

GENERAL STUDIES COURSE PROPOSAL COVER FORM

Course information:

Copy and paste current course information from Class Search/Course Catalog.

College/School	(Select One)	Department/School	School for the Future of Innovation in Society
Prefix:	FIS	Number:	335
Title:	Designing Knowledge		Units: 3

Course description: **Knowledge is one of the most important elements in human societies. Over the past 150 years, people have increasingly organized their world around the design and use of knowledge, creating knowledge-based economies and knowledge-based societies. Today, knowledge is the foundation of many of the world's largest companies, such as Google and Facebook, as well as its most powerful agencies, such as the National Security Administration. It is not an accident that we often say, for example, "knowledge is power." In this course, students will receive an introduction to social science insights into how societies and social institutions make and use knowledge. We will explore how knowledge is organized, socially, and how diverse forms of social organization design, create, and apply knowledge to achieve their social goals. We will examine how and why knowledge acquired its power and significance in contemporary societies and why, at the beginning of the 21st century, its power seems to be both ascending, e.g., through new emphases on the collection and organization of social data, and at risk, as key knowledge organizations, such as the media, experts, and statistical agencies, have their claims to knowledge challenged.**

Is this a cross-listed course?	No	If yes, please identify course(s):
Is this a shared course?	No	If so, list all academic units offering this course:

Note- For courses that are crosslisted and/or shared, a letter of support from the chair/director of each department that offers the course is required for each designation requested. By submitting this letter of support, the chair/director agrees to ensure that all faculty teaching the course are aware of the General Studies designation(s) and will teach the course in a manner that meets the criteria for each approved designation.

Is this a permanent-numbered course with topics?	No	Chair/Director Initials
If yes, all topics under this permanent-numbered course must be taught in a manner that meets the criteria for the approved designation(s). It is the responsibility of the chair/director to ensure that all faculty teaching the course are aware of the General Studies designation(s) and adhere to the above guidelines.		_____ (Required)

Requested designation: Social-Behavioral Sciences—SB **Mandatory Review:** (Choose one)

Note- a separate proposal is required for each designation.

Eligibility: Permanent numbered courses **must** have completed the university's review and approval process. For the rules governing approval of omnibus courses, contact Phyllis.Lucie@asu.edu.

Submission deadlines dates are as follow:
 For Fall 2018 Effective Date: October 1, 2017 For Spring 2019 Effective Date: March 10, 2018

Area(s) proposed course will serve:
 A single course may be proposed for more than one core or awareness area. A course may satisfy a core area requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirement and the major program of study.

- Checklists for general studies designations:**
 Complete and attach the appropriate checklist
- Literacy and Critical Inquiry core courses (L)
 - Mathematics core courses (MA)
 - Computer/statistics/quantitative applications core courses (CS)
 - Humanities, Arts and Design core courses (HU)
 - Social-Behavioral Sciences core courses (SB)
 - Natural Sciences core courses (SQ/SG)
 - Cultural Diversity in the United States courses (C)
 - Global Awareness courses (G)
 - Historical Awareness courses (H)

- A complete proposal should include:**
- Signed course proposal cover form
 - Criteria checklist for General Studies designation being requested
 - Course catalog description
 - Sample syllabus for the course
 - Copy of table of contents from the textbook and list of required readings/books

It is respectfully requested that proposals are submitted electronically with all files compiled into one PDF.
Contact information:

Name Jameson Wetmore E-mail jameson.wetmore@asu.edu Phone 7-0750

Department Chair/Director approval: (Required)

Chair/Director name (Typed): David Guston Date: 08/11/2017

Chair/Director (Signature): 

Arizona State University Criteria Checklist for
SOCIAL-BEHAVIORAL SCIENCES [SB]

Rationale and Objectives

Social-behavioral sciences use distinctive scientific methods of inquiry and generate empirical knowledge about human behavior, within society and across cultural groups. Courses in this area address the challenge of understanding the diverse natures of individuals and cultural groups who live together in a complex and evolving world.

In both private and public sectors, people rely on social scientific findings to consider and assess the social consequences of both large-scale and group economic, technological, scientific, political, ecological and cultural change. Social scientists' observations about human interactions with the broader society and their unique perspectives on human events make an important contribution to civic dialogue.

Courses proposed for a General Studies designation in the Social-Behavioral Sciences area must demonstrate emphases on: (1) social scientific theories, perspectives and principles, (2) the use of social-behavioral methods to acquire knowledge about cultural or social events and processes, and (3) the impact of social scientific understanding on the world.

Revised April 2014

Proposer: Please complete the following section and attach appropriate documentation.

