Sam Nunn School of International Affairs / Georgia Institute of Technology

**International Affairs 4803**

**SMART & SUSTAINABLE MEGAREGION**

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**COURSE OBJECTIVES AND ORGANIZATION**

Megaregions – integrated networks of cities and their surrounding suburbs across which labor, capital, and ideas swiftly and at very low cost (Florida et al 2008) – play a pivotal role in a globalized world. Today’s forty largest megaregions generate two-thirds of world economic output and account for 85 percent of global innovation. They nurture technological and scientific innovation, serve as magnets for skilled labor, and host multinational corporations and high-quality educational institutions. Because they are the engines of global economic growth, technological change, and sociocultural transformation, it is appropriate to perceive of them as *global* megaregions. These megaregions – which are expanding across the landscapes of the Americas, Europe, Africa, and Asia – face a variety of common challenges concerning urban planning, infrastructure, socio-economic inequities, environmental degradation, energy resources, food security, and waste management. Yet it may be possible that many of these problems can be mitigated through the adoption of “smart” information and communication technologies that encourage sustainable development, improve the quality of life for all citizens, and enhance the creation of regional wealth. In light of the growing importance of megaregions and the inexorable expansion of their number, especially in the Global South, it is important to identify best practices to ensure that they will be able to develop sustainability.

In this particular course – which is taught as part of the *Japan Summer Program in Sustainable Development* – we will assess the sustainability of Greater Tokyo, the world’s largest megaregion with 55 million residents and a total gross domestic product of approximately $2.5 trillion. To do so, we will employ a multidisciplinary approach that utilizes tools from social and cognitive science, sustainable engineering, and computer science. Through systematic comparisons with other megaregions, we will seek to identify Greater Tokyo’s sustainability challenges and possible solutions, including those that may be afforded by the adoption of “smart” technologies. Thematic issues to be investigated include infrastructure, urban planning, equity concerns, and energy, environmental, and food security. Taking advantage of our home base at Tokyo Tech, we will utilize fieldtrips and site visits to obtain on-the-ground insights into particular sustainability challenges of Greater Tokyo. In the final sessions of the course, we will employ a problem-based learning exercise that employs data, information, and comparative case studies to evaluate Greater Tokyo’s sustainable development performance.

**Area E Approved Learning Outcome:**

Students will demonstrate the ability to describe the social, political, and economic forces that influence social behavior.

This course explores the ways in which environmental, economic, technological, and social forces shape sustainability in megaregions in countries around the world. Students will be able to describe how these factors shape individual, group, and state behavior as pertains to sustainability in a particular megaregion, and use the comparative method to evaluate that city’s sustainability performance in contrast to that of other megaregions.

**Course Learning Outcomes:**

* Students will describe the diversity of cultural and ethical systems in the world, particularly as applied to sustainability.
* Students will compare and contrast a particular megaregion’s performance in important areas of sustainable development (e.g., public transportation, urban planning, energy policy, etc.) with that of other megaregions.
* Students will identify how the social, political, and economic forces – including technological and environmental factors – that influence megaregion sustainability develop, persist, and change.
* Students will analyze the social, political, and economic forces that interact with scientific and technological factors to shape sustainable development-related policymaking at the national, regional, and supranational levels.
* Students will be able to express their arguments clearly and effectively both in written reports and class discussions.

**COURSE REQUIREMENTS**

The success of this course depends upon active, informed student participation. In addition, course grading will be determined by student performance on two examinations and three group projects. With regard to the group projects, you are required to participate in the preparation and oral delivery of a research design exercise, PowerPoint presentation (15 minutes in duration, followed by Q&A) and in the writing of a technical report (approximately 15 pages in length). These will be used to evaluate the progress you are making in the areas of expression, organization and clarity in oral and written communication. The PowerPoint presentation will be delivered at a forum to be held during the final classroom session of the course. *All members of the group are required to participate in the oral presentation.* Course grades will be weighted as follows:

* midterm examination: 30 percent
* research design project (group project): 10 percent
* oral presentation (group project): 30 percent
* written report (group project): 30 percent

**HONOR CODE AND ACCOMMODATION FOR STUDENTS WITH DISABILITIES**

All students are expected to behave in accordance with the policies of the Georgia Tech Honor Code with respect to conduct and academic honesty. Anyone engaging in acts that violate these policies, such as plagiarism or cheating, will be penalized. For more information on the Honor Code, see the Office of Student Integrity website at www.osi.gatech.edu and the text of the honor code at www.policylibrary.gatech.edu/student-affairs/academic-honor-code. If you are not familiar with what constitute plagiarism, please ask. Being uninformed of the policies does not absolve you from the responsibility of following them.

