of Sustainability Indicators, and Theories on Measurement and Governance. During the first part of the course, students will be introduced to the history and importance of seeking to achieve sustainability in cities and regions. The second section of the course will introduce students to the practical elements of developing indicators for sustainability in urban environments. This section of the course forms the cornerstone for the final project, in which students develop an indicator or propose a specific process to develop an indicator for an issue related to urban or regional sustainability. Special emphasis will be placed on the relationship between the (proposed) indicator and policy and planning. The third part of the course will consist of a survey of 4 case studies. These consist of environments in which indicators and metrics have been developed to put the abstract sustainability concept into practice. Each week, students will be learning about a specific indicator, and an urban or metropolitan area in which it has been implemented. The final part of the course will consist of an overview of some critical theories about the role and efficacy of measurement in governance, with particular attention paid to the goals and limits of sustainability indicators as a tool to inform and influence action.

Upon finishing the course, the students will be able to:
- describe the basic characteristics of the most well-known sustainability indicators, their history and origins;
- analyze the relationship between measuring sustainability and decision-making in cities, in theory and practice for specific indicators;
- engage with normative questions about sustainability.
ASSIGNMENTS AND GRADING

The overall grade is calculated based on the following elements:

Attendance and Participation (10%):
This seminar requires active participation in discussions and critical reflection and assessment of the course material. Therefore, you should be prepared to discuss the main points of the readings, ask questions, provide constructive feedback, and generate and share critical perspectives. Some weeks you may be asked in advance to read and come prepared to summarize a particular article. Other weeks you will be asked to comment on the main arguments and ideas of readings. Your performance in these assignments and discussions will be the factors that determine your participation grade.

Deliverables for Working Sessions (40%):
After every section of the course, each student will write a brief (2-3 pages) “deliverable” relevant to sustainability in an urban or regional environment of his/her choice. The goal of these exercises is to develop the basic components of the sustainability indicator project, culminating in the final project. Based on these deliverables, students will be able to successfully work on the indicator project throughout the course.

Presentation on Sustainability Indicator (10%)
The cases of sustainability indicators will be introduced by student presentations. Based on the required readings, and any additional material students might want to bring in, students will present the strengths, weaknesses, opportunities and threats (SWOT) associated with the measurement systems. Presentation should be 10-15 minutes in length, and visual aides, like PowerPoint presentations or handouts are strongly encouraged, but not required.

Negotiation Simulation and Reflection Memo (10%):
Participation in the “Chemco” negotiation simulation is required, and each student has to write an individual reflection memo (1-2 pages) on the experience of trying to negotiate the development of this indicator. Answer one of the following questions:

• What was your strategy going into the negotiation, and how did it change (if at all) during the negotiation?
• The development of sustainability indicators often involves interactions between experts, communities and government officials. What did you learn about those kinds of interactions in this simulation?

Final Project and Presentation (30%)
Each student chooses an issue, community or technology related to urban or regional sustainability that (s)he believes could benefit from additional monitoring, measurement or attention. In a brief memorandum (10-12 pages) to a relevant actor, you describe the need for the use of an existing indicator, or for the development of a new indicator, as well as the steps the group proposes in order to create and/or implement that sustainability indicator. The new sustainability indicator, or the plan to implement an existing indicator or metric will be presented in class during the final session.
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READINGS

**Wednesday, Jan. 14: Sustainability Indicators: Weird Science or Excellent Adventure?**

**I. A HISTORY OF SUSTAINABILITY**

**Friday, Jan. 16: Lifeboats and Spaceships**


**Wednesday, Jan. 21: The Logic of Limits**


**Friday, Jan. 23: A Contested Concept**


**Wednesday, Jan. 28: Seeking Stability in Numbers**


**Friday, Jan. 30: Sustainable Future(s)?**


**Wednesday, Feb. 4: Categorizing Sustainability Indicators**

For a large number of sample indicators from around the world, see: UN Habitat – Human Settlements Programme: Urban Indicators Project: [http://ww2.unhabitat.org/programmes/guo/urban_indicators.asp](http://ww2.unhabitat.org/programmes/guo/urban_indicators.asp)

**Friday, Feb. 6: Working Session 1: Ideas for Indicators**
Students present on the location, problem or population they would like to develop a sustainability indicator for, and discuss the basic steps they will pursue to do so.

**II. DESIGNING SUSTAINABILITY INDICATORS IN PRACTICE**

**Wednesday, Feb. 11: The Role(s) of Stakeholders**


**Friday, Feb. 13: Negotiation Simulation: CHEMCO**
General Instructions for CHEMCO. Confidential Instructions will be handed out in class.

Recommended Readings:

**Wednesday, Feb. 18: Who Are the Stakeholders?**


Friday, Feb. 20: Moving from Indicators to Decisions


Wednesday, Feb. 25: Skeptics and Critics


Friday, Feb. 27: Working Session 2: Partners for Sustainability
Students present the various stakeholders of relevance to the indicator project of their choice, as well as the method(s) to engage, convene or organize them.

III. CASE STUDIES OF SUSTAINABILITY INDICATORS

Wednesday, March 4: LEED certification


Friday, March 6: LEED in Austin, TX.


Database of State Incentives for Renewables and Efficiency on Austin’s Green Building Requirement for City Projects:
http://www.dsireusa.org/library/includes/incentive2.cfm?Incentive_Code=TX14R

Wednesday, March 11: Community Indicators of Sustainability

National Neighborhood Indicators Partnership:
http://www.neighborhoodindicators.org

Friday, March 13: Participation and Sustainable Seattle


Additional Resources:
Sustainable Seattle: http://www.sustainableseattle.org

March 18 and 20: Spring Break


**Friday, March 27: San Francisco’s Footprint Commitment**


**Wednesday, April 1: Measuring Ecosystem Services**


**Friday, April 3: Counting on the Environment in Oregon**


**Wednesday, April 8: Working Session 3: Lessons from Practice**

Students present on the progress of their individual indicator projects, and present an overview of the way(s) in which the case studies have informed their proposed indicators.

**IV: THEORIES ON MEASUREMENT AND GOVERNANCE**

**Friday, April 10: Measurement and Governance**


Wednesday, April 15: Science, Coproduction and Civic Epistemologies

Miller, C. “New Civic Epistemologies of Quantification: Making Sense of Indicators of Local and Global Sustainability,” Science, Technology & Human Values 30, no. 3 (July 1, 2005): 403–432

Friday, April 17: Creating Nature


Wednesday, April 19: Working Session 4: Indicator Epistemology
Students present on the epistemic communities within which they seek to embed their indicator project, and which types of evaluation mechanisms are relevant in that community.

Friday, April 24: Final Presentations
Each student presents on her/his final project for 10 minutes