From:	Smith, Randy
To:	Clark, Jill
Cc:	Andridge, Rebecca; Reed, Katie; Smith, Randy; Orr, James; Duffy, Lisa; Greenbaum, Rob; Brown, Trevor
Subject:	Proposal to revise the undergraduate minor in Science and Engineering in the Public Interest
Date:	Thursday, July 13, 2023 1:45:22 PM
Attachments:	image001.png

Jill:

The proposal from the John Glenn College of Public Affairs to revise the undergraduate minor in Science and Engineering in the Public Interest was approved by the Council on Academic Affairs at its meeting on July 12, 2023. Thank you for attending the meeting to respond to questions/comments.

No additional level of internal approval is necessary. This action will be included in the Council's next Annual Activities Report to the University Senate (July 2023).

The Office of the University Registrar will work you with any implementation issues.

Please keep a copy of this message for your file on the proposal and I will do the same for the file in the Office of Academic Affairs.

If you have any questions please contact the Chair of the Council, Professor Rebecca Andridge (.1) or me.

Randy

THE OHIO STATE UNIVERSITY

W. Randy Smith, Ph.D.
Vice Provost for Academic Programs
Office of Academic Affairs
203 Bricker Hall, 190 North Oval Mall, Columbus, OH 43210
614-292-5881 Office
smith.70@osu.edu

General Information
Name: Proposal to revise the Science and Engineering in the Public Interest minor
Proposed Implementation Date: Autumn 2023
Academic Unit Responsible for Administrating the Minor: John Glenn College of Public Affairs

Rationale

The Science and Engineering in the Public Interest (SEPI) minor prepares students to act, innovate, and lead in the public interest. The minor provides students with foundational knowledge about public affairs and science, engineering, and technology policy, while building skills in systems thinking and innovation, interdisciplinary collaboration, strategic policy and science communication, and specific subject matter expertise. The John Glenn College of Public Affairs proposes a set of revisions to this existing undergraduate minor that are aimed at broadening appeal of the minor to students and increasing depth of study in a specific science and technology (S&T) policy domain.

The primary audience for the minor is undergraduate students in the Glenn College and across the university who wish to explore the conceptual and practical intersections of science and society and aim to address complex public problems. Revisions to the minor bolster its structured pathway of interdisciplinary coursework that supports building a technically savvy citizen-workforce. Most importantly, expanding the minor to a 15-credit hour minimum (from 12) requires students to take 2 domain specialty courses rather than 1, deepening their substantive knowledge of a specific S&T policy issue area. The SEPI minor committee worked with partners across the university, including the Sustainability Institute's Education Learning Committee and the College of Engineering's Committee on Core Curriculum, Teaching and Learning, to expand the list of domain courses to reflect a broader range of topics and disciplinary perspectives on S&T policy. At 15-credit hours, the SEPI minor will also be consistent with the credit hour minimum of the Glenn College's other minors.

In addition to expanding the list of domain courses, we have defined the minor's expected learning outcomes, updated the policy domain names to be more consistent with the groups of courses offered, and moved PUBAFRS 5770 (Risk and Decision Analysis) into the set of options to satisfy the upper-level bookend to the minor. We expect that these revisions will provide more clarity around the utility of the minor and thus increase its appeal to students across STEM, social science, and humanities majors. The proposed revisions to the SEPI minor were unanimously approved by the Glenn College Undergraduate Curriculum Committee, by electronic vote, in May 2023.

Expected Learning Outcomes
Upon completion successful completion of this minor students will be able to:

1. Understand and can conceptualize a range of contemporary issues in SET policy, the factors that drive SET innovation and the way it is accomplished, and the role of the public sector in SET and its processes.
2. Identify, analyze, and navigate complex modern challenges at the intersection of the policy, science, engineering, and technology domains using interdisciplinary methods and diverse perspectives.
3. Apply effective communication skills to develop, propose, and advocate for innovative, evidence-based policies for both public- and private-sector decision makers.

The Ohio State University
John Glenn College of Public Affairs Minor:

Science and Engineering in the Public Interest

The John Glenn College of Public Affairs
OSU Battelle Center for Science,
Engineering, and Public Policy
Page Hall, 1810 College Road
http://glenn.osu.edu http://battellecenter.org

Science and Engineering can shape and inform Public Policy and therefore the way that a society tackles its complex challenges. Reciprocally, Public Policy shapes both the content and the way that Science and Engineering are accomplished.

Success in science and engineering enterprises therefore requires not only a knowledge of technical topics, but also an understanding of the *context* in which science and engineering are undertaken. This context includes the nature of government funding for research and development, the impact of politics on research agendas, the mechanisms of policymaking that affect science and engineering, and the ways in which innovation is developed and adopted in organizational and community contexts.

