

PROPOSAL PROCEDURES CHECKLIST

Before academic units can advertise undergraduate concentrations or include them in their offerings as described in the university catalogs, they must be recommended for approval by the Curriculum and Academic Programs Committee and approved by the Executive Vice President and Provost.

A complete proposal should include:

- X1. A supporting letter from the chair of the academic unit verifying that:
 - The proposed concentration has been reviewed and has received faculty approval through appropriate governance procedures in the unit.
 - The unit has the resources to support the concentration as presented in the proposal, without impacting core course resources.
- X 2. A supporting letter from the office of the supervising dean verifying that the concentration has been reviewed and has received approval through appropriate governance procedures in the college.
- X 3. A supporting letter from each college/school dean from which individual courses, or the entire concentration, are taken.
- X 4. A statement concerning demand for the program (student/community/market).
- X 5. A list of the knowledge, competencies, and skills (learning outcomes) students should have when they complete this proposed concentration. Examples of program learning outcomes can be found at (<http://www.asu.edu/oue/assessment.html>).
- X 6. A description of the requirements for this concentration. Be specific in listing required courses and specify the total minimum number of hours required for the concentration.
 - Are any new courses required? If so, provide course syllabi and Proposal for Curriculum Action forms.
- X 7. A list of the primary faculty participants.
- X 8. A minimum residency requirement: How many hours of the concentration must be ASU credit?
- X 9. Please prepare and attach a Major Map.
- X 10. A completed Appendix document. This information is to be used during the implementation phase to ensure this program appears correctly and completely on Degree Search.
- X 11. Attach other information that will be useful to the review committees and the Office of the Provost.

PROPOSAL FOR CONCENTRATION IN Science and Technology Policy IN THE BS IN PUBLIC SERVICE AND PUBLIC POLICY

1. Demand for the program (student/community/market)

Increasing demand for public services and retiring baby boomers has created an increase in job opportunities for graduates in the public sector. The federal government is the nation's largest employer with nearly 2 million people employed by the federal government across the country, and 84.6% of those jobs exist outside the Washington, D.C. area. The Partnership for Public Service estimates that the federal government alone will hire nearly 273,000 new employees by 2012 for mission-critical positions. Students with a preparation in academic areas related to public service will have an advantage in that market.

The Bachelor of Science in Public Service and Public Policy (PSPP) prepares students for work in government at all levels and nonprofit organizations through comprehensive coverage of topics in public policy, public leadership and management and urban studies. Students discover the challenges of management and learn how to lead a public organization and understand the process of policy development. The minor will similarly introduce students to the policy process. The BS in PSPP is designed to give students a solid foundational understanding of administration, leadership and policy analysis in the service of public goods.

As science and technology have become increasingly central to modern life, the governance and management of processes of technological change—and the social, economic, and political transformations that accompany them—has become an increasingly important task for governments, businesses, and societies. To inform this task, ASU has invested in a world-class faculty in the field of science and technology policy, the primary field of education and research focused on these challenges. Academically, these faculty are housed across a wide range of schools, departments, and colleges. Thus, although these faculty teach a substantial number of relatively closely related undergraduate courses, there is currently no established mechanism for students to use these courses as the basis for a coherent, integrative educational program.

To address this gap, we propose to establish a concentration in Science & Technology Policy that would be available to students in the BS in Public Service and Public Policy offered by the School of Public Affairs.

The concentration in Science and Technology Policy will provide students who have an interest in policy to focus on science and technology-related issues and their policy implications. The courses in the concentration are offered across ASU by interdisciplinary faculty.

Thus students emerge from the PSPP with a concentration in Science and Technology Policy prepared to address policy issues in this substantive area with an understanding of the range of public service careers (including government, nonprofit and for-profit options), the economics of public affairs, the challenge of leadership in the public context, and the dynamics of administering public programs. The internship and capstone elements of the PSPP major will serve to integrate the concentration-specific studies into the broader curriculum.

2. A description of the requirements for this concentration. Be specific in listing required courses and specify the total minimum number of hours required for the concentration

The School of Public Affairs (SPA) core courses provide basic knowledge of policy development, analysis, and implementation. The BS in PSPP already requires students to select one concentration for their major.

Courses required for the major include:

- PAF 200 (3): Public Service and Policy in the 21st century

- PAF 201 (3): Economics and Public Policy
 - PAF 311 (3): Leadership and Change
 - PAF 301 (3): Applied Statistics
 - PAF 302 (3): Public Service Research Methods
 - PAF 340 (3): Contemporary Policy Challenges
 - PAF 460: Public Service Ethics
 - PAF 484 (3 or 6): Internship
- **Required (3 credits):** PAF 350 - Introduction to Science and Technology Policy – This would be a new course, offered on an annual basis by an SLS (Conz, Grossman, Parmentier), PAF (Corley), or POS (Miller, Guston, Fisher) faculty member, specifically for students in the concentration.
 - **Concentration Electives (9 credits):** Students must take three courses from an approved list of electives for the concentration:
 - ASB 394 – Technology and Society
 - BIO 312 – Bioethics
 - BIO 494 – Advanced Bioethics
 - BIS 499 – Individualized Instruction: S&T Policy Research (Staff) –*students would be allowed to use up to 3 credits of BIS 499 to satisfy their concentration, so long as the course was completed with a CSPO faculty member.*
 - GPH 314 – Global Change
 - JUS 494 – Science, Technology & Inequality
 - PHL 385 – Technological Catastrophes
 - PHL 480 – Technology, Ethics & Society
 - POS 294 – Science and Democracy
 - POS 300 – Contemporary Global Controversies
 - POS 364 – National Security/Intelligence/Terrorism
 - POS 394 – Global Environmental Politics
 - POS 394 – Technology and International Politics
 - POS 494 – Middle East Politics
 - POS 494 – Political Development in Latin America
 - POS 494 – Technology and Development in the European Union
 - SOS 320 – Society and Sustainability
 - STS 260 – Politics of Science and Technology
 - STS 318 – Science, Technology and Government
 - STS 325 – Science, Technology and Public Policy
 - WST 340 – Gender, Science, and Technology
 - **Required (3-6 credits):** PAF 400 – Senior Capstone Project.
 - **Required:** Students must take at least 12 credits of upper division courses in the concentration

3. A list of the primary faculty participants.

All School of Public Affairs faculty teach in both the undergraduate and the graduate programs.