ASU--[SB] CRITERIA					
A SOCIAL-BEHAVIORAL SCIENCES [SB] course should meet all of the following criteria. If not, a rationale for exclusion should be provided.					
YES	NO		Identify Documentation Submitted		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Course is designed to advance basic understanding and knowledge about human interaction.	Syllabus		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Course content emphasizes the study of social behavior such as that found in: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> • ANTHROPOLOGY • ECONOMICS • CULTURAL GEOGRAPHY • HISTORY </td> <td style="width: 50%; vertical-align: top; text-align: center;">Sociology and Political Science</td> </tr> </table>	<ul style="list-style-type: none"> • ANTHROPOLOGY • ECONOMICS • CULTURAL GEOGRAPHY • HISTORY 	Sociology and Political Science	Syllabus
<ul style="list-style-type: none"> • ANTHROPOLOGY • ECONOMICS • CULTURAL GEOGRAPHY • HISTORY 	Sociology and Political Science				
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Course emphasizes: <ul style="list-style-type: none"> a. the distinct knowledge base of the social and behavioral sciences (e.g., sociological anthropological). <li style="text-align: center;">OR b. the distinct methods of inquiry of the social and behavioral sciences (e.g., ethnography, historical analysis). 	Syllabus		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Course illustrates use of social and behavioral science perspectives and data.	Syllabus		
		THE FOLLOWING TYPES OF COURSES ARE EXCLUDED FROM THE [SB] AREA EVEN THOUGH THEY MIGHT GIVE SOME CONSIDERATION TO SOCIAL AND BEHAVIORAL SCIENCE CONCERNS:			
		• Courses with primarily arts, humanities, literary or philosophical content.			
		• Courses with primarily natural or physical science content.			
		• Courses with predominantly applied orientation for professional skills or training purposes.			
		• Courses emphasizing primarily oral, quantitative, or written skills.			

Course Prefix	Number	Title	General Studies Designation
FIS	335	Designing Knowledge	SB

Explain in detail which student activities correspond to the **specific** designation criteria. Please use the following organizer to explain how the criteria are being met.

Criteria (from checklist)	How course meets spirit (contextualize specific examples in next column)	Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)
1. Course is designed to advance basic understanding and knowledge about human interaction.	Throughout this course students will study human interactions around knowledge, with an emphasis on how social institutions organize the processes of making, validating, communicating, and using knowledge and how they use knowledge to help organize social relationships.	Syllabus, pp. 1-10. Course Description, Course Objectives. Section I introduces students to key social science theories about human interaction in the creation, sharing, and use of knowledge. Section II introduces as conceptual framework for understanding the social organization and dynamics of knowledge making. Section 3 examines an example of human interactions around knowledge in the use of advanced statistics in professional baseball. Section 4 looks at the societal level organization of knowledge. Section 5 examines the use of knowledge in political interactions. Section 6 examines the use of knowledge in economic interactions.
2. Course content emphasizes the study of social behavior such as that found in: Sociology & Political Science	This course emphasizes the study of the sociology and politics of knowledge.	Sections 1 and 2 provide an introduction to sociological theories of knowledge and knowledge-making. Sections 5 and 6 provide an introduction to political science theories of the politics and political economy of knowledge.
3A. Course emphasizes: the distinct knowledge base of the social and behavioral	The social and behavioral sciences have developed a distinctive understanding of knowledge, how knowledge gets made, and how knowledge fits into human behavior, relationships, and institutions. This view differs markedly from that presented in the natural sciences and in philosophy. This course specifically	Section 1 specifically introduces students to the distinctive insights that social scientists have developed about knowledge and differentiates that perspective from other ways of thinking about knowledge. Section 2 introduces students to a particular set of methods and tools developed by the social sciences for analyzing knowledge. Section 4 reviews social science literature on how knowledge fits into societies' self-understanding

<p>sciences.</p>	<p>focuses on and introduces students to the view offered by the social sciences, differentiating it from the view of other disciplines.</p>	<p>of themselves as societies. Section 5 reviews a particular political science analysis of how knowledge is used in governmental regulation. Section 6 reviews social science analyses of how knowledge fits into economic thought and organization.</p>
<p>4. Course illustrates use of social and behavioral science perspectives and data.</p>	<p>This course emphasizes sociological approaches to the study of the social construction and organization of knowledge-making, as well as political science approaches to the study of decision-making and innovation.</p>	<p>The large majority of the readings throughout the course are drawn from and expose students to the distinctive literature and ideas of sociology and political science around knowledge, as well as to the kinds of data used by social scientists to support their research. The class assignments require students to apply ideas, theories, and data from the social sciences to analyze the social dynamics and organization of how knowledge gets made, validated, communicated, and applied to human decisions.</p>

**Designing Knowledge
FIS 335**

Fall 2017

**Room: Durham Language & Literature 265
MWF 3-3:55 pm**

Prof. Clark A. Miller

clark.miller@asu.edu 480-965-1778

Office: Interdisciplinary B, Room 366

Course description: Knowledge is one of the most important elements in human societies. Over the past 150 years, people have increasingly organized their world around the design and use of knowledge, creating knowledge-based economies and knowledge-based societies. Today, knowledge is the foundation of many of the world's largest companies, such as Google and Facebook, as well as its most powerful agencies, such as the National Security Administration. It is not an accident that we often say, for example, "knowledge is power." In this course, students will receive an introduction to social science insights into how societies and social institutions make and use knowledge. We will explore how knowledge is organized, socially, and how diverse forms of social organization design, create, and apply knowledge to achieve their social goals. We will examine how and why knowledge acquired its power and significance in contemporary societies and why, at the beginning of the 21st century, its power seems to be both ascending, e.g., through new emphases on the collection and organization of social data, and at risk, as key knowledge organizations, such as the media, experts, and statistical agencies, have their claims to knowledge challenged.

