Program Change Request

New Program Proposal

Date Submitted: 01/05/21 12:23 pm

Viewing: : STEM in Society Minor

Last edit: 01/05/21 12:23 pm

Changes proposed by: jbowen4

Are you completing this form on someone else's behalf?
No

Effective Catalog: 2021-2022

Program Level: Undergraduate

Program Type: Minor

Title:
STEM in Society Minor

Banner Title: STEM in Society Minor

Is this a retitling of an existing program? No

Registrar's Office Use Only – Program Start Term

Registrar/OAPI Use Only – SACSCOC Status

College/School: College of Humanities & Social Sciences

Department / Academic Unit: History & Art History

Jointly Owned Program? Yes

Participating Colleges

	College
1	College of Health & Human Services
2	College of Science

In Workflow

1. **Registrar-Programs:Workflow Review**
2. **LA Associate Dean**
3. **SC Curriculum Committee**
4. HH CAT Reviewer
5. VS Undergraduate Studies Committee Chair
6. VS Associate Dean-Undergraduate
7. HH Associate Dean
8. SC Associate Dean
9. HH CAT Editor
10. SC CAT Editor
11. VS CAT Editor-Undergraduate
12. LA CAT Editor
13. Assoc Provost-Undergraduate
14. Registrar:Create Code
15. SACSCOC New Program Approval
16. SCHEV New Program Approval
17. Registrar-Programs: Duration
18. Registrar-Programs

Approval Path

1. 01/05/21 1:25 pm Johanna Riemen (jriemen): Approved

	College
3	Volgenau School of Engineering

Participating Departments

Justification

for Registrar-Programs:Workflow Review
2. 01/05/21 2:07 pm Jill Bowen (jbowen4): Approved for LA Associate Dean

The proposed “STEM in Society” minor will help students in diverse majors across George Mason, both technical and non-technical, develop strategic and critical thinking capabilities to better understand how science, technology, engineering, and mathematics (STEM), as well as medicine, impact the human experience—past, present, and future.

Completing the minor will give students a broad perspective of the STEM fields, to include how advances are developed, how they fit into the wider context of society and culture, and how historical contexts have in turn shaped advances in these fields. Amazon’s move to Northern Virginia is only the latest example of what economists call “business clustering” or “technopoles,” the idea that industries locate together to benefit from economies of scale in resources and personnel. However, Amazon and other tech firms and industries, such as health care, need more than just cyberwarriors and coders. The humanities and social sciences are highly represented in tech firm leadership, as STEM becomes more integrated into people’s everyday lives; Microsoft and Intel famously hire social scientists, and you find anthropologists and sociologists, for instance,working in places like LinkedIn and Facebook. Above all, these firms are looking for people who can think strategically and critically about STEM (plus medicine) and its role in societies and cultures. They also need individuals who can frame their ideas in a narrative structure.

The skills and competencies that students will gain from this minor expand beyond the tech and health care industries and will be useful to students looking to work in fields like international development and public policy or in non-profits, the government, or think tanks. Through coursework in the minor, students will gain the knowledge to solve real world social, medical, technological, and environmental problems with particular attention to the interactions between STEM and lived experience. This minor will help students recognize that STEM is complex and context dependent and will aid them