<i>From the School of Public Affairs</i>
Tara Blanc
Chris Herbst
Jonathan Koppell
Melissa Kovacs
Joanna Lucio
Spiro Maroulis
Gerald Miller
Kathryn Mohrman
Afsaneh Nahavandi
Laura Peck
Erik Johnston
Elizabeth Corley
<i>From outside the School of Public Affairs</i>
David Conz (School of Letters and Sciences)
Gary Grossman (School of Letters and Sciences)
Mary Jane Parmentier (School of Letters and Sciences)
Clark Miller (School of Politics and Global Studies)
David Guston (School of Politics and Global Studies)
Erik Fisher (School of Politics and Global Studies)

4. A minimum residency requirement: How many hours of the concentration must be ASU credit?

Three out of the five courses in the concentration must be completed at ASU including PAF 400 Senior capstone project and PAF 350 Introduction to Science and Technology Policy.

5. Learning Outcomes

At the conclusion of this concentration, students will be able to:

- Identify fundamentals of how science and technology policy functions in the United States, including how it affects the public sector.
- Recognize political and social contexts that influence these policies.
- Compare the U.S. with other countries to gain perspective on how science and technology policy can vary from country to country.
- Analyze and critique actual science and technology policies that can affect individual lives.
- Evaluate media accounts of science and technology with a more knowledgeable perspective, and cultivate the ability to question, and seek a broader context, for the news read.

6. Major Map - See Attached

APPENDIX - PROPOSAL TO ESTABLISH A NEW UNDERGRADUATE CONCENTRATION

(This information is used to populate the Degree Search/catalog website.
Please consider the student audience in creating your text.)

1. Program Description (150 words maximum)

The School of Public Affairs (SPA) offers a concentration in Science and Technology Policy as part of their BS in Public Service and Public Policy (PSPP). Through this concentration, students who have an interest in public policy can explore the policy implications of science and technology and broaden their educational experience while concentrating in an area that is in high demand.

2. Contact and Support Information

Office Location (Building & Room):

School of Public Affairs, ASU Downtown Campus,
411 N. Central Avenue, UCENT Suite 400
Phoenix, AZ 85004

Campus Telephone Number: (602) 496-0450

Program email address: spa@asu.edu

Program website address: <http://spa.asu.edu/programs/undergraduate/pspp>

3. Additional Program Description Information

- A. Additional program fee required for this program? Yes No X
- B. Does this program have a second language requirement? Yes No X

4. Career Opportunities & Concentrations

Provide a brief description of career opportunities available for this degree program. If program will have concentrations, provide a brief description for each concentration.

The program is primarily focused on individuals working or interested in working in the public sector. The skills and knowledge students acquire allow them to successfully function in many other types of organizations; however the primary focus is on public organizations. A BS in Public Service and Public Policy prepares students for entry and mid-level supervisory and managerial positions in city, county, state, and federal agencies. For those who already have work experience, the degree provides further opportunity for promotion.

The Science and Technology Policy concentration provides students with more specialized knowledge about the policy implication of science and technology-related decisions and action.

5. Additional Admission Requirements

If applicable list any admission requirements (freshman and/or transfer) that are higher than and/or in addition to the university minimum undergraduate admission requirements.)

N/A

6. **Keywords** List all keywords used to search for this program. Keywords should be specific to the proposed program.

City government/agencies
County government/agencies
Federal government/agencies
Government agencies
Policy analysis
Public administration
Public management
Public policy
Public sector
Public service

7. **Advising Committee Code** List the existing advising committee code associated with this degree.

UGPPUM

8. **Minimum Math Requirement** List the minimum math course required to satisfy this degree.

The minimum math requirement for the concentration is the same as for the major, MAT 142

9. **Area(s) of Interest**

- A. Select one (1) primary Area of Interest from the list below that applies to this program.

- | | |
|---|--|
| <input type="checkbox"/> Architecture, Construction & Design | <input type="checkbox"/> Engineering & Technology |
| <input type="checkbox"/> Artistic Expression & Performance | <input type="checkbox"/> Environmental Issues & Physical Science |
| <input type="checkbox"/> Biological Sciences, Health & Wellness | <input type="checkbox"/> Interdisciplinary Studies |
| <input type="checkbox"/> Business, Management & Economics | <input type="checkbox"/> Languages & Cultures |
| <input type="checkbox"/> Communication & Media | <input type="checkbox"/> Law & Justice |
| <input type="checkbox"/> Computing & Mathematics | X Social Science, Policies & Issues |
| <input type="checkbox"/> Education & Teaching | |

- B. Select any additional Areas of Interest that apply to this program from the list below.