Course objectives and learning outcomes: In this course, students will learn:

- The organization of knowledge-making as a human and social institution
- The structure and dynamics of knowledge systems and knowledge enterprises
- Approaches and techniques for analyzing knowledge systems and enterprises (e.g., epistemological, ontological, functional, structural, political, etc.)
- Approaches and techniques for analyzing uncertainty, ignorance, and other kinds of non-knowledge
- The performance of credibility in knowledge enterprises and systems
- The roles of knowledge and uncertainty in organizational, social, economic, and policy decision-making
- The social regulation of knowledge-making processes and organizations

Course Requirements:

- **Exams** (30%). The course will have two exams. Each will be worth 15% of your grade. Exams will take place during class and consist of identification and short answer questions. Identification questions will be drawn from the class readings. Short answer questions will be based on the course lecture.
- **Assignments** (50%). The course will have five assignments. Assignments and grading criteria for each paper will be passed out in class. Each will be worth 10%. Papers are due at the beginning of class on the class period immediately following the close of each section.
- **Class Participation** (20%). You are required to attend class and participate in class discussions, based on class readings. Class readings for a given day must be completed before class in order to allow you to participate in discussions. Class readings contain material that will not be presented in lectures and that may form the basis for test questions.

Course Readings:

- Students will need to purchase copies of two books for the course: Sheila Jasanoff, *The Fifth Branch*, and Michael Lewis, *Moneyball*.
- All other readings will be found on Blackboard.

Course Calendar:

Section 1: Key Ideas and Concepts

During the first three weeks of the class, students will be introduced to the key social science theories and concepts that inform the class. These ideas will be explored in the context of a series of case study illustrations drawn from both historical events and fiction.

Week 0:

Friday, Aug. 18: Course introduction & overview

In today's class, students will receive an introduction to the importance and content of the course and an overview of the class schedule, requirements, expectations, grading, and other important elements.

Week 1:

Monday, Aug. 21: What is knowledge?

In today's class, we will discuss the definition of knowledge and introduce three ways in which social scientists understand knowledge as a social phenomenon: the social work and organization of defining and making knowledge (knowledge is made by people doing work, such as conducting research or surveys); the social communication, circulation, and reception of knowledge (knowledge circulates through discrete social processes and pathways); and the use of knowledge in the organization of social relationships, institutions, and societies (people apply knowledge to decision-making in social and institutional settings in order to accomplish various kinds of social, political, and economic goals and objectives).

Case study: knowledge about biodiversity. **Reading:** David Takacs, "Costa Rica's National Institute of Biodiversity (INBio): Biodiversidad Central," in *The Idea of Biodiversity: Philosophies in Paradise* (Hopkins, 1996).

Wednesday, Aug. 23: How is knowledge designed, organized, and made?

In today's class, we will discuss in greater detail how knowledge gets designed and made in social contexts, and we will compare and contrast different kinds of social organizations that do this work, such as statistical agencies, intelligence agencies, research organizations, social media companies, and others.

Case study: knowledge about elections. **Reading:** Clark A. Miller, "Interrogating the Civic Epistemology of American Democracy: Stability and Instability in the 2000 US Presidential Election," *Social Studies of Science* 34(4): 501-530.

Friday, Aug. 25: Why does knowledge matter?

In today's class, we will discuss why knowledge matters to how social scientists understand social, economic, and political processes and why, in relation to these explanations, understanding the social making, organization, and application of knowledge matters.

Case study: knowledge about race. **Reading:** Geoffrey Bowker and Leigh Star, “The Case of Race Classification and Reclassification under Apartheid,” in *Sorting Things Out: Classification and Its Consequences* (MIT, 1999).

Week 2:

Monday, Aug. 28: What are knowledge systems?

In today’s class, we will discuss a key analytical concept, knowledge systems, that we will use throughout this class and that can be used to ground a social understanding of knowledge for a variety of theoretical and practical purposes.

Case study: organizational information systems. **Reading:** Brian Pentland, “Information Systems and Organizational Learning: The Social Epistemology of Organizational Knowledge Systems,” *Accounting, Management, and Information Technology* 5(1): 1-21.

Wednesday, Aug. 30: In-class film: Gattaca

In today’s class, we will watch the first half of the film Gattaca.

Friday, Sept. 1: In-class film: Gattaca

In today’s class, we will watch the second half of the film Gattaca.

Week 3:

Monday, Sept. 4: **Labor Day. No class.**

Wednesday, Sept. 6: Discussion of Gattaca 1: making knowledge

In today’s class, we will discuss the actions of people and organizations in the film Gattaca as an example of how the making of knowledge works, practically, and how, as social analysts, we can conduct analyses of knowledge-making processes and practices. Emphasis will be placed on developing students’ analytical knowledge and skills.

Assignment 1 (due in class on Sept. 6): Write a 500-word essay describing the content, organization, and making of knowledge in the knowledge system operating at the heart of the film Gattaca.

Friday, Sept. 8: Discussion of Gattaca 2: using knowledge

In today’s class, we will discuss the actions of people and organizations in the film Gattaca as the basis for discussions of how social organizations apply and deploy knowledge as a form of social control, to order and organize social relations, and to exercise power. Emphasis will be placed on developing students’ analytical knowledge and skills.