Special Accommodations: If you have or acquire any sort of condition that may require special accommodation(s), please inform me as soon as possible so that we may make the appropriate arrangements. Proper documentation from the Office of Disability Services will be required. Please contact that office (<http://disabilityservices.gatech.edu>) to get more information on available services and accommodations, as well as documentation requirements.

**COMMON READINGS**

Common readings – i.e., required readings for the entire class – are available either through the Georgia Tech Library’s *e-journals* portal or will be uploaded to Canvas or a shared folder on GoogleDrive. However, be aware that some of the reading you do for this course will be determined in discussions within your PBL group. If you have questions or wish to pursue a particular topic in more depth, you are encouraged to consult with one of the course facilitators.

**DISCUSSION TOPICS**

Week #1: Smart and Sustainable Megaregion – A Multidisciplinary Evaluative Framework

Dates: TBD

Common readings: Richard Florida, Tim Gulden, and Charlotta Mellander, “The Rise of the Megaregion,” *Cambridge Journal of Regions, Economy and Society*, Vol. 1 (2008), pp. 459–476; **additional readings TBA**.

Week #2: Institutional and Socio-economic Factors

Dates: TBD

Common readings: Stephen Wheeler, “Regions, Megaregions, and Sustainability,” *Regional Studies*, Vol. 43 (2009, No. 6), pp. 863-876; and Parag Khanna, “A New Map for America,” *New York* Times, April 15, 2016 (uploaded to Canvas); Chie Nakane, *Japanese Society* (London, UK: Orion, 2016), pp. 1-86 (uploaded to Canvas); “The Comparative Method” (uploaded to Canvas)

Research Design Project – *PBL Group Project* (10 percent of final grade)

Week #3: The Promise of “Smart” Technologies

Dates: TBD

Common readings: Yunchuan Sun, Houbing Song, Antonio J. Mara, and Rongfang Bie, “Internet of Things and Big Data Analytics for Smart and Connected Communities,” IEEE Access, Vol. 4, pp. 766-773; **additional readings TBA**.

Week #4: Urban Planning, Land, and Resource Issues

Dates: TBD

Common readings: Stephen Wheeler, “Regions, Megaregions, and Sustainability,” *Regional Studies*, Vol. 43 (No. 6), pp. 863-876; **additional readings TBA**.

Week #5: Transportation Infrastructure and Equity Issues

Dates: TBD

Common readings: TRB Critical Issues from 2009 and 2013 (<http://onlinepubs.trb.org/Onlinepubs/general/criticalissues09.pdf>) and 2013 (<http://onlinepubs.trb.org/Onlinepubs/general/criticalissues13.pdf>); and Adjo Amekudzi-Kennedy, Brian Woodall, and Alex Karner with Alexandra Akosa, Haley Franklin, Jose Luiz Simao, Henrik Gudmundsson, and Janille Smith-Colin, “Institutional Arrangements, Transportation System Investments and Socio-Economic Outcomes: Affecting the Development of Shared Regional Prosperity” (uploaded to Canvas)

Week #6

Examination review

Midterm examination: TBD (30 percent of final grade)

Week #7: Energy and Environmental Security

Dates: TBD

Common readings: *Green Growth: From Religion to Reality* (Berkeley, CA: Berkeley Roundtable on the International Economy, 2011) (uploaded to Canvas)

Week #8: Waste Management

Dates: TBD

Common readings: “Waste Management,” *United Nations Sustainable Development Knowledge Platform* (download report at <https://sustainabledevelopment.un.org/index.php?page=view&nr=6&type=504&menu=139_>); **additional readings TBA**.

Week #9: Food Security

Dates: TBD

Common readings: Kevin Morgan, “Nourishing the city: The rise of the urban food question in the Global North,” Urban Studies, Vol. 52 (No. 8, 2015), 1379-1394; **additional readings TBA**.

Week #10: Set-up for Group Projects – Introduction to Problem-based Learning

Dates: TBD

Readings: to be determined by group

Week #11: Group Meetings

Dates: TBD

Readings: to be determined by group

Week #12: Group Meetings

Dates: TBD

Readings: to be determined by group

Week #13: Group Meetings

Dates: TBD

Readings: to be determined by group

Week #14: Group Meetings

Dates: TBD

Readings: to be determined by group

Week #15: Group Presentations

Dates: TBD

***PowerPoint slides due***

***Written report due***

***Written self/peer evaluation due***