- | | |
|---|--|
| <input type="checkbox"/> Architecture, Construction & Design | <input type="checkbox"/> Environmental Issues & Physical Science |
| <input type="checkbox"/> Artistic Expression & Performance | <input checked="" type="checkbox"/> Engineering & Technology |
| <input type="checkbox"/> Biological Sciences, Health & Wellness | X Interdisciplinary Studies |
| <input type="checkbox"/> Business, Management & Economics | <input checked="" type="checkbox"/> Languages & Cultures |
| <input type="checkbox"/> Communication & Media | <input type="checkbox"/> Law & Justice |
| <input type="checkbox"/> Computing & Mathematics | X Social Science, Policies & Issues |
| <input type="checkbox"/> Education & Teaching | |



**2013 - 2014 Major Map
PSPP Science & Technology Concentration, BS (Proposed)**

Term 1	0 - 16 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
		PAF 200: Public Service and Policy in the 21st Century	3	C	<ul style="list-style-type: none"> An SAT, ACT, Accuplacer, or TOEFL score determines placement into first-year composition courses ASU Math Placement Exam score determines placement in Mathematics course ASU 101 is for ASU freshman students only and is not required for transfer students
		ASU 101: The ASU Experience	1		
		ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: English for Foreign Students	3	C	
		Complete 2 courses: Interdisciplinary Requirement	6		
		Global Awareness (G) OR Historical Awareness (H)	3		
		Milestone: Meet with an academic advisor			
		Term hours subtotal:	16		
Term 2	17 - 32 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
		PAF 201: Economics and Public Policy (SB)	3	C	
		ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: English for Foreign Students	3	C	
		MAT 142: College Mathematics (MA)	3		
		Natural Science - Quantitative (SQ)	4		
		Elective	3		
		Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
		Term hours subtotal:	16		
Term 3	33 - 48 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
		POS 110: Government and Politics (SB)	3	C	
		ENG 216: Persuasive Writing on Public Issues (L)	3	C	
		Global Awareness (G) OR Historical Awareness (H)	3		
		Humanities, Fine Arts and Design (HU)	3		
		Natural Science - General (SG) OR Natural Science - Quantitative (SQ)	4		
		Complete Mathematics (MA) requirement.			
		Term hours subtotal:	16		
Term 4	49 - 63 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
		SOC 101: Introductory Sociology (SB)	3	C	
		COM 225: Public Speaking (L)	3	C	
		PAF 311: Leadership and Change (SB)	3	C	
		URB 240: Urban Policy (C)	3	C	
		Humanities, Fine Arts and Design (HU)	3		
		Term hours subtotal:	15		
Term 5	64 - 78 Credit Hours		Hours	Minimum Grade	Notes
		PAF 301: Applied Statistics (CS)	3	C	
		PAF 340: Contemporary Policy Challenges	3	C	
		PAF 350: Introduction to Science & Technology Policy	3	C	
		Interdisciplinary Requirement	3		
		Elective	3		
		Term hours subtotal:	15		
Term 6	79 - 93 Credit Hours		Hours	Minimum Grade	Notes
		PAF 302: Public Serv Research Methods	3	C	

PAF 460: Public Service Ethics	3	C	
ASB 394: Technology and Society OR BIO 312: Bioethics (HU) OR BIO 494: Advanced Bioethics: Feminist Perspectives OR BIO 494: Advanced Bioethics: At the Beginning & End of Life OR BIS 499: (Individualized Instruction) OR GPH 314: Global Change (HU & G) OR JUS 494: Science, Technology, & Inequality OR PHL 385: Technological Catastrophes OR PHL 480: Technology, Ethics, and Society OR POS 294: Science and Democracy OR POS 300: Contemp Global Controversies (SB & G) OR POS 364: National Security, Intelligence, and Terrorism (SB) OR POS 394: Global Environmental Politics OR POS 394: Technology and International Politics OR POS 494: Middle East Politics, Technology and Development in The Middle East OR POS 494: Technology and Development in Latin America OR POS 494: Technology & Development in the European Union OR SOS 320: Society and Sustainability (L or SB) OR STS 260: Politics of Science and Technology (SB) OR STS 318: Science, Technology, and Government (SB) OR STS 325: Science, Technology, and Public Policy (SB) OR WST 340: Gender, Science, and Technology (SB)	6	C	
Upper Division Literacy and Critical Inquiry (L)	3		
Term hours subtotal:	15		

Term 7 94 - 108 Credit Hours **Hours** **Minimum Grade** **Notes**

PAF 400: Senior Capstone Project	3	C	
PAF 484: Internship OR Upper Division Elective	3		
<i>Complete 2 courses:</i> Upper Division Elective	6		
ASB 394: Technology and Society OR BIO 312: Bioethics (HU) OR BIO 494: Advanced Bioethics: Feminist Perspectives OR BIO 494: Advanced Bioethics: At the Beginning & End of Life OR BIS 499: (Individualized Instruction) OR GPH 314: Global Change (HU & G) OR JUS 494: Science, Technology, & Inequality OR PHL 385: Technological Catastrophes OR PHL 480: Technology, Ethics, and Society OR POS 294: Science and Democracy OR POS 300: Contemp Global Controversies (SB & G) OR POS 364: National Security, Intelligence, and Terrorism (SB) OR POS 394: Global Environmental Politics OR POS 394: Technology and International Politics OR POS 494: Middle East Politics, Technology and Development in The Middle East OR POS 494: Technology and Development in Latin America OR POS 494: Technology & Development in the European Union OR SOS 320: Society and Sustainability (L or SB) OR STS 260: Politics of Science and Technology (SB) OR STS 318: Science, Technology, and Government (SB) OR STS 325: Science, Technology, and Public Policy (SB) OR WST 340: Gender, Science, and Technology (SB)	3	C	
Term hours subtotal:	15		

Term 8 109 - 120 Credit Hours **Hours** **Minimum Grade** **Notes**

PAF 400: Senior Capstone Project OR Upper Division Elective	3	C	
PAF 484: Internship	3		
<i>Complete 2 courses:</i> Upper Division Elective	6		
Term hours subtotal:	12		

