INTA 3044/8803 – Global Politics of Technology

FALL 2017

Tuesday/Thursdays, 1:30pm – 2:45pm
Instructional Center Room 115

Instructor: Dr. Diane Alleva Cáceres

Office Hours: By Appointment. Room 143, Habersham Building.

Contact Information: email: diane.alleva@inta.gatech.edu; Tel: 404-374-7682.

OVERVIEW

In this course, we will examine the economic and political dynamics that influence how regulations governing technology are created and adopted around the world. We also explore why some countries are better than others at innovating.

Goals

By the end of this course, students will be able to:

- Identify, compare and evaluate different sets of institutions (finance, research & development, skills, other) governing different types of technologies across countries;
- Apply theoretical frameworks towards understanding innovation and its impact on economic change;
- Trace a technology over time alongside regulations/institutions designed to govern it;
- Prepare a policy or corporate strategy memo.

This course will investigate the economic and political dynamics of technological innovation and the role that institutions play in its diffusion globally. We ask: How do we define institutions, particularly science and technology ones? What do we mean by technology? Why do some countries adopt similar regulations and standards governing technologies while others do not?
What are the different paths that technological innovation and diffusion take and how do they impact productivity and competitiveness? Who governs these processes? Ultimately these questions help us understand the role of the state, markets and society in shaping technological and economic change. While the subject is vast, the scope of the course helps keep it manageable. It draws from the scholarly and popular literature as well as industry examples such as digital technology, agribusiness, energy, life sciences and advanced manufacturing. The course also compares US technology innovation strategies with those of Europe, China and developing countries, among others.

The course is open to advanced undergraduates and graduate students. Prior work in political science or economics is strongly recommended.

I have tried to keep your weekly readings to a manageable level, though as you can imagine it is not easy given the breadth and depth of the subject. Much has been written over the last couple of decades. The course delves more deeply into economic, political, and technological elements. However, you are given considerable flexibility to choose research topics of particular interest to you.

Please keep apprised of current issues regarding the economic and political dynamics of technological innovation by reading a good daily or weekly publication such as The Wall Street Journal, The Financial Times, The New York Times, and/or The Economist. I will also be posting current event articles on T-Square from time to time. These will help link some of the more conceptual themes in the course with real world events.
COURSE REQUIREMENTS

Papers, Exams, Projects and Grades:

Research Paper: 40%. The course requires a 15-20 page, double-spaced research paper. The study should examine a research question of your choosing related to any one of the syllabus’ four modules or their subtopics.

Policy/Strategy Memo: 25%. Write a 3-5 page, double-spaced policy or corporate strategy memo based on a major global technology issue. Examples may be climate change, nuclear energy, digital security, health, among many others. Students may choose their format (instructor will provide samples). The goal is to gain experience in clearly writing a memo that persuades policy/strategy-makers to choose what you argue to be the most efficient and effective policy/strategy. Details to be discussed at the beginning of the course.

Class Participation: 35%. Class participation is critical to the success of this course. I expect each student to attend all classes and read all assignments prior to the start of each class. In addition, your active engagement in discussions, group projects, and two presentations are required: 1. A power-point presentation/critical analysis of two readings for that class, and 2. A five-minute report on the latest technology/regulatory news. The report should define the technology/regulation, address why you think it is important and anticipate how it might impact society. One major in-class group project requires students to choose a technology (sample list provided), trace and compare its evolution in two countries alongside regulatory regimes and other institutions from creation to adoption or displacement. Your group will then present your finding to the class. Groups will be formed during the class prior to the first day of the project. These elements comprise your participation grade. All views are welcome as we all learn from each other’s insights.

Student Honor Code/Academic Honesty: Adherence to the Student Honor Code is expected. The Academic Honor Code is explained in detail in the GIT General Catalogue or at http://www.deanofstudents.gatech.edu/Honor/. Any instance of suspected academic dishonesty (e.g., plagiarism; cheating on an examination) will be referred to the Office of the Dean of Students for disciplinary action.

Electronic Media: Please turn off your cell phone before class. Laptops are permitted ONLY for research and reference during class.
**T-Square:** T-Square will be used as a general bulletin board for the class and site for materials and added readings. It is your responsibility to access this important information source often.

**Special Note:** The instructor reserves the right to change session topics, exam dates, assignments throughout the semester. However, students will be given adequate notice of changes.
COURSE READINGS

Readings designated with a “◆” symbol are downloadable from T-Square

PART I: Defining and Understanding Institutions and Technology for Economic Growth

Week 1

August 22  What are institutions (and those particularly related to S&T?) What do we mean by “Technology”?


