

**COURSE PURPOSE:** Regulation touches nearly every aspect of our professional and personal lives, including areas such as environment, energy, transportation, communications, and health/safety. It involves multiple stakeholders with conflicting objectives; competing justifications and approaches; conflicts about the roles of public judgments and scientific and technical expertise in the face of profound causal uncertainties; the balancing of costs/risks with benefits; and the mixture of many types of knowledge in pursuit of effective and efficient solutions. Georgia Tech students who intend to become leaders in business, government, and law would benefit in their careers from a thorough understanding of how complex problems such as these can be addressed – and the regulatory realm would benefit from having more inputs from professionals with such an understanding.

This course will begin by examining general theories of regulation and the economic, legal, and political justifications that have been used to explain, justify, or criticize regulatory policies. Students will learn about the regulatory process and how professionals (scientists, engineers, managers, policy analysts, etc.), citizens, and interest groups can shape regulatory policies. We also will examine legal constraints on regulation, including administrative law and procedures, accountability, and adversarial decision-making.

Because many regulatory issues have important science and technology implications, particularly related to the assessment and management of risk, we will examine the difficulties in risk-relevant policy; the roles of statutory, legal, and perceptual constraints in shaping risk regulation; the implications of risk measurement and management techniques for regulatory policy; the processes by which risk is balanced with social and economic goals; and the communication of risk-relevant information. Students will conduct research on the case of nanotechnology as an example of an emerging area of regulation, using lessons learned from other types and eras of regulation to help us anticipate the regulation of nano risks.

**LEARNING OBJECTIVES:** After successfully completing this course, students will:

- have a clear understanding of the political, economic, and legal rationales for regulation,
- understand the concepts of markets, market failures and non-market failures as applied to regulatory policies,
- have a developed awareness of the role of administrative law in shaping regulatory procedures and decisions,
- understand the interactions among the three branches of government and the regulatory agencies,
- be aware of the strengths and weaknesses of experts and the public as participants in regulatory policy,
- appreciate the roles of risk and uncertainty in complex decision making, and
- be ready to accommodate diverse values, types of knowledge, and interests in understanding policy disputes.

**COURSE REQUIREMENTS:** There are no prerequisites for this course other than a POL 1101-level understanding of American government. We will read and discuss topics related to law, history, economics, and politics but I do not assume that you have a background in those areas. Nevertheless, I expect students to have an open and inquisitive mind about other approaches to understanding policy. A fundamental requirement for this course is: if you are confused about something, ask me.

Class discussions will synthesize and extrapolate from assigned readings. All students should complete the assigned readings *before* the class for which they are listed. Students will be expected to share relevant personal observations and experiences with their colleagues; those who remain silent during class will be unable to receive an A in the course. Participation is also based on attendance; a late arrival is counted as an absence.

4803 students will sign up for one or more class meeting dates for which they will be responsible for providing an abbreviated form of class minutes: students will note the major learning points gleaned from class discussions, as well as “muddy points” about which there is some confusion or incompleteness. These notes will be emailed to the professor by 6pm of the day preceding the next class meeting. 8803 students will select at least two of the readings required for graduate students and provide a professional 5-10 minute presentation and discussion of their major points.

For all students there will be three short papers (<8 pages) during the semester in which students use assigned and other readings, as well as class discussions, to analyze aspects of current regulatory issues. For example, the Office of Management and Budget recently issued guidelines (“A-4”) to federal agencies “to assist analysts in the regulatory agencies by defining good regulatory analysis”; in one assignment, students will examine the normative value assumptions in the A-4 guidelines, the scientific challenges in providing the data and theories it recommends, and the responses of various political stakeholders. In another assignment students will work in teams to analyze and recommend particular aspects of appropriate regulatory responses to the postulated risks from nanotechnology. The third assignment will be in response to student interests. There will be an in-class midterm and a take-home final exam that ask students to synthesize and extend ideas presented in the readings and in class discussions. Graduate students will also develop an undergraduate course syllabus with reading materials, course outline, etc., relating to an area of regulation of particular interest.

**GRADES (4803):**

Short papers (3)	15% each
Midterm exam	20%
Final exam	25%
Participation	10%

**GRADES (8803):**

Short papers (3)	10% each
Midterm exam	20%
Final exam	25%
Course development	20%
Participation	5%

**READINGS:**

- Cornelius M. Kerwin, *Rulemaking: How Government Agencies Write Law and Make Policy*, 2<sup>nd</sup> ed., CQ Press, 2003.
- Cass Sunstein, *Risk and Reason: Safety, Law, and the Environment*, Cambridge Univ. Press, 2002.
- Additional assigned readings will be available on the web or through T-Square.