COPP Interdisciplinary Requirement-Area 2	COPP Interdisciplinary Requirement-Area 3	COPP Interdisciplinary Requirement-Area 1
SWU 171: Introduction to Social Work (SB & H)	NLM 160: Voluntary Action and Community Leadership (SB)	CRJ 100: Introduction to Criminal Justice (SB)
SWU 250: Stress Management Tools (SB)	PRM 120: Leisure and the Quality of Life (SB)	
	PRM 380: Wilderness and Parks in America (SB & H)	

Total Hours: 120
Upper Division Hours: 45 minimum
Major GPA: 2.00 minimum
Cumulative GPA: 2.00 minimum
Total hrs at ASU: 30 minimum
Hrs Resident Credit for Academic Recognition: 56 minimum
Total Community College Hrs: 64 maximum

General University Requirements Legend

- General Studies Core Requirements:
- Literacy and Critical Inquiry (L)
 - Mathematical Studies (MA)
 - Computer/Statistics/Quantitative Applications (CS)
 - Humanities, Fine Arts and Design (HU)
 - Social and Behavioral Sciences (SB)
 - Natural Science - Quantitative (SQ)
 - Natural Science - General (SG)

General Studies Awareness Requirements:

- Cultural Diversity in the U.S. (C)
 - Global Awareness (G)
 - Historical Awareness (H)
- First-Year Composition

General Studies designations listed on the major map are current for the 2013 - 2014 academic year.

February 3, 2012

To: Jonathan Koppell, Dean
Nancy Rodriguez, Associate Dean
College of Public Programs

From: Jeffrey Chapman, Associate Director
School of Public Affairs



Attached is the proposal to establish a concentration in Science and Technology Policy and the BS in Public Service and Public Policy. The concentration in Science and Technology Policy will provide students who have an interest in policy to focus on science and technology-related issues and their policy implications.

The concentration has been reviewed and approved by the School of Public Affairs undergraduate committee and by the School's faculty as a whole.

The concentration relies on existing courses that are regularly offered as part of the undergraduate curriculum in the School of Public Affairs and across the university as interdisciplinary courses. Many of these courses are undersubscribed and therefore have the capacity for additional enrollment. No additional faculty or staff will be needed to implement this concentration.

PAF 350
Introduction to Science & Technology Policy
3 credits

Science and technology are powerful forces in the modern world. They have been hailed as a way to address everything from world hunger to old age. This does not, however, happen automatically, nor does it always work out the way one presumes. Governments make numerous decisions that affect the direction and application of science and technology, and government policies are affected by a myriad of social, political, and cultural factors. This class will explore the variety of ways in which governments make these policies, how the policies shape the development of science and technology and their applications, and how policy may be shaped to create better futures. Governments around the world have coalesced around the idea that science and technology are necessary for the promotion of the good life. We will examine how they put this idea into action by looking at five interrelated topics: Food, Military, Health, Economy, and Sustainability. We will look at the roots of government involvement in each of these areas, how governments address them now, and then look at what might be possible in the future.

Course Learning Objectives:

- Identify fundamentals of how science and technology policy functions in the United States, including how it affects the sectors outlined above.
- Recognize political and social contexts that influence these policies.
- Compare the U.S. with other countries to gain perspective on how science and technology policy can vary from country to country.
- Analyze and critique actual science and technology policies that can affect your lives.
- Evaluate media accounts of science and technology with a more knowledgeable perspective, and cultivate the ability to question and seek a broader context for the news you read.

Course Requirements:

The primary components of the course will be the readings, lectures and films. There is no textbook, and all of the readings are posted on our Blackboard site. The lectures will combine presentation of new ideas and examples with discussion of the readings and collective exploration of ideas and implications. The lectures are designed to be interactive and engaging, and in order to benefit from them, you will need to prepare. Simply reading the required articles is necessary but not nearly sufficient: you will also need to reflect on them. As part of this reflection, each week you will write up two questions that will help us to explore the readings, and find one related current news item. These assignments account for your participation in the class.

Your major academic work for the course will be three brief papers (of 3-4 pages each, double spaced). The first paper will be worth 50 points, and the second and third papers will be worth 75 points each. The specific topic for these papers will be assigned at least two weeks before they are due. In addition to the papers, you will have two exams. The first exam will be online and available per the syllabus schedule. There will be an in class final exam as well.

Participation	100 points
Paper 1	50 points
Paper 2	75 points
Paper 3	75 points
Midterm	50 points
Final	75 points
Total	400 points

Pursuant to the University Grading Scale using the plus/minus system, the cutoff for final grades in the course is:

98%	A+
95%	A
92%	A-
88%	B+
85%	B
82%	B-
78%	C+
70%	C
65%	D

To determine your final percentage, divide your final point total by the total points available in the class (400). For example, a final point total of 375 will equal a percentage total of 93% which will be a final grade of A. Any final percentage total less than 65% will result in a failing grade of E.

Submitting Questions for Participation Points

Every Tuesday and approximately every other Thursday you will need to submit questions and/or reactions to the readings.

On Tuesdays you need to submit any combination of two questions or reactions to the readings. These responses are a way for us to gauge your comprehension of the readings as well as a way for you to spark discussion in class. These responses must be posted on Blackboard through the “Discussions” tab no later than 12:00 Noon on the day of class.

Approximately every other Thursday you need to post a news article relating to that week’s class readings. These should be current, popular news articles from sources such as the New York Times’ science section (or any credible newspaper), Wired Magazine, or even a segment from National Public Radio (Science Friday for example!). In your post please include a link to your article and a brief paragraph explaining why you believe the news article relates to the readings – what about the article is interesting to you. The article and the reaction need to be posted to Blackboard no later than 11:00 am on the day of class.

