

## **UP 443 Scenarios, Plans & Future City**

Instructor: Arnab Chakraborty, Associate Professor of Urban and Regional Planning

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Summer II 2017 | 3 credits | Online

CRN: 38906

### **Course Description**

This course covers theories and practices of scenario analysis, a set of techniques useful for making plans and for creating more sustainable future cities. *Scenario analysis* can be used to think about multiple facets of a problem simultaneously and for addressing the uncertain future in light of the limited cognitive and computational capacity of individuals and organizations. Urban planners and policymakers are adopting and extending scenario approaches to envision the future, analyze decisions, and identify robust strategies in situations from making regional climate action plans to comparing alternative highway alignments.

The need for knowledge and skills in this area is reflected in – (1) the growing use of scenario analysis as a required method in many government-funded planning initiative in the United States and around the world, (2) new courses and workshops offered by urban planning programs and professional trainers, such as the American Planning Association and Planetizen, and (3) the sprouting of scenario planning support tools, such as Envision Tomorrow and Index PlanBuilder.

### **Who Should Take This Course?**

The course is designed for students interested in making our cities ready for future uncertainties. These may include students from urban planning, design, business, civil and environmental engineering, agricultural and consumer economics, architecture, and landscape architecture.

### **Course Objectives:**

This course will –

- i) expose participants to key principles of scenario analysis, and how they apply to urban planning and related fields
- ii) advance participants' ability to think about the future more systematically, and consider how planning decisions interact with future uncertainties,
- iii) explore tools that can simulate alternative futures and engage diverse stakeholders, and
- iv) help participants understand how scenario analysis can advance the broader goals of development plans and policies, as well as help devise strategies in specific situations.

### **About the Instructor**

Dr. Arnab Chakraborty is an associate professor of Urban and Regional Planning and the Dean's Fellow at the College of Fine and Applied Arts. An expert of land use and regional

planning, Professor Chakraborty has published more than a dozen peer-reviewed articles on scenario planning and, most recently, wrote a [Practitioners Guide for Scenario Analysis](#) in the *Journal of the American Planning Association*. He conducts regular scenario workshops for practitioners on behalf of [the American Planning Association](#). Professor Chakraborty's research has been supported by the Federal Highway Administration, the Lincoln Institute of Land Policy, the Urban Institute, and the National Science Foundation.

### Readings

The readings are taken from several books, reputable web-based sources, and academic journals. Most of the materials are supplied in electronic format to registered students via Compass. The course will also use one book that you will need to purchase:

- Hopkins, Lewis D., and Marisa Zapata. 2007. *Engaging the Future: Forecasts, Scenarios, Plans, and Projects*. Cambridge, Mass.: Lincoln Institute of Land Policy. (Referred to below as "ETF")

### Course Format, Deliverables, and Grading

The course is designed around weekly readings and review materials followed by students submitting brief reflections, taking short quizzes, and participating in online discussions. There will also be one mid-term assignment and a final project. The components of the course are organized and timed as follows.

1. *Read and Watch*: Each new module will be released to you at **12 AM on Saturdays, starting June 10**. The modules contain instructor notes and lectures, and links to post your deliverables
2. *Reflect*: You will review the materials and submit your *reflection* by **11 PM on Wednesdays**. Your reflections should be no longer than 200 words. Ideas for what you might address include the following: what you like/dislike about the readings; identify some aspect of the readings that made an impression on you (new fact, enlightening observation, new twist to an old idea, writing style, etc.); and/or something you did not understand. You may also include one-to-two questions you would like to ask to the class. Clear and concise reflections will count for 25% of the final grade.
3. *Discuss*: After the students have submitted their reflections by Wednesday, you are expected to review and post at least one set of *discussion comments*. These cannot be submitted prior to Wednesdays of the week and must be submitted by **11 PM on Friday**. Discussion comments may be in response to someone's reflection, or your own earlier post relevant to the topic, or an attempt to answer a question posted by the instructor or a student. Thoughtful participation in discussions will count for 25% of the final grade.
4. *Understand*: Each module also includes a brief Quiz that must be completed by **11 PM on Friday**. Quizzes will count towards 10% of the final grade.