Assignment 2 (due in class on Sept. 8): Write a 500-word essay analyzing how the knowledge system operating at the heart of the film Gattaca uses its knowledge to exercise power and organize social relationships.

Section 2: Knowledge Systems Analysis

During these two weeks, students will learn two key applied techniques and methods for mapping and analyzing knowledge systems: the first focused on the elements, structure, and organization of knowledge systems and the second focused on their core functions. Case studies for this section will include the US Census, nutritional information and dietary recommendations, and medical knowledge.

Week 4:

Monday, Sept. 11: Mapping knowledge systems, technique 1: elements, structure, and organization
In today's class, we will introduce the applied techniques and methods of knowledge systems mapping, which can be used to identify the key elements of knowledge systems and to map their relationships to one another. You will also be introduced to the knowledge systems mapping charts and how to use them.

Reading: Miller and Munoz-Erickson, Chapters 1 and 2.

Wednesday, Sept. 13: Mapping knowledge systems, technique 2: functions
In today's class, we will introduce the applied techniques and methods for analyzing the core functions of knowledge systems, which can be used to identify and assess how and knowledge systems are or are not performing properly.

Reading: Miller and Munoz-Erickson, Chapter 3.

Friday, Sept. 15: Applying knowledge systems mapping: case study, medical knowledge
Today and Monday, we will have the chance to explore in depth how to apply knowledge systems mapping techniques to a concrete example: how doctor's offices know things and apply their knowledge. We will do this in conversation with a visitor who is a nurse practitioner in a local medical clinic and works daily with their knowledge systems.

Visitor to class: Heather Ross, Arizona Arrhythmia Associates

Week 5:

Monday, Sept. 18: Applying knowledge systems mapping: case study, medical knowledge

Visitor to class: Heather Ross, Arizona Arrhythmia Associates

Wednesday, Sept. 20: Using knowledge systems mapping charts: case study, nutritional information
Today and Friday, we will practice conducting knowledge systems analysis using the mapping charts introduced the previous week. Today, we will apply the charts to the case of nutritional information and diet analysis, using a knowledge system created by a group of doctors to analyze the impact of food consumption on blood sugar levels.

Reading: Jennie Brand-Miller, et al. *The New Glucose Revolution* (New York: Marlowe & Co.), 1996. Chapters 1-4.

Friday, Sept. 22: Using knowledge systems mapping charts: case study, national statistics
Today, we will apply the charts to the case of national statistics, using the design of the US Census as our case study.

Reading: US Census Bureau, *2020 Census Operational Plan: Executive Summary* (2016).

Week 6:

Monday, Sept. 25: **Study day. No class.**

Wednesday, Sept. 27: **Exam 1. In class.**

Section 3: Knowledge Systems in Action: An Example

During these two weeks, the class will explore, in detail, a particularly interesting example of a powerful knowledge system that has transformed an important industry: Major League Baseball. We will examine the social organization and dynamics of the innovative knowledge system and the one that it replaced; we will explore how the system was created and put to work to change social and economic strategies and practices; and we will explore how the knowledge system was adopted and spread across multiple organizations.

Friday, Sept. 29: Two ways of knowing about baseball players

Moneyball opens with a description of two different knowledge systems for knowing about baseball players: the method adopted by major league scouts and the method adopted by the Oakland A's baseball team to statistically evaluate students. We'll start by comparing and contrasting the two systems at a very general level.

Reading: Lewis, *Moneyball: The Art of Winning an Unfair Game* (Norton, 2003). Pp. 1-42.

Week 7:

Monday, Oct. 2: Designing new knowledge practices

In this class, we'll use the adoption of the new statistical knowledge system by the A's to ask how new knowledge practices and knowledge systems get created and come into being.

Reading: Lewis, *Moneyball*. Pp. 43-96.

Wednesday, Oct. 4: Knowledge and organizational strategy

In this class, we'll explore how knowledge systems get connected to organizational strategy, exploring the ways that social organization and ways of knowing work together.

Reading: Lewis, *Moneyball*. Pp. 97-137.

Friday, Oct. 6: Measurement systems and individual behavior

In this class, we'll take a deeper look at the specific measurement systems that characterize the A's knowledge systems—what did they measure, why did they measure it, how did they measure it—and how they used that knowledge to reshape how individual baseball players understood themselves, their baseball practices (especially hitting and base running), and their role on the team.

Reading: Lewis, *Moneyball*. Pp. 138-187.

Week 8:

Monday, Oct. 9: **Fall Break, no class.**

Wednesday, Oct. 11: Knowledge systems innovation

We'll use the *Moneyball* case to explore how knowledge systems change over time and how participants in knowledge systems define and implement innovation. We'll particularly focus on what happened as the ideas and systems developed by the Oakland A's received exposure among other teams and those teams adopted and adapted the A's knowledge system.

Reading: Lewis, *Moneyball*. Pp. 188-243.

Friday, Oct. 13: Knowledge, epistemology, uncertainty, and performance

Finally, in this class, we'll explore some of the uncertainties and epistemological complexities that arose over time as the A's and other organizations sought to use the A's knowledge systems to create competitive advantage. Drawing on lessons from economic sociology, we'll look at how the performance of knowledge systems changed the social and market relationships that they sought to understand and so undermined the reliability of the knowledge system.