Each post is worth 5 points, for a total of 100 points across the semester. This accounts for 25% of your overall grade.

Accessing the FMG Videos

Throughout the semester we have a handful of videos you need to watch before coming to class. Many of these videos can be accessed for free through the ASU Libraries

website (any video that cannot be accessed through FMG are noted with alternative instructions). To access the FMG / Films on Demand website follow these links:

ASU Libraries Homepage (<http://lib.asu.edu/>) → ASU Libraries Catalog tab located at the top in the grey bar → FMG on Demand under the “Streaming Media” section → FMG Media → Films on Demand’s website will appear where you can search for the required video.

Absences & Late Work

Attendance will not be recorded in this class. However, the concepts that will be covered in the two exams, as well as the concepts we expect you to cover in each of your three papers, will be discussed in class. Because of this, not attending class will severely impact your grade.

Late work may be accepted for reduced credit. Papers will drop a third of a letter grade for every day it is late (for example an A+ paper will drop to a B+ on the third day it is late). Discussion posts (the Tuesday & Thursday “reactions”) will not be accepted more than 2 days late.

Accommodations for Disabilities:

Accommodations for disabilities are made according to the policy of Arizona State University, which is in compliance with the Americans with Disabilities Act. For more information on ASU’s Disability Resource Center see <http://www.asu.edu/studentaffairs/ed/drc/>. Please let me know if you need any specific accommodations in this course.

Technology Policy

Please make sure you turn off all phone alarms before coming to class. Computers are allowed. However, when using your computer please be aware that what you are doing can be distracting to your peers seated behind you as they are capable of seeing your computer screen.

Special note on plagiarism

If you submit work that is not your own, you will be fully disciplined in accordance with university policies. Plagiarism or cheating in any form will not be tolerated. It is your responsibility to be aware of, understand, and adhere to the rules and regulations of Arizona State University. In the “Student Academic Integrity Policy” manual, ASU defines “Plagiarism” [as] using another's words, ideas, materials or work without properly acknowledging and documenting the source. Students are responsible for knowing the rules governing the use of another's work or materials and for acknowledging and documenting the source appropriately.” Academic dishonesty, including inappropriate collaboration, will not be tolerated. There are severe sanctions for cheating, plagiarizing and any other form of dishonesty. For further details, please consult <http://provost.asu.edu/academicintegrity>.

Introduction

January 5

Introduction to Science & Technology Policy

Introduction to the course

Defining & identifying policy

Defining science & technology

Introduction to science & technology policy

January 10

Today's Grand Challenges

What are they?

Western science

Technology & 'progress'

Crow, Michael. (2007). None Dare Call it Hubris: The Limits of Knowledge. *Issues in Science and Technology*. Winter.

Bush, Vannevar. (1945, July). Science the Endless Frontier. *Report to the President, Office of Scientific Research and Development*.

Retrieved

from: <http://www.nsf.gov/od/lpa/nsf50/vbush1945.htm>

January 17

Public Investment in Science & Technology

Federal funding process

Politics of funding

Neal, Homer A., Smith, Tobin L. & McCormick, Jennifer B. (2008). Federal Funding for Research: Rationale, Impact, and Trends. *Beyond Sputnik: U.S. Science Policy in the Twenty-First Century*. Ann Arbor: The University of Michigan Press, pp. 72-92.

Atkinson, Richard & Blampied, William. (2008). Research Universities: Core of the US Science and Technology System. *Technology in Society* 30 (1), 30-48.

January 12

The Scientific & Technological Foundations of the Economy & Society

Sociotechnical Systems

Theories of technology

Winner, Langdon. (1986). *The Whale and the Reactor*. Chicago: University of Chicago Press. Chapters 1-3

January 19

Expertise, Public Policymaking, & Democracy

Role of scientists, the public, & policymakers

Democracy & decision-making about S&T

FMG Film: *Science Under Attack: Has the Public Lost its Faith in Scientists?* (2011, 51 min, #43946)

Zimmer, Carl. (2011, June 26). It's Science, But not Necessarily Right. *New York Times*.

Pollan, Michael. (2009, September 9). Big Food vs. Big Insurance. *New York Times*.

Revkin, Andrew & Broder, John. (2009, December 6). Before Climate Meeting a Revival of Skepticism. *New York Times*

Post news article & reaction

January 24
Managing Socio-Technical Systems
National, regional and global systems

FMG Film: *Nanoparticles & Mega Fears*.
(2009, 51 min, #41696)

Ellis, Blake. (2010, January 11). Your Most
Dangerous Possession? Your Smart
Phone. *CNN*.

Urbina, Ian. (2010, June 5). In Gulf, It
Was Unclear Who Was in Charge of Oil
Rig. *New York Times*.

Crawford, Susan. (2011, December 4).
The New Digital Divide. *New York Times*.

January 31
Industrialization of Agriculture
Kenner, Robert (Director). (2008). Food,
Inc. [Motion picture]. U.S.: Magnolia
Pictures. Available on Netflix Streaming,
Amazon Video On Demand (\$2.99) and
iTunes (\$3.99)

Hightower, Jim. (1972). Hard Tomatoes,
Hard Times: Failure of the Land Grant
College Complex. *Society* 10(1), 10-22.

February 7
Emerging Food Technologies
Genetically modified foods: U.S. vs. E.U.

FMG Film: *Biotechnology on the Farm and in the
Factory* (2009, 28 min, #39778)

Kuzma, Jennifer & VerHage, Peter (2006).
*Nanotechnology in Agriculture and Food Production:
Anticipated Applications. A Report by the Project on
Emerging Nanotechnologies*, Woodrow Wilson
International Center for Scholars. Washington
D.C.