As the timeline suggests, you will need to login to Compass at least twice each week, and possibly more. You should plan to spend four to six hours every week on this

course. All submissions are required, and missing or late weekly submission deadlines will not receive any credit.

You will also be asked to complete one Mid-term and one Final Project, each counting for 20% of the project grade. These will be due at the end of Week 4 and Week 8, respectively, and you will receive more instructions on these tasks later. Late submissions for mid-term or final project will be penalized by one letter grade (e.g. A to A-) for every 12 hours delay.

Final course grade will be based on the following distribution: 100-97 points = A+, 96.9-94 = A, 93.9-90 = A-, 89.9-87 = B+, 86.9-84 = B, 83.9-80 = B-, 79.9-77 = C+, 76.9-74 = C, 73.9-70 = C, 69.9-67 = D+, 66.9-64 = D, 63.9-60 = D-, and 59.9 – 0 points = F

### **Class Policies**

The volume of material to be covered and the cumulative nature of the material require your consistent participation on Compass. Your professional behavior on discussion boards is also critical to the success of the course. You are welcome to email me, but please use Compass discussion board for questions whose responses might benefit the entire class.

All deliverables are to be submitted electronically through Illinois Compass. If you attach a file, please put your name in the name of the file *in addition to* in the actual document and make sure it's in PDF format. Other file formats may be penalized and if I am unable to open them it may lead to your submission being considered void. Do not submit any work files via email attachments.

### **Academic Integrity**

Please be aware of the university guidelines regarding academic integrity, which can be found under Article 1, Part 4 of the student code (<http://www.admin.uiuc.edu/policy/code/>). Academic dishonesty includes such things as cheating, inappropriate use of university equipment/material, fabrication of information, plagiarism (presenting someone else's work from any source as your own such as copying someone else's post), and so on. All forms of academic dishonesty will be reported to the student's home department, the College of Fine and Applied Arts, and to the Senate Committee on Student Discipline.

### **Special Accommodations**

If you have any condition, such as a physical or learning disability, which will make it difficult for you to carry out the work as outlined or which will require academic accommodations, please notify me during the first week of the course.

## Course Outline

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### THE ROLE OF SCENARIOS IN PLANNING FUTURE CITIES

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#### **Module 1: Thinking About the Future in Planning**

This module provides some background for this course; why thinking about the future is important to planning, what are the common approaches to doing it, and what are the challenges and opportunities presented by these approaches.

Readings:

1. Hopkins and Zapata, ETF Ch. 1
2. Isserman, Andrew M. 1985. Dare to plan: An essay on the role of the future in planning practice and education. *Town Planning Review* 56 (4):483
3. Shipley, R. 2002. Visioning in planning: is the practice based on sound theory? *Environment and Planning A* 34 (1):7-22

\*\* Additional links to background readings are available on Compass. Students not from urban planning are especially encouraged to review these.

#### **Module 2: Fundamental principles and concepts**

This module covers broader concepts related to scenario planning such as decision analysis. It also introduces students to some common tools used for planning the future.

Readings:

1. Hopkins and Zapata, ETF Ch. 5: Smith
2. Kahn, Herman. 1962. Chapter 5, "Some Strange Aids to Thought." In *Thinking about the Unthinkable*. New York: Horizon Press.
3. Schoemaker, PJH. 1995. "Scenario Planning: A Tool for Strategic Thinking." *Sloan Management Review* 36:25-25.

#### **Module 3: Scenario types and construction**

This module provides a detailed description of scenario planning and related practices such as visioning and co-operative forecasting.

Readings:

1. Hopkins and Zapata, ETF Ch. 12: Cummings
2. Bishop, P., A. Hines, and T. Collins. 2007. "The Current State of Scenario Development: An Overview of Techniques." *Foresight* 9 (1):5-25.
3. Chakraborty, A. and McMillan, A., 2015. Scenario planning for urban planners: Toward a practitioner's guide. *Journal of the American Planning Association*, 81(1), pp.18-29.
4. Avin, Uri P., and Jane L. Dembner. 2001. Getting Scenario-Building Right. *Planning* 67 (11):22.