The reading load for 4803 students averages 95 pages per week from the texts and from web and T-Square documents. The weekly reading load will vary somewhat, so plan ahead.

On the course outline, items marked with an asterisk (\*) are **required reading for all students**.

Readings marked with a + are **required for 8803 students**.

Other items listed without a \* or + are recommended. In your readings and research for this course you should find additional sources that are especially useful; please bring them to my attention.

**THE RULES:**

Remember that you are always bound by the Georgia Tech Honor Code. If you have any questions about what is permitted and forbidden, ask first! This applies particularly to cut-and-paste work in your written papers.

My office hours are Tuesday 2-3 and Thursday 11-12. I cannot guarantee that I will always be available during those periods, but I am usually near my office. If you need/want to talk with me, email is the best way to ensure or arrange a meeting.

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## COURSE OUTLINE:

This outline describes the order in which topics and readings will be covered, with tentative dates. We expect several guest speakers and other events to affect the dates on which we will begin each topic. A course schedule will be posted to T-Square and occasionally updated. Changes will be announced in class and by email.

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### I. BACKGROUND

August 23

#### 1. What is regulation?

- \* Kerwin, *Rulemaking*, ch. 1
- \* Federal Register, Administrative Procedure Act § 551. Definitions at [www.archives.gov/federal-register/laws/administrative-procedure/551.html](http://www.archives.gov/federal-register/laws/administrative-procedure/551.html) (WEB)

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August 28, 30

#### 2. A brief history of regulation from railroads to nanotechnology

- \* Kerwin, *Rulemaking*, ch. 1.
- \* Robert L. Rabin, "Federal Regulation in Historical Perspective." *Stanford Law Review*, 38, May, 1986, 1189-1327. (T-SQUARE)  
Without footnotes this reading is 93 pages; I provide a reading guide at the top of the article. We will refer to this material repeatedly throughout the semester.
- \* Stanley Laskowski, Richard Morgenstern, Allen Blackman, "Environmental Decentralization: Seeking the Proper Balance between National and State Authority," *Resources for the Future*, Oct. 2005 (15pgs) (T-SQUARE)
- \* Explore *Nanodot* (nanotechnology weblog) at [www.foresight.org/nanodot/](http://www.foresight.org/nanodot/)
- + J. Gregory Sidak and Daniel F. Spulber, 1996, "Deregulatory Takings and Breach of the Regulatory Contract," *New York University Law Review*, 71, 851- . (excerpts on T-SQUARE)
- + William K. Jones, "Origins of the Certificate of Public Convenience and Necessity" *Columbia Law Review* 79 (April 1979), 426-516. Read particularly 426-433, 447-451, 475-482, 501-516. (T-SQUARE)
- James Anderson, *Emergence of the Modern Regulatory State*, 1962, chs. 1-4 (pp. 1-91). (T-SQUARE)
- Podcast: *The Implications for Health, Safety and the Environment of the Nanotech Revolution* (33 mins, File size: 13.4Mb, File Type: mp3); [www.azonano.com/podcasts/nano.mp3](http://www.azonano.com/podcasts/nano.mp3))
- Technology Liberation Front podcasts on information technology, the media, and regulation at [www.techliberation.com/podcast/](http://www.techliberation.com/podcast/)
- Browse *Regulation* magazine, <http://www.cato.org/pubs/regulation/index.html>

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### II. MARKETS AND TECHNOLOGY

September 4, 6

#### 3. Markets, market failures, and regulatory responses

- \* Deborah Stone, ch. 1 "The Market and the Polis," *Policy Paradox and Political Reason*, 1988, Scott, Foresman, pp. 13-26. (T-SQUARE)
- \* Office of Management and Budget, "Circular A-4: Regulatory Analysis," at <http://www.whitehouse.gov/omb/circulars/index.html> (to download, scroll to "OMB Circulars in Numerical Sequence"), pp. 1-9. (WEB, T-SQUARE)
- \* Breyer, *Regulation and Its Reform*, ch. 1, pp. 15-35 (T-SQUARE)
- \* Peter Navarro, 2005, "Cell Phone Roulette and 'Consumer Interactive' Quality," *Journal of Policy Analysis and Management*, 24, pp. 435-441. (T-SQUARE)
- \* Harvey Cox, "The Market as God," *Atlantic Monthly*, March 1999, 18-23. (T-SQUARE)
- + Charles Wolf, Jr. "Non-Market Failures' and Market Failures," RAND, 1978, at [www.rand.org/pubs/papers/P6136/](http://www.rand.org/pubs/papers/P6136/) (WEB)