Reading: Lewis, *Moneyball*. Pp. 244-301.

Assignment 3 (due in class Oct. 13): Use the knowledge systems charts handed out in class to analyze the knowledge system developed by the Oakland A's baseball team and described in *Moneyball*.

Section 4: Knowledge in Society

During these two weeks, the class will explore the role of knowledge in modern societies, including how societies organize knowledge about people, about nature, and about society-as-a-whole. We will explore why certain kinds of knowledges have become particularly important in the organization of modern societies and what that means for how societies make decisions about important issues. Finally, we will explore how knowledge becomes a resource for constructing a democratic society.

Week 9:

Monday, Oct. 16: Knowing about people

As societies became larger and more formalized and began to develop formal state institutions for managing social problems, such as police departments for tackling criminal behavior, societies began to need to identify individuals with much greater accuracy than in the past. We will discuss some of the early strategies they used, including the rise of fingerprinting as a particularly significant identification technology, and then compare those to how societies identify individuals today.

Reading: Simon Cole, *Suspect Identities* (Harvard, 2002), Prologue, "Jekylls and Hydes," and Chapter 1, "Impostors and Incurable Rogues."

Wednesday, Oct. 18: Knowing about society

Another important knowledge system that arose along with the 19th century state institutions was statistics, the systematic counting and quantitative measurement of diverse aspects of societies. We will discuss the rise of statistics and its significance as a form of state knowing and compare it to alternative strategies for knowing about societies. We will also discuss its relationship to other societal phenomena, such as the parallel rise of nationalism.

Reading: Benedict Anderson, *Imagined Communities* (Verso, 1991), Chap. 10, "Census, Map, Museum."

Friday, Oct. 20: Knowing about nature (and risk)

In the 20th century, one of the most important new forms of knowing to arise has been the scientific study of risk. Science has been critical both to establishing the causal relationships

and natural objects that underpin notions of risk (and especially environmental and health risks) as well as the assessment of risk itself.

Reading: Paul Edwards, “Representing the Climate,” in Miller and Edwards, eds., *Changing the Atmosphere* (MIT, 2001).

Week 10:

Monday, Oct. 23: Societies of numbers

In today’s class we will explore the question of why some societies (e.g., the United States) particularly emphasize quantitative knowledge systems in public deliberations and what that means for the self-understanding of those societies.

Reading: Theodore Porter, *Trust in Numbers* (Princeton, 1990), Chap. 1, “A World of Artifice.”

Wednesday, Oct. 25: Predicting the future

As quantitative knowledge systems have grown in importance alongside new technologies of computational modeling in the late 20th century, the idea of using science to predict the future has taken on particular significance on numerous issues. In today’s class, we will look more closely at predictive ways of knowing and the challenges they pose.

Reading: Roger Pielke, Daniel Sarewitz, and Radford Byerly, “Decision making and the future of nature: Understanding and using predictions,” in Sarewitz, ed., *Prediction* (Island Press, 2000).

Friday, Oct. 27: Science and democracy

Finally, we will end this section by looking in greater depth at how scientific knowledge systems have come to acquire particular significance in democratic politics and what that means for how we understand both science and democracy. This will provide a transition to the next section of the course, which will look at how regulatory institutions have constructed and deployed knowledge systems to support their work.

Reading: Yaron Ezrahi, *The Descent of Icarus: Science and the Transformation of Contemporary Democracy* (Harvard, 1990), Chap. 1.

Assignment 4: Use the knowledge systems charts handed out in class to analyze a knowledge system used by the US federal government to understand some aspect of society or the economy. Write a 500-word essay describing how that knowledge system works.

Section 5: The Politics of Knowledge

During these two weeks, students will learn about the political dimensions of knowledge systems and enterprises, including the role of knowledge in political institutions, political conflict surrounding knowledge and expertise, the mobilization of knowledge and expertise by governments, conflicts between different forms of knowledge-making (e.g., science and indigenous knowledge), etc. Particular emphasis will be placed on the politics of technical decisions, especially in pluralistic political environments, and the politics and organization of expert advisory institutions in contemporary democratic governance.

Week 11:

Monday, Oct. 30: The politics of knowledge design

To begin this section, students will be provided an overview of the kinds of knowledge systems that serve political decision-making and the institutions that support them. We will review knowledge systems already discussed, such as the US Census and election vote counts, and discuss the broader landscape of US statistical agencies, research agencies, and regulatory knowledge frameworks. We will also examine how questions of knowledge design become political questions within these institutions.

Reading: Sheila Jasanoff, *The Fifth Branch: Science Advisers as Policymakers* (Harvard, 1990). Pp. 1-38.

Wednesday, Nov. 1: The politics of science advice in the United States

In today's class, we will focus in on the politics of regulatory decision-making and the role of scientific and other expert forms of knowledge in those politics. We will discuss the historical rise of science advice in US political institutions since the 1960s.

Reading: Sheila Jasanoff, *The Fifth Branch*. Pp. 39-83.