#### **Module 4: Scenario tools**

In this module, you will look at several online and GIS-based scenario planning tools. You will choose a tool, and consider its promises and limitations in certain scenario planning situations. You will then write a two-to-three pages long memo which you will submit as your mid-term assignment. Links to the tools and more instructions on how to write the memo will be shared with you through Illinois Compass. No other deliverables will be due this week.

- **DUE July 7, 11:00 PM – Mid-Term Assignment:** Review a scenario planning project or tool.

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THEME: CREATING AND USING SCENARIOS

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### **Module 5: Scenario planning applications**

In this module, you will look at examples of scenario planning in a variety of communities in several domains, especially land use, transportation, and regional planning.

#### Readings:

1. Hopkins and Zapata, , ETF Ch. 6: Avin.
2. Bartholomew, K. 2007. "Land Use-Transportation Scenario Planning: Promise and Reality." *Transportation* 34 (4):397-412.
3. U.S. Federal Highway Administration. 2010. Scenario Planning Guidebook. (skim) and review FHWA Scenario Planning Website: [http://www.fhwa.dot.gov/planning/scenario\\_and\\_visualization/scenario\\_planning/](http://www.fhwa.dot.gov/planning/scenario_and_visualization/scenario_planning/)
4. Chakraborty, A., Kaza, N., Knaap, G.J. and Deal, B., 2011. Robust plans and contingent plans: Scenario planning for an uncertain world. *Journal of the American Planning Association*, 77(3), pp.251-266.

#### Case Discussion, Envision Utah

1. Envision Utah. 2003. *The History of Envision Utah*. Self-published Report.
2. Scheer, Brenda. 2012. *The Utah Model: Lessons for Regional Planning*. Brookings Mountain West. University of Nevada Las Vegas.

Project website: <http://envisionutah.org>

### **Module 6: Involving the community**

This module covers approaches of involving the community in scenario planning. Examples covered include, collecting community and expert inputs through face to face and computer based approaches, involving them at different stages of the process, and the tradeoffs involved in different engagement approaches.

#### Readings:

1. Hopkins and Zapata, ETF Ch. 3: Grant

2. Chakraborty, A. 2011. "Enhancing the Role of Participatory Scenario Planning Processes: Lessons From Reality Check Exercises." *Futures* 43 (4):387-399.
3. Avin, Uri, Eli Knaap, Gerrit Knaap, Jason Sartori, Brad Barnett, Ken Snyder, Bruce Appleyard. *Equity in Scenario Planning*. Report. May 2014.

Additional Recommended Readings:

1. Street, P. 1997. "Scenario Workshops: A Participatory Approach to Sustainable Urban Living?" *Futures* 29 (2):139-158.
2. Hopkins and Zapata, ETF Ch. 13: Zapata

**Module 7: Advanced scenario planning and modeling**

In this module, you will look at several advanced mathematical and computer models that are used to generate and analyze scenarios. The models look at past changes, use statistical approaches to identify relationships between different components of the urban system, and project the outcomes of these relationships into the future.

Readings:

1. Hopkins and Zapata, ETF Ch. 11: Deal and Pallathucheril
2. Waddell, P., 2002. UrbanSim: Modeling urban development for land use, transportation, and environmental planning. *Journal of the American planning association*, 68(3), pp.297-314.
3. Landis, J.D. 2011. "Urban Growth Models: State of the Art and Prospects." In *Global urbanization*, edited by Eugenie L. Birch and Susan M. Wachter, 126-150. Philadelphia: University of Pennsylvania Press.

**Module 8: Applying scenario planning in your own work**

In this final module, you will write a brief white paper about how scenario planning can be applicable to an area of your interest or to your community. You will choose the topic and/or the community, and use the literature covered in this course and look for additional literature and information may be of value. Your white paper should be no longer than five pages, single spaced.

- **DUE August 4, 11:00 PM – Final Project:** White paper on scenario planning in your community.