Food
January 26
The U.S. as an Agricultural Nation
Government subsidies
Land grants

Rogers, Everett M. (1988). The
Intellectual Foundation and History of the
Agricultural Extension Model. *Science
Communication*, 9(4), 492-510.

TED Talk. (2007). *Mark Bittman on What's
Wrong with What we Eat*. Retrieved
from: http://www.ted.com/talks/mark_bittman_on_what_s_wrong_with_what_we_eat.html

Post news article & reaction

February 2
Global Agricultural Research
Green Revolution
Global agribusiness and local impacts

Smith, James. (2009). The
Internationalization of Science. In *Science
and Technology for Development* (38-64).
London: Zed.

Military
February 9
WWI – WWII
S&T arms-race in Europe and WWI
International politics, domestic politics, and
military technology policy
Inter-war years and U.S. policies

Shimshoni, Jonathan. (1990-1991, Winter).
Technology, Military Advantage, and World
War I. *International Security*, 15(3), 187-215.

Smith, Bruce L. R. (1990). Beginnings of
Modern Science Policy & Federal Support for
Basic Research. In Bruce L. R. Smith, *American
Science Policy Since World War II* (29-51).
Brookings Institution Press.

February 14

The Bomb

Politics and policies – origins of nuclear weapons
Nuclear proliferation

FMG Film: Prelinger Archives *A Tale of Two Cities* (1946, 12 minutes, # 41746) and *Survival Under Atomic Attack* (1951, 9 min., #41763)

Rabinowitch, Alexander. (2005, January 1). Founder and Father. *Bulletin of the Atomic Scientists*. pp. 30-37.

Rhodes, Richard. (2004). The Atomic Bomb in the Second World War. In Cynthia C. Kelly (Ed.) *Remembering the Manhattan Project: Perspectives on the Making of the Atomic Bomb and its Legacy*. New Jersey: World Scientific Publishing Co. pp. 17-29

February 21

Future of War

Conventional warfare?
Revolution in military affairs

Arkin, Ronald C. (2009). Ethical Robots in Warfare. *Technology and Society Magazine*, 28(1) pp. 30-33.

Shachtman, Noah (2007, November 27). How Technology Almost Lost the War: In Iraq the Critical Networks are Social. *Wired Magazine*.

Paper One Due

First Exam, Available February 21-24

February 28

The New Politics of Bioeconomy

Epstein, Stephen. (1995). Drugs into Bodies. In *Impure Science: AIDS, Activism, and the Politics of Knowledge*. University of California at Berkeley Press, pp. 208-234.

Thompson, Charis. (2010). Asian Regeneration? Nationalism and Internationalism in Stem Cell Research in South Korea and Singapore. In Aihwa Ong and Nancy Chen (Eds.), *Asian Biotech: Ethics and Communities of Fate* (95-117). Duke University Press.

February 16

Transforming Science in the U.S.

Post WWII period
Role of universities

Eisenhower, Dwight D. (1961, January 17). *Eisenhower's Farewell Address to the Nation*.

Leslie, Stuart W. (1993). Steeple Building in Electronics. *The Cold War and American Science: The Military-Industrial-Academic Complex at MIT and Stanford*. New York: Columbia University Press, pp. 44-75.

Post news article & reaction

Health

February 23

Public Health & the Creation of FDA/NIH

Public health in the U.S.

Global public health

Swann, John P. (2003). History of the FDA. In Meredith A Hickman (Ed.), *The Food and Drug Administration* (9-17). Nova Books.

Articles on the TRIPS Agreement and HIV in developing countries (on BB site)

March 1

New Science, New Diseases, New Industries

FMG Film: *History of Antibiotics* (2006, 30 min, #36095)

Mitman, Gregg (2007). An Inhaler in Every Pocket. In *Breathing Space: How Allergies Shape Our Lives and Landscapes* (206-250). New Haven: Yale University Press.

Smith, Richard & MacKellar, Landis. (2007, September). Global Public Goods and the Global Health Agenda. *Global Health*.

Post news article & reaction

March 6

The Future of "Health"

FMG Film: *Kill or Cure Series* (2005, 25 min #43895) Choose one segment to review

Mooallem, Jon (2010, February 14). Do-It-Yourself Genetic Engineering. *New York Times*.

Venter, Craig. *The Creation of 'Synthetic Life'*. Available from:

<http://www.youtube.com/watch?v=QHlOcNOHd7A>.

March 13

Education, Workforce, & International Competitiveness

FMG Film: *Slaves of the Cyberworld* (2007, 54 min, #41402)

Committee on Science, Engineering, and Public Policy. (2007). The Executive Summary. In *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future* (1-11).

Lowell, Lindsay & Salzman, Hal. (2009, November 11). Will Science and Engineering Now Be a Good Career?" *Education Week Commentary*.

SPRING BREAK NO CLASS MARCH 20 & 22

March 27

S&T Globalization & Developing Countries

Transfer of technology
Use versus production of technology
Informal economics and public policy

Etzo, Sebastian & Guy Collender. (2010, October). The Mobile Phone Revolution in Africa. *African Affairs*.

Economy

March 8

Silicon Valley and the Knowledge Economy

Romer, Paul M. (2007). Economic Growth. In David R. Henderson (Ed.), *The Concise Encyclopedia of Economics*. Liberty Fund.

Zachary, G. Pascal. (2009, November 4). The Global Geography of Innovation. In *Roots of Innovation, E-Journal U.S. Department of State*. (14)11.