Friday, Nov. 3: EPA's scientific advisory knowledge systems

In today's class, we will specifically examine the organization and design of science advice at the US Environmental Protection Administration, its origins in legislation, and some of the political challenges EPA has faced in seeking to use science advice to enhance the legitimacy of its regulatory decisions.

Reading: Sheila Jasanoff, *The Fifth Branch*. Pp. 84-122.

Week 12:

Monday, Nov. 6: FDA's scientific advisory knowledge systems

In today's class, we will compare the organization and design of science advice at the US Food and Drug Administration to that at EPA, some of the political challenges FDA has faced in seeking to use science advice to enhance the legitimacy of its regulatory decisions, and how it has responded similarly or differently to EPA in those decisions.

Reading: Sheila Jasanoff, *The Fifth Branch*. Pp. 123-179.

Wednesday, Nov. 8: Credibility in knowledge systems

Today, we will explore the concept of credibility in knowledge systems, where credibility is defined as a social phenomenon that captures the degree to which a particular audience accepts the knowledge claims coming from a knowledge system as relatively true. We will examine the ways in which credibility depends on the characteristics of knowledge, the performance of the knowledge system, the performance of the people making the knowledge claims, and the social relationships at stake. We will use the examples of EPA and FDA as source material for exploring these questions.

Reading: Sheila Jasanoff, *The Fifth Branch*. Pp. 180-228.

Friday, Nov. 10: Theorizing the politics of knowledge design

Today, we will synthesize our discussions from the previous two weeks, as well as the rest of the course, to revisit and improve our theoretical framework for analyzing the politics of knowledge design.

Reading: Sheila Jasanoff, *The Fifth Branch*. Pp. 229-252.

Assignment 5: Write a 1000-word essay using insights from Section 5 to analyze a controversy over knowledge from the news in 2017.

Section 6: Knowledge and the Economy

During these two weeks, students will learn about diverse economic dimensions of knowledge systems and enterprises, including the costs of knowledge systems operations, intellectual property systems and arrangements, knowledge markets, the organization of an innovation economy, and systems for measuring economies.

Week 13:

Monday, Nov. 13: The great knowledge-technology systems

In the first session of this section, we will look at the rise of knowledge-based enterprises in the global economy in the late 19th and early 20th century. We will read about Thomas Edison and his Menlo Park laboratory, in which he invented large-scale electricity and lighting systems, with a particular eye toward understanding the relationship between knowledge-making and techno-economic system-making. We will also discuss other research-based enterprises from that time period, including oil (the oil had to be located), pharmaceuticals, telephones, etc.

Reading: Thomas Hughes, *Networks of Power* (Johns Hopkins, 1983), Chapter 2.

Wednesday, Nov. 15: Patenting knowledge

In today's class, students will be introduced to the patent system, the patenting of knowledge as an economic product, and some of the differences between how the US and Europe have designed knowledge-based patents and patent systems.

Reading: Shobita Parthasarathy, "Whose knowledge? What values? The comparative politics of patenting life forms in the United States and Europe," *Policy Sciences* 37(2), 2004.

Friday, Nov. 17: Systems of innovation

In today's class, students will be introduced to the concept of national innovation systems, which describes the set of political and economic institutions that have arisen at the national level to support knowledge-based economic innovation. We will also discuss comparative similarities and differences across different countries in the design of their national innovation systems.

Reading: Richard Nelson, "National innovation systems: A retrospective on a study," *Industrial and Corporate Change* (1992).

Week 14:

Monday, Nov. 20: Measuring the economy

In today’s class, students will be introduced to another form of economic knowledge-making, namely the knowledge systems set up by national governments to measure national economic activity, such as the national income and product accounts (which measures gross domestic product), labor and unemployment statistics, and other measures of the economy.

Reading: Carlos Gutierrez, et al. *Measuring the Economy* (Bureau of Economic Analysis, 2007).

Wednesday, Nov. 22: Knowledge and markets

This class will explore the role of knowledge in market design and market behavior, with an emphasis on credit and trading markets. We will look specifically at the 2008 credit crisis and explore how the design of knowledge systems at banks and credit rating agencies contributed to the economic collapse.

Reading: Donald Mackenzie, “The credit crisis as a problem in the sociology of knowledge,” *American Journal of Sociology* 116(6): 1778-1841 (2011).

Friday, Nov. 24: **Thanksgiving. No class.**

Week 15:

Monday, Nov. 27: Knowledge economies

Today, we will explore the emerging concept of knowledge economies, which builds on the kinds of knowledge-based economic activities of the past century but formulates the relationship between knowledge and the economy in new ways. We will discuss the *2012 National Bioeconomy Blueprint* as an example of the new thinking.

Reading: *The National Bioeconomy Blueprint* (The White House, 2012).

Wednesday, Nov. 29: **Study day. No class.**

Friday, Dec. 1: **Exam 2. In class.**

Barrett students interested in adding an **honors contract** to the class should contact the instructor in the first week of classes.

Grading Scale:

A-/ A/ A+	90.0-92.4/ 92.5-97.4/ 97.5-100	Excellent
B- /B/ B+	80.0-82.4/ 82.5-87.4/ 87.5-89.9	Good
C/ C+	70.0-77.4/ 77.5-79.9	Average
D	60.0-69.9	Passing
E	<60	Failure
XE		Failure due to Academic Dishonesty

[Note: in order to receive University Distribution requirement credit you must earn at least a “C.”]