The *Science and Engineering in the Public Interest* Minor prepares students to act, innovate, and lead in the public interest. The minor provides students with foundational knowledge about public affairs and science, engineering, and technology (SET) policy, while building skills in systems thinking and innovation, interdisciplinary collaboration, strategic policy and science communication, and specific subject matter expertise.

Expected Learning Outcomes of the Minor:

1. Students understand and can conceptualize a range of contemporary issues in SET policy, the factors that drive SET innovation and the way it is accomplished, and the role of the public sector in SET and its processes.

2. Students can identify, analyze, and navigate complex modern challenges at the intersection of the policy, science, engineering, and technology domains using interdisciplinary methods and diverse perspectives.

3. Students can apply effective communication skills to develop, propose, and advocate for innovative, evidence-based policies for both public- and private-sector decision makers.

Structure of the Minor:
The *Science and Engineering in the Public Interest* minor consists of 15-16 semester credit hours that provide students with (1) a broad awareness of this interdisciplinary landscape; (2) foundational public affairs knowledge; (3) and detailed understanding of a specific policy domain.

Choose 1 of 2 survey courses (3 credit hours)

PUBAFRS 2620 Science, Engineering and Technology for Policy and the Public Interest (3)

PUBAFRS 2110 Introduction to Public Affairs (3)

Choose 2 courses within one of these science and technology policy domains*# (6 credit hours)

Air & Space Policy

AVN 2000 Introduction to the Aviation Industry

AVN 3200 Aviation Regulations

SLAVIC 3333 The Soviet Space Age

PUBAFRS 3620 US Space Policy and the Global Space Economy

AVN 3700 Building a Diverse Workforce in Aviation

Energy & Environmental Policy

ARCH 2220 Sustainability and the Built Environment

ENR 2300 Society and Natural Resources

PHILOS 2342 Environmental Ethics

CRPLAN 2620 Planning for Future Cities

HISTORY 2700 Global Environmental History

CRPLAN 3000 Planning Resilient Environments

ENVENG 3200 Fundamentals of Environmental Engineering

ENR 3200 Environmental & Natural Resources Policy

ENR 3280 Water Quality Management

CRPLAN 3400 Planning for Sustainable Economic Development

FABENG 3400.01 Sustainability of the Food Supply Chain

EARTHSC 3411 Water Security for the 21st Century

SOCIOL 3460 Environmental Justice

CRPLAN 3550 Environmental Planning and Policy for a Sustainable Future

HISTORY 3700 American Environmental History

GEOG 3900 Global Climate Change: Causes and Consequences

BUSMGT 4253 Sustainable Operations

AEDECON 4320 Energy, the Environment, and the Economy

AEROENG 4518 Principles of Sustainable Engineering

AEDECON 4597 Population, Food and the Environment

ENVENG 4600 Assessment for Human Rights and Sustainability

ENVENG 5170 Sustainability and the Circular Economy

GEOG 5301 Sustainable Transportation

ENR/FABENG 5310 Ecological Engineering and Science

ENR 5451 Water Policy and Governance

MATSCEN 5572 Intro to Nuclear Science and Engineering

GEOG 5803 Sustainable Energy Geographies

Technology & Human Health Policy

HISTORY 2703 History of Public Health, Medicine and Disease

PUBHEHS 3310 Current Issues in Global Environmental Health

PUBHEHS 3320 Fundamentals of Environmental Health Risk Assessment

PUBHEHS 3330 Global Pandemics and Public Health

HWIH 3490 Technology-Based Health Promotion Strategies

CRPLAN 3500 The Socially Just City

PUBHHMP 3610 United States & International Health

Care

HISTORY 3701 History of American Medicine

PUBHEHS 4325 Climate Change and Human Health

PUBHEPI 4410 Social Epidemiology

EARTHSC 5203 Geo-environment and Human Health

PUBHEHS 5395/ENVENG 5195 Engineering Design for Environmental Health

PUBAFRS 5890 US Food Policy

PUBAFRS/ AEDECON 5900 Food System Planning and the Economy

Cyber & Data Privacy & Policy

CSE 2501 Social, Ethical, and Professional Issues in Computing

ISE 3700 Cognitive Engineering Systems

HISTORY 3702 Digital History

INTSTDS 3702 Herding Cyber Cats: Information Security Management

POLSCI 3785 Data Science for the Social and Behavioral Sciences

PUBAFRS 4040 Public Sector Data Sciences and Management

CSE 4471 Information Security

ISE 5194 Human Centered Machine Learning

Choose 2 of 5 upper-level courses (6-7 credit hours)

PUBAFRS/ENVENG 5600 Science, Engineering, and Public Policy (3)

PUBAFRS 5610 Innovation, Policy, and the Global Economy (3)

PUBAFRS 5620 Rapid Innovation for Public Impact (4; project-based)

PUBAFRS 5750 The Business-Government Relationship (3)

PUBAFRS 5770 Risk and Decision Analysis (3)

* Some courses within the minor have prerequisite requirements that should be taken into consideration.