Chapter from Manuel Castells, *The Rise of the Network Society*

March 15

Internet Governance and Policy

Global initiatives
Global versus national tensions

Lessig, Lawrence. (2009). Code is Law. In Deborah Johnson and Jameson Wetmore (Eds.), *Technology and Society* (181-194). MIT Press.

Post news article & reaction

(1-11)

March 29

Unequal Access to Knowledge

Crawford, Susan. (2011, December 4). The New Digital Divide. *The New York Times*.

Paper Two Due

April 3

NO CLASS

Sustainability

April 5

Ecology & Environmentalism

FMG Film: *Atmospheric Hole: History of the Ozone Layer* (2006, 30 min, #36092)

Cronon, William. (1992). A place for Stories: Nature History, and Narrative. *Journal of American History*, 78(4), 1347-1376.

Hutchinson, G. Evelyn. (1970). The Biosphere. *Scientific American*, 223(3), 45-53.

April 10

Climate Change

FMG Film: *Human Planet* (2010, 50 min, #43928)

Clark, William. (1989). Managing Planet Earth. *Scientific American*, 261(3), 47-54.

Lenton, Timothy M, Held, Hermann, Kriegler, Elmar, Hall, Jim W., Lucht, Wolfgang, Rahmstorf, Stefan, & Schellnhuber, Hans Joachim. (2008). Tipping Elements in the Earth's Climate System. *Proceedings of the National Academy of Sciences*, 105(6), 1786-1793.

April 17

Planetary Management

MacCracken, Michael. (2006). Geoengineering: Worthy of Cautious Evaluation? *Climate Change*, 77, 235-243.

April 24

Last Day of Class

Review for Exam

Paper Three Due

April 12

Sustainability as a Large Scale Socio-Technical Problem

Barringer, Felicity. (2008, November 27). A land Rush in Wyoming Spurred by Wind Power. *The New York Times*.

Swartz, Spencer & Oster, Shai. (2010, July 18). China Tops US in Energy Use: Asian Giant Emerges as No. 1 Consumer of Power, Reshaping Oil Markets, Diplomacy. *The Wall Street Journal*.

Post news article & reaction

April 19

Catch up & Student Discussion

Post news article & reaction

May 1

Final Exam

12:10 – 2:00 p.m.

Christopher Hiryak

From: Luc Anselin <Luc.Anselin@asu.edu>
Sent: Tuesday, March 06, 2012 6:44 PM
To: Jeffrey Chapman
Cc: luc.anselin@asu.edu; Jonathan Koppell; Christopher Hiryak
Subject: Re: New Undergraduate Proposal--response requested

I support the concentration in Science and Technology in the School of Urban Affairs.
L.

Luc Anselin, Ph.D
Regents' Professor and Walter Isard Chair
Director, School of Geographical Sciences and Urban Planning
Director, GeoDa Center for Geospatial Analysis and Computation
Arizona State University

On Mar 6, 2012, at 3:39 PM, Jeffrey Chapman wrote:

Dear Professor Anselin:

The School of Public Affairs has developed a proposal for a new undergraduate Science and Technology concentration in our Public Service and Public Policy program (see attached).

I am writing to ask for a memo of support for our proposed program. With your participation, this program will provide an excellent opportunity for our undergraduate students who have an interest in policy to focus on science and technology-related issues and their policy implications. I would appreciate your timely feedback before the end of the week, if possible.

Thank you,

Jeff

Jeffrey I. Chapman, Ph.D.
Associate Director, School of Public Affairs
Foundation Professor of Applied Public Finance
School of Public Affairs
Arizona State University
MC 3720
411 N. Central Avenue, suite 450
Phoenix, AZ 85004-0687
602-496-0454

<3.6.12 SandTPolicyPublicAffairs.docx>

From: [Jeffrey Chapman](#)
To: [Christopher Hirvak](#)
Subject: FW: Memo of support
Date: Sunday, March 11, 2012 1:15:25 PM

fyi

Jeffrey I. Chapman, Ph.D
Associate Director, School of Public Affairs
Foundation Professor of Applied Public Finance
School of Public Affairs
Arizona State University
Mail Code 3720
411 N. Central Avenue, suite 450
Phoenix, AZ 85004-0687

602-496-0454

From: Amanda Smith
Sent: Saturday, March 10, 2012 12:25 PM
To: Mary Fonow; Jeffrey Chapman
Subject: RE: Memo of support

Hello,

Sorry I was unable to respond before the end of the week Jeffrey. The correct number for our Gender, Science and Technology course is WST 340.

Hope this helps,
Amanda

Amanda A. Smith
Academic Success Coordinator
College of Liberal Arts and Sciences
School of Transformation
amanda.a.smith@asu.edu
480.965.3897

From: Mary Fonow
Sent: Wednesday, March 07, 2012 3:56 PM
To: Jeffrey Chapman
Cc: Amanda Smith
Subject: RE: Memo of support

Dear Jeffery, I have read your proposal and I am happy to support this new curriculum. WST 395 Gender Science and Technology is offered on a regular basis (in person and online) and we welcome your students. I am copy Amanda Smith who can verify that this is the correct no for the course.

Best, Mary Margaret

Mary Margaret Fonow
Director, School of Social Transformation
Professor, Women and Gender Studies
Arizona State University
PO Box 874902
Tempe, AZ 85287-4902
480-965-2358 (office)
480-965-2357 (fax)
marymargaret.fonow@asu.edu

<http://sst.clas.asu.edu/>

From: Jeffrey Chapman
Sent: Wednesday, March 07, 2012 3:30 PM
To: Mary Fonow
Cc: Jonathan Koppell; Christopher Hiryak
Subject:

Dear Professor Fonow:

The School of Public Affairs has developed a proposal for a new undergraduate Science and Technology concentration in our Public Service and Public Policy program (see attached).