Incompletes: A mark of "I" (incomplete) can be given by the instructor when you are otherwise doing acceptable work but are unable to complete the course because of illness or other conditions beyond your control. You are required to arrange with the instructor for the completion of the course requirements. The arrangement must be recorded using the form at <http://students.asu.edu/forms/incomplete-grade-request>. Students should be proactive and discuss this with their instructor and TA before the end of the semester. Students who do not complete this form before the end of the semester cannot be given an incomplete and will be awarded a grade based on the work they have completed.

Late Assignments: Late assignments will have 1/3rd of a letter grade deducted each day they are late. Advanced written or e-mailed notice that you will miss a class or have to turn in an assignment late could help your cause.

Grade Appeals: ASU has formal and informal channels to appeal a grade. If you wish to appeal any grading decisions, please see: <http://catalog.asu.edu/appeal>

Student Standards: Students are required to read and act in accordance with university and Arizona Board of Regents policies, including: The ABOR Code of Conduct: Arizona Board of Regents Policies 5-301 through 5-308: <http://www.azregents.edu/policymanual/default.aspx>

Professionalism in the Classroom: While learning happens throughout ASU, the classroom is a particularly important focal point. Students are asked to contribute to a collegial atmosphere where ideas can be exchanged, discussed, and debated freely by avoiding disruptions through their own behavior and the distractions of their technology. Disruptive, threatening or violent behavior will be dealt with according to the policies in the Student Services Manual, [SSM 104-02](#). Students wishing to record lectures electronically must first get permission from the instructor.

It is impossible to learn from your fellow students when you or they are not there. As such attendance is required in this course. Should you have to miss a class, contact your instructor as far in advance as possible. Depending on the nature of the absence the instructor may elect to deduct points from your overall grade. Absences can be excused for religious observances or practices that are in accord with [ACD 304-04](#) or university sanctioned events/activities that are in accord with [ACD 304-02](#).

Academic Integrity: Academic honesty is expected of all students in all examinations, papers, laboratory work, academic transactions and records. The possible sanctions include, but are not limited to, appropriate grade penalties, course failure (indicated on the transcript as a grade of E), course failure due to academic dishonesty (indicated on the transcript as a grade of XE), loss of registration privileges, disqualification and dismissal. For more information, see <http://provost.asu.edu/academicintegrity>.

If you fail to meet the standards of academic integrity in any of the criteria listed on the university policy website, sanctions will be imposed by the instructor, school, and/or dean. Academic dishonesty includes borrowing ideas without proper citation, copying others' work (including information posted on the internet), and failing to turn in your own work for group projects. Please be aware that if you follow an argument closely, even if it is not directly quoted, you must provide a citation to the publication, including the author, date, and page number. If you directly quote a source, you must use quotation marks and provide the same sort of citation for each quoted sentence or phrase. You may discuss assignments with other students, however, all writing that you turn in must be done independently. If you have any doubt about whether the form of cooperation you contemplate is acceptable, ask the TA or the instructor in advance of turning in an assignment. Please be aware that the work of all students submitted electronically can be scanned using SafeAssignment, which compares them against everything posted on the internet,

online article/paper databases, newspapers and magazines, and papers submitted by other students. Turning in an assignment (all or in part) that you completed for a previous class is considered self-plagiarism and falls under these guidelines. Any infractions of self-plagiarism are subject to the same penalties as copying someone else's work without proper citations. Students who have taken this class previously and would like to use the work from previous assignments should contact the instructor for permission to do so.

Prohibition of Commercial Note Taking Services: In accordance with [ACD 304-06 Commercial Note Taking Services](#), written permission must be secured from the official instructor of the class in order to sell the instructor's oral communication in the form of notes. Notes must have the note taker's name as well as the instructor's name, the course number, and the date.

Student Support and Disability Accommodations: In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act of 1990, professional disability specialists and support staff at the Disability Resource Center (DRC) facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities. [Qualified students with disabilities may be eligible to receive academic support services and accommodations](#). Eligibility is based on qualifying disability documentation and assessment of individual need. Students who believe they have a current and essential need for disability accommodations are [responsible for requesting accommodations and providing qualifying documentation](#) to the DRC. Every effort is made to provide reasonable accommodations for qualified students with disabilities. Qualified students who wish to request an accommodation for a disability should contact their campus DRC at: <http://www.asu.edu/studentaffairs/ed/drc/>. If you are a student in need of special arrangements we will do all we can to help, based on the recommendations of these services. For the sake of equity for all students, we cannot make any accommodations without formal guidance from these services.

Sexual Violence and Harassment: Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <http://sexualviolenceprevention.asu.edu/faqs/students>.

Drop and Add Dates/Withdrawals: Please refer to the [academic calendar](#) on the deadlines to drop/withdraw from this course. Consult with your advisor and notify your instructor if you are going to drop/withdraw this course. If you are considering a withdrawal, review the following policies: [Withdrawal from Classes](#), [Medical/Compassionate Withdrawal](#).