Recommended:


https://www.oecd.org/sti/ind/48350231.pdf (technology intensity definition)


August 24  Historical context: Technology Cases

◆F.M. Scherer (1965), Invention and Innovation in the Watt-Boulton Steam-Engine Venture,

**Week 2**

**August 29**

CLASS LOCATION CHANGE: Instructional Center 113

Dr. Alasdair Young

**Technological change and employment**

Technological change can have all sorts of economic effects with political implications. It is necessary for productivity growth, which is key to raising living standards. It can, however, have disruptive effects. It may increase demand for some resources (particular types of land or labor) while reducing that of others (e.g., other types of labor). A key contemporary issue is the extent to which middle-class wage stagnation has been driven by trade or technological change.

**Reading**


**August 31**

The Politics of Innovation: Some Theoretical Frameworks

Taylor, T. (2016). The politics of innovation: why some countries are better than others at science and technology. Oxford University Press. (Chapters 1 and 4)


**Recommended:**


Print Publication Date: Jun 2008
Week 3

September 5  Cases: China, US, Sweden - Innovation Strategies


Recommended:


September 7  Guest Speaker

PART 2  Explaining the Process of Technological Innovation, Diffusion and Economic Change

Week 4

September 12  Economic Perspectives

◆ J.A. Schumpeter (1911) The Theory of Economic Development, Ch. 2,4,6


Recommended:


September 14 Innovation Systems: Institutions, Networks and Organizations


Recommended:


**Week 5**

**September 19**

**Diffusing Technologies and Institutions**


Recommended:


**September 21**

**IN-CLASS GROUP PROJECT - Tracing and Comparing Technology Diffusion, Adoption or Displacement among Countries**

We will be forming subgroups and each group will select a technology to trace based on the resources listed below OR a technology of your own choosing.

See James Fallow’s article - “The 50 Greatest Breakthroughs Since the Wheel” in *The Atlantic Magazine* on T-Square for an historical ranking of major technological breakthroughs.

More recent technological advances:
Privacy & Security: Cyber Security technologies
Health: Stem cells or robotics
Finance: Blockchain
Advanced manufacturing/other: Artificial Intelligence
Energy & Environment: Clean technologies; alternative energy (wind, solar, wave etc.)
Food/Food processing: Genetically modified organisms (GMOs); robots; delivery apps etc.

Week 6

September 26  IN-CLASS GROUP PROJECT
September 28  IN-CLASS GROUP PROJECT PRESENTATIONS

Week 7

October 10  NO CLASS – FALL BREAK

PART 3  The Role of Regulatory and Technology Standards

What are regulatory and technology standards? How are they created, diffused globally and what are their effects?

October 12  Understanding Standards

Murphree, Michael. Standards Presentation.
https://prezi.com/hkqn5gsertc7/standards/?utm_campaign=share&utm_medium=copy


Week 8

October 17  Cases


Butler, Nick (2017). It is time for Europe to face its nuclear challenge. Financial Times. MAY 1, 2017. https://www.ft.com/content/2b79ac79-aef0-3252-b712-7c5cddeef171

October 19 Standards as Market Creators?


Week 9

October 24 Cases


October 26 Creating and Diffusing Standards Globally


*POLICY/STRATEGY MEMO DUE OCT. 26th at beginning of class*

Week 10

October 31 Guest Speaker

PART 4: Globalization, Technology and Governance

November 2 Who Governs? Technological Innovation and Industrial Policy


Recommended:


Week 11

November 7 Levels of Governance


November 9

Potential Site Visit - Local Firm Active in Innovation Globally. Visit contingent upon firm’s schedule.

*RESEARCH PAPER DUE NOV. 9th at beginning of class*

Week 12

November 14

FDI, Trade and Spillovers


November 16

Cases


Week 13

November 21

Guest Speaker - Guy Tessler, President, CONNEXX America-Israel Business Connector
### Week 14

**November 23**  
NO CLASS – THANKSGIVING BREAK

---

**Week 14**

---

**November 28**  
Special Issue: Privacy & Security


**November 30**  
Special Issue: Ethics in Science & Technology


[https://www.ft.com/content/8e228692-f251-11e6-8758-6876151821a6#myft:saved-articles:page](https://www.ft.com/content/8e228692-f251-11e6-8758-6876151821a6#myft:saved-articles:page)

---

**Week 15**

---

**December 5**  
LAST DAY OF CLASS – POT LUCK!

Course Review