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September 11, 13, 18 (Guest speaker one meeting)

#### 4. Technology, command-and-control, hegemonic agencies, incentives, and alternatives to regulation

- \* Environmental Protection Agency, *The United States Experience with Economic Incentives for Pollution Control*, 2001. Summary and ch. 3 (pp. 13-30) (T-SQUARE)
- \* Robert N. Stavins. Market-Based Environmental Policies: What Can We Learn from U.S. Experience (and Related Research)?" *Resources for the Future*, 08/2003 (28 pgs) (T-SQUARE)

- \* Winston Harrington and Richard Morgenstern, "Economic Incentives versus Command and Control" Resources for the Future, 2004 (5 pgs), at [www.rff.org/RegulatoryProgramsAndInstitutions.cfm#ResourcesArticles](http://www.rff.org/RegulatoryProgramsAndInstitutions.cfm#ResourcesArticles) (WEB)
- \* Kiran Verma, Barry Mitnick, and Alfred Marcus, 1999, "Making Incentive Systems Work: Incentive Regulation in the Nuclear Power Industry," *Journal of Public Administration Research and Theory*, 9, 395-436. (T-SQUARE)
- + Barbara S. Esbin & Gary S. Lutzker, "Poles, Holes and Cable Open Access: Where the Global Information Superhighway Meets The Local Right-of-Way," 10 *CommLaw Conspectus* 23-79. (WEB; Lexis-Nexis; (T-SQUARE))
- + Dana Petersen et al., 2006, "Community-Based Participatory Research as a Tool for Policy Change: A Case Study of the Southern California Environmental Justice Collaborative," *Review of Policy Research* 23:2, 339-353. (T-SQUARE)

### ----- III. PROCESS

**September 20, 25, 27**

#### **5. Administrative law and procedures: legal constraints and powers of regulatory agencies**

- \* Kerwin, *Rulemaking*, chs. 2, 3
- \* Examine at least one Notice of Meeting, one Proposed Rule, and one Rule in a recent Federal Register, at [www.archives.gov/federal-register/the-federal-register/](http://www.archives.gov/federal-register/the-federal-register/). Bring a short written description of each to class.
- \* Administrative Procedure Act, § 553. "Rule making," at <http://www.archives.gov/federal-register/laws/administrative-procedure/553.html>
- \* Explore the OMB-OIRA website at [www.whitehouse.gov/omb/inforeg/regpol.html](http://www.whitehouse.gov/omb/inforeg/regpol.html)
- + Langbein and Kerwin, "Regulatory Negotiation versus Conventional Rule making: Claims, Counterclaims, and Empirical Evidence," *J Public Adm Research Theory*, July 2000, 10: 599-632

**October 2, 4, 11 (October 9: Fall Break)**

#### **6. Political control of regulators: the roles of the executive, legislative, and judicial branches**

- \* Kerwin, *Rulemaking*, chs. 4, 5, 6 (President, Congress, bureaucracy, public, interest groups)
- \* Sunstein, *Risk and Reason*, ch. 8
- \* Scott Furlong and Cornelius Kerwin, "Interest Group Participation in Rule Making: A Decade of Change," *J Pub Admin. Research and Theory*, July 2005, 15: 353-370. (T-SQUARE)
- \* Richard Barke, "Regulatory Delay as Political Strategy," in Howard Ball, ed., *Federal Administrative Agencies*, 1988, 144-156 (T-SQUARE)
- \* Federal Register, Administrative Procedure Act, "The Freedom of Information Act" and "Open Meetings" 5 U.S.C. § 552 and § 552b. Open meetings; scan § 552a ("Next" at bottom of § 552) at [www.archives.gov/federal-register/laws/administrative-procedure/552.html](http://www.archives.gov/federal-register/laws/administrative-procedure/552.html)
- + David L. Weimer, 2006, "The Puzzle of Private Rulemaking: Expertise, Flexibility, and Blame Avoidance in U.S. Regulation," *Public Administration Review*, 569-582. (T-SQUARE)
- + Marissa Golden, "Interest Groups in the Rulemaking Process," *J of Pub Admin Research and Theory*, April 1998 (T-SQUARE)
- Explore OMB Watch [www.ombwatch.org/regs](http://www.ombwatch.org/regs)