Email Communications

All email communication for this class will be done through your ASU email account and the blackboard site. You should be in the habit of checking your ASU email regularly as you will not only receive important information about your class(es), but other important university updates and information. You are solely responsible for reading and responding if necessary to any information communicated via email. For help with your email go to: http://help.asu.edu/sims/selfhelp/SelfHelpHome.seam?dept_pk=822 and file a help desk ticket by clicking on "My Help Center."

Campus Resources: As an ASU student you have access to many resources on campus. This includes tutoring, academic success coaching, counseling services, financial aid, disability resources, career and internship help and many opportunities to get involved in student clubs and organizations.

Tutoring: <https://tutoring.asu.edu/tutoring>

Counseling Services: <http://students.asu.edu/counseling>
Financial Aid: <http://students.asu.edu/financialaid>
Major/Career Exploration: <https://cls.asu.edu/majorexploration>
Career Services: <http://students.asu.edu/career>
Student Organizations: <http://www.asu.edu/studentaffairs/mu/clubs/>

This syllabus is subject to change. It is your responsibility to read e-mail updates from the instructor and TAs as well as check the blackboard site for alterations made as events occur.

FIS 335 Course Catalog Description

Provides a foundational understanding of how social organizations make and use knowledge. From research laboratories to biotechnology companies to statistical agencies, many organizations are specifically designed to be knowledge enterprises, enterprises whose primary purpose is to produce knowledge. All organizations in modern societies also operate knowledge systems: systems whose purpose is to create, validate, circulate, communicate and apply knowledge in the making of decisions. Examines how these forms of organization work and contribute to modern societies.

THE FIFTH BRANCH

Science Advisers as Policymakers

Sheila Jasanoff

Harvard University Press
Cambridge, Massachusetts
London, England

Contents

1. Rationalizing Politics	1
The Rise of Social Regulation	2
Science and Policymaking	4
Expertise and Trust	9
The Contingency of Knowledge	12
The Reform Debate	15
An Alternative Approach	17
2. Flawed Decisions	20
Nitrites	21
2,4,5-T	24
Love Canal	26
Estimates of Occupational Cancer	29
The Technocratic Response	32
A Critical Counterpoint	36
3. Science for the People	39
The Rationale for Public Science	40
The "New" Expert Agency	43
Scientific Advice and Open Government	45
Judicial Review of Science Policy	49
The Weakening of the Paradigm	57
4. Peer Review and Regulatory Science	61
The Traditions of Peer Review	62
Peer Review in Practice	64

Instructive Failures	69
Regulatory Science: Content and Context	76
Implications for Regulatory Peer Review	79
5. EPA and the Science Advisory Board	84
Early Political Challenges	84
A New Cooperation	89
Boundary Exercises	95
SAB's Impact on Policy	97
Conclusion	99
6. The Science and Policy of Clean Air	101
CASAC and the NAAQS Process	102
Science and Standards	104
Redefining CASAC's Role	112
The Carbon Monoxide Controversy	120
CASAC's Effectiveness: Bridging Science and Policy	121
7. Advisers as Adversaries	123
The Scientific Advisory Panel	124
Implementing the Impossible	127
Ethylene Dibromide	130
Dicofol	137
Alar	141
A Fragmentation of Authority	149
8. FDA's Advisory Network	152
The Scientific Evaluation of Drugs	154
Expertise and Food Safety	165
Advice and Decision	177
9. Coping with New Knowledge	180
The Quest for Principled Risk Assessment	181
Formaldehyde: An Uncertain Carcinogen	193
Conclusion	206

10. Technocracy Revisited	208
A Public-Private Partnership for Science	209
Risk Assessment without Politics	216
The Public Board of Inquiry	222
Wider Applications	226
11. The Political Function of Good Science	229
From Advice to Policy	230
Acceptable Risk	232
Scientific Advice as Legitimation: Negotiation and Boundary Work	234
Defining "Good Science"	236
Normative Implications	241
Conclusion	249
Notes	253
Index	293

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The Blind Side

Coach

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The Art of Winning an Unfair Game

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CONTENTS

<i>Preface</i>	XI
Chapter One	THE CURSE OF TALENT 3
Chapter Two	HOW TO FIND A BALLPLAYER 14
Chapter Three	THE ENLIGHTENMENT 43
Chapter Four	FIELD OF IGNORANCE 64
Chapter Five	THE JEREMY BROWN BLUE PLATE SPECIAL 97
Chapter Six	THE SCIENCE OF WINNING AN UNFAIR GAME 119
Chapter Seven	GIAMBI'S HOLE 138

Chapter Eight	SCOTT HATTEBERG, PICKIN' MACHINE	162
Chapter Nine	THE TRADING DESK	188
Chapter Ten	ANATOMY OF AN UNDERVALUED PITCHER	217
Chapter Eleven	THE HUMAN ELEMENT	244
Chapter Twelve	THE SPEED OF THE IDEA	263
Epilogue	THE BADGER	281
Afterword	INSIDE BASEBALL'S RELIGIOUS WAR	287
Acknowledgments		303
Index		305

Lately in a wreck of a Californian ship, one of the passengers fastened a belt about him with two hundred pounds of gold in it, with which he was found afterwards at the bottom. Now, as he was sinking—had he the gold? or the gold him?

—John Ruskin, *Unto This Last*