I am writing to ask for a memo of support for our proposed program. With your participation, this program will provide an excellent opportunity for our undergraduate students who have an interest in policy to focus on science and technology-related issues and their policy implications. I would appreciate your timely feedback before the end of the week, if possible.

Thank you,

Jeff

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602-496-0454

Christopher Hiryak

From: Frederick Corey
Sent: Sunday, April 29, 2012 4:23 PM
To: Christopher Hiryak; Jeffrey Chapman
Cc: Frederick Corey
Subject: RE: new undergraduate proposal--response requested

Jeff,

The School of Letters and Sciences supports the new concentration. Thanks for including the courses in Science, Technology and Society.

Fred

Frederick C. Corey
Director, School of Letters and Sciences

From: Christopher Hiryak
Sent: Monday, April 09, 2012 5:18 PM
To: Jeffrey Chapman; Frederick Corey
Subject: RE: new undergraduate proposal--response requested

Hi Fred, attached is the revised proposal with the three classes below added. All three would make great courses for our students to take. Let us know if you have any other changes or additions. Thanks!

Chris

From: Jeffrey Chapman
Sent: Wednesday, April 04, 2012 1:32 PM
To: Frederick Corey
Cc: Christopher Hiryak
Subject: RE: new undergraduate proposal--response requested

As far as I am concerned, this is great. But let me run this by Chris Hiryak (who actually understands the process) to make sure that this is OK. I will get back to you next week.

Thanks,

Jeff

Jeffrey I. Chapman, Ph.D.
Associate Director, School of Public Affairs
Foundation Professor of Applied Public Finance
School of Public Affairs
Arizona State University
MC 3720
411 N. Central Avenue, suite 450
Phoenix, AZ 85004-0687
602-496-0454

From: Frederick Corey
Sent: Monday, April 02, 2012 12:23 PM
To: Jeffrey Chapman
Cc: Frederick Corey
Subject: FW: new undergraduate proposal--response requested

Jeff,

I am catching up on old business. Would you be willing to include some of the STS (Science, Technology and Society) courses as options? Here are some possibilities:

STS 318 (Technology and Governance)
STS 325 (Science, Technology, and Public Policy)
STS 260 (The Politics of Science and Technology)

Here is the catalog page:

<https://webapp4.asu.edu/catalog/courselist?s=STS&t=2127&hon=F>

Fred

From: Jeffrey Chapman
Sent: Tuesday, March 06, 2012 3:41 PM
To: Frederick Corey
Cc: Jonathan Koppell; Christopher Hiryak
Subject: new undergraduate proposal--response requested

Hi Fred,

The School of Public Affairs has developed a proposal for a new undergraduate Science and Technology concentration in our Public Service and Public Policy program (see attached).

I am writing to ask for a memo of support for our proposed program. With your participation, this program will provide an excellent opportunity for our undergraduate students who have an interest in policy to focus on science and technology-related issues and their policy implications. I would appreciate your timely feedback before the end of the week, if possible.

Thank you,

Jeff

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Foundation Professor of Applied Public Finance
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Memo.

To: Dr. Jeffrey I. Chapman, Associate Director School of Public Affairs.

From: Dr. Rob Taylor, Associate Dean NCIAS

Date: March 9th 2012

Re. Proposal for Undergraduate Concentration in Science and Technology Policy in the BS in Public Service and Public Policy.

Having read the proposal carefully, on behalf of the New College of Interdisciplinary Arts and Sciences, I am pleased to offer our support for your concentration in "Science and Technology Policy." The demand for the program is clearly stated and convincing. Science and technology-related issues and their policy implications are extremely important elements when we consider global education goals. The required course on Introduction to Science and Technology Policy appears to be a sensible place to start; and, while the list of electives is possibly comprehensive enough, we might ask you and your colleagues to consider adding some of the offerings from the New College of Interdisciplinary Arts and Sciences, especially as you have checked the "Interdisciplinary Studies" box in section 9. B. "Areas of Interest" along with "Social Science, Policies & Issues." We could send you a complete list of courses to consider, but I am thinking particularly of some of the courses we already share with Carey in a concentration in Global Leadership (copy attached).

Christopher Hiryak

From: Jeffrey Chapman
Sent: Thursday, March 08, 2012 11:31 AM
To: Christopher Hiryak
Subject: FW: New Undergraduate Proposal--response requested

Jeffrey I. Chapman, Ph.D.
Associate Director, School of Public Affairs
Foundation Professor of Applied Public Finance
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From: Patrick Kenney
Sent: Thursday, March 08, 2012 7:57 AM
To: Jeffrey Chapman
Subject: RE: New Undergraduate Proposal--response requested

Hi Jeff, the faculty in the School of Politics and Global Studies are supportive of this new concentration in the School of Public Affairs. I have consulted with key faculty in our School who are also important players in CSPO and they are convinced this is an important and exciting certificate for students at ASU to pursue.

We support the idea and let us know if we can help facilitate students in our School to take courses toward the certificate.

Thanks, Pat

From: Jeffrey Chapman
Sent: Tuesday, March 06, 2012 3:31 PM
To: Patrick Kenney
Cc: Jonathan Koppell; Christopher Hiryak
Subject: New Undergraduate Proposal--response requested

Dear Pat,

The School of Public Affairs has developed a proposal for a new undergraduate Science and Technology concentration in our Public Service and Public Policy program (see attached).

I am writing to ask for a memo of support for our proposed program. With your participation, this program will provide an excellent opportunity for our undergraduate students who have an interest in policy to focus on science and technology-related issues and their policy implications. I would appreciate your timely feedback before the end of the week, if possible.

Thanks,

Jeff

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