**October 16, 18, 23 (Guest Speaker one meeting)**

#### **7. Experts and the public: who participates, who decides?**

- \* Kerwin, *Rulemaking*, ch. 5
- \* Frank Fischer, "Environmental Crisis and the Technocratic Challenge: Expertise in the Risk Society," in *Citizens, Experts, and the Environment: The Politics of Local Knowledge*, Duke Univ. Press, 2000, ch. 3 (pp. 47-67). (T-SQUARE)
- \* Sheila Jasanoff, "EPA and the Science Advisory Board," in *The Fifth Branch: Science Advisers and Policymakers*, Harvard Univ. Press, 1990, chs. 4, 5 (pp. 61-100). (T-SQUARE)
- \* Thomas O. McGarity, Jr., "Defending Clean Science from Dirty Attacks by Special Interests," in Wendy Wagner and Rena Steinzor, eds., *Rescuing Science from Politics: Regulation and the Distortion of Scientific Research*, Cambridge Univ. Press, 2006, 24-45. (T-SQUARE)
- \* Donald T. Hornstein, "The Data Wars, Adaptive Management, and the Irony of 'Sound Science'", in Wendy Wagner and Rena Steinzor, eds., *Rescuing Science from Politics: Regulation and the Distortion of Scientific Research*, Cambridge Univ. Press, 2006, 103-119. (T-SQUARE)
- + GAO, "EPA's Science Advisory Board Panels: Improved Policies and Procedures Needed to Ensure Independence and Balance," GAO-01-536, June 2001. (WEB; T-SQUARE)
- + Thomas O. McGarity, Jr., "Public Participation in Risk Regulation," *Risk: Health, Safety, and Environment*, vol. 1, pp. 103-113, at [www.fplc.edu/risk/vol1/spring/mcgarity.htm](http://www.fplc.edu/risk/vol1/spring/mcgarity.htm)

- explore “The Pump Handle” (public health and the environment) <http://thepumphandle.wordpress.com/>

#### ----- IV. ANALYSIS AND DECISIONS

**October 25, 30**

##### **8. Comparing costs and benefits**

- \* John L. Moore, “Cost-Benefit Analysis: Issues in Its Use in Regulation,” Congressional Research Service, 1995, at [www.ncseonline.org/nle/crsreports/risk/rsk-4.cfm](http://www.ncseonline.org/nle/crsreports/risk/rsk-4.cfm) (WEB)
- \* Office of Management and Budget, “Circular A-4: Regulatory Analysis,” at [www.whitehouse.gov/omb/circulars/index.html](http://www.whitehouse.gov/omb/circulars/index.html), scroll to “OMB Circulars in Numerical Sequence”), pp. 9-42. (WEB, T-SQUARE)
- \* Matthew Adler and Eric Posner, 1999. “Rethinking Cost-Benefit Analysis” *Yale Law Journal* 109: 165-247. Read 165-176. (T-SQUARE)
- + Winston Harrington, Richard Morgenstern, and Peter Nelson, (2000), “On the Accuracy of Regulatory Cost Estimates” *Journal of Policy Analysis and Management* 19: 297-322. (T-SQUARE)
- + Robert W. Hahn, 2004. “The Economic Analysis of Regulation: A Response to the Critics,” *University of Chicago Law Review*, 71 (Summer), 1021-1054. (T-SQUARE)

**November 1, 6**

##### **9. Understanding risk and uncertainty**

- \* Sunstein, chs. 1, 2, 3, 6
- \* Thomas R. Stewart, “Uncertainty, Judgment, and Error in Prediction,” in Daniel Sarewitz, Roger Pielke, and Radford Byerly, eds., *Prediction: Science, Decision Making, and the Future of Nature*, Island Press, 2000, 41-57. (T-SQUARE)
- \* Daniel Metlay, “From Tin Roof to Torn Wet Blanket: Predicting and Observing Groundwater Movement at a Proposed Nuclear Waste Site,” in D. Sarewitz, R. Pielke, and R. Byerly, eds., *Prediction: Science, Decision Making, and the Future of Nature*, 2000, 199-228. (T-SQUARE)
- \* Steve Rayner, “Prediction and Other Approaches to Climate Change Policy,” in D. Sarewitz, R. Pielke, and R. Byerly, eds., *Prediction: Science, Decision Making, and the Future of Nature*, 2000, 269-296. (T-SQUARE)
- + Sunstein, ch. 7
- + David E. Adelman, “Two Models for Scientific Transparency in Environmental Law,” in Wendy Wagner and Rena Steinzor, eds., *Rescuing Science from Politics: Regulation and the Distortion of Scientific Research*, Cambridge Univ. Press, 2006 193-213 (T-SQUARE)
- + Alan Krupnick et al., *Not a Sure Thing: Making Regulatory Choices under Uncertainty*, Resource for the Future, 2006, at [www.rff.org/rff/News/Features/Not-a-Sure-Thing.cfm](http://www.rff.org/rff/News/Features/Not-a-Sure-Thing.cfm) (WEB) Chapter 2, “Uncertainty in the Literature and in EPA RIAs,” (pp. 5-50)