Students may petition to count other relevant courses towards a domain with permission of the Glenn College.

SEPI minor program Guidelines:

Required for graduation: No

Credit hours required: A minimum of 15 credit hours. 1000-level courses shall not be counted in the minor. At least 6 credits must be at the 3000-level or above.

Transfer and EM credit hours allowed: A student is permitted to count up to 6 total hours of transfer credit and/or credit by examination.

Overlap with GE: A student is permitted to overlap up to 6 credit hours between the GE and the minor.

Overlap with the major and additional minor(s): Each minor completed must contain a minimum of 12 hours distinct from the major and/or additional minors (i.e., minors that require more than 12 hours may overlap those hours beyond 12 with the major or another minor).

Grades required:

- Minimum C- for a course to be listed on the minor
- Minimum 2.00 cumulative point-hour ration required for the minor
- Course work graded Pass/Non-pass cannot count on the minor
- No more than 3 hours of courses graded Satisfactory/Unsatisfactory may count toward the minor

X193 credit: No more than 3 credit hours.

Approval required: The minor course work must be approved by the academic unit offering the minor.

Filing the minor program form: The minor program form must be filed by the time the graduation application is submitted to the student's college/school/departmental advisor.

Changes to the minor: Once the minor program is filed in the college office, any changes must be approved by the John Glenn College of Public Affairs.

Fiscal Unit/Academic Org	John Glenn College of Pub Aff - D4240
Administering College/Academic Group	John Glenn College of Pub Aff
Co-adminstering College/Academic Group	
Semester Conversion Designation	Re-envisioned with significant changes to program goals and/or curricular requirements (e.g., degree/major name changes, changes in program goals, changes in core requirements, structural changes to tracks/options/courses)
Current Program/Plan Name	Science and Engineering in the Public Interest Minor
Proposed Program/Plan Name	Science and Engineering in the Public Interest Minor
Program/Plan Code Abbreviation	SCIENPP-MN
Current Degree Title	

Credit Hour Explanation

Program credit hour requirements		A) Number of credit hours in current program (Quarter credit hours)	B) Calculated result for 2/3rds of current (Semester credit hours)	C) Number of credit hours required for proposed program (Semester credit hours)	D) Change in credit hours
Total minimum credit hours required for completion of program		12	8.0	15	3
Required credit hours offered by the unit	Minimum	9	6.0	9	0
	Maximum	12	8.0	12	0
Required credit hours offered outside of the unit	Minimum	0	0.0	3	3
	Maximum	3	2.0	6	3
Required prerequisite credit hours not included above	Minimum	0	0.0	0	0
	Maximum	0	0.0	0	0

Program Learning Goals

Note: these are required for all undergraduate degree programs and majors now, and will be required for all graduate and professional degree programs in 2012. Nonetheless, all programs are encouraged to complete these now.

Program Learning Goals

- Upon successful completion of this minor students will:
- Understand and can conceptualize a range of contemporary issues in SET policy, the factors that drive SET innovation and the way it is accomplished, and the role of the public sector in SET and its processes.
- Identify, analyze, and navigate complex modern challenges at the intersection of the policy, science, engineering, and technology domains using interdisciplinary methods and diverse perspectives.
- Apply effective communication skills to develop, propose, and advocate for innovative, evidence-based policies for both public- and private-sector decision makers.

Assessment

Assessment plan includes student learning goals, how those goals are evaluated, and how the information collected is used to improve student learning. An assessment plan is required for undergraduate majors and degrees. Graduate and professional degree programs are encouraged to complete this now, but will not be required to do so until 2012.

Is this a degree program (undergraduate, graduate, or professional) or major proposal? No

Program Specializations/Sub-Plans

If you do not specify a program specialization/sub-plan it will be assumed you are submitting this program for all program specializations/sub-plans.

Pre-Major

Does this Program have a Pre-Major? No

Attachments

- SEPI Minor revisions 2023.pdf: Proposed Revisions

  (Program Proposal. Owner: Adams,Christopher John)

- 2023_SEPI-minor-sheet.docx: Advising Sheet

  (Semester Advising Sheet(s). Owner: Adams,Christopher John)

Comments

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Adams,Christopher John	05/26/2023 02:45 PM	Submitted for Approval
Approved	Adams,Christopher John	05/26/2023 02:46 PM	Unit Approval
Approved	Adams,Christopher John	05/26/2023 02:49 PM	SubCollege Approval
Approved	Greenbaum,Robert Theodore	05/30/2023 10:43 AM	College Approval
Approved	Vankeerbergen,Bernadette Chantal	05/30/2023 11:32 AM	ASCCAO Approval
Approved	Martin,Andrew William	05/30/2023 11:36 AM	ASC Approval
Pending Approval	Reed,Kathryn Marie Greenbaum,Robert Theodore	05/30/2023 11:36 AM	CAA Approval