**November 8, 13, 15 (Guest speaker one meeting)**

##### **10. The politics of risk regulation**

- \* Sunstein, chs. 4, 5
- \* National Academy of Sciences, *Scientific Review of the Proposed Risk Assessment Bulletin from the Office of Management and Budget*, National Research Council, 2007. Downloadable from [www.nap.edu/catalog/11811.html](http://www.nap.edu/catalog/11811.html). Read Summary (pp. 1-9), ch. 3 (“Risk Assessment Definition and Goals,” pp. 26-35), and pp. 43-54 (“Uncertainty”). (WEB; T-SQUARE)
- + Congressional Research Service, “OMB’s Proposed Bulletin on Risk Assessment,” June 29, 2006. (T-SQUARE)
- + Office of Management and Budget, “Circular A-4: Regulatory Analysis,” (scroll to “OMB Circulars in Numerical Sequence”), pp. 9-38; at <http://www.whitehouse.gov/omb/circulars/index.html>. (WEB)
- + Alan Krupnick et al., *Not a Sure Thing: Making Regulatory Choices under Uncertainty*, Resource for the Future, 2006, at <http://www.rff.org/rff/News/Features/Not-a-Sure-Thing.cfm> (WEB)  
Chapter 4: “Techniques for Communicating Uncertainty to Agency Decisionmakers,” (pp. 171-202)  
Chapter 5: “Presentation of Uncertainty Information to High-Level EPA Decisionmakers,” (pp. 203-212)
- + Schroeder, Christopher, “The Precautionary Principle,” Center for Progressive Regulation Perspectives, at [www.progressiveregulation.org/perspectives/precaution.cfm](http://www.progressiveregulation.org/perspectives/precaution.cfm)
- + John Graham, “Risk and Precaution,” transcript of remarks delivered at AEI-Brookings Joint Center conference, “Risk, Science, and Public Policy: Setting Social and Environmental Priorities,” October 12, 2004.  
[www.whitehouse.gov/omb/inforeg/speeches/101204\\_risk.html](http://www.whitehouse.gov/omb/inforeg/speeches/101204_risk.html)
- + Sunstein, chs. 8, 9, 10

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**November 22 – Thanksgiving Holiday**

----- **V. NEW REGULATION: NANOTECHNOLOGY**

**November 20, 27, 29**

**11. Regulating the unknown: nanotechnology**

*(other materials to be added)*

- \* Glenn H. Richards, "Environmental Regulation of Nanotechnology: Some Preliminary Observations," *Environmental Law Review* 31 (2001), 10681-10688 ([foresight.org/impact/31.10681.pdf](http://foresight.org/impact/31.10681.pdf)) (WEB)
- \* FDA, Nanotechnology: A Report of the U.S. Food and Drug Administration Nanotechnology Task Force, July 25, 2007 ([www.fda.gov/nanotechnology/taskforce/report2007.html](http://www.fda.gov/nanotechnology/taskforce/report2007.html)) (WEB)
- \* EPA, "Final Nanotechnology White Paper," prepared for the U.S. Environmental Protection Agency by members of the Nanotechnology Workgroup, February 15, 2007 ([www.epa.gov/osa/nanotech.htm](http://www.epa.gov/osa/nanotech.htm)) (WEB)
- "NRDC Advances Regulation of Nanotechnology to Protect Human Health" [www.nrdc.org/media/2007/070515.asp](http://www.nrdc.org/media/2007/070515.asp) (WEB)
- Gary E. Marchant and Douglas J. Sylvester, Transnational Models for Regulation of Nanotechnology," *Journal of Law, Medicine, and Ethics*, Winter 2006, 2-13 ([cns.asu.edu/cns-library/documents/Marchant\\_Independent.pdf](http://cns.asu.edu/cns-library/documents/Marchant_Independent.pdf)) (WEB)

----- **VI. GROUP PRESENTATIONS**

**December 4, 6**

**12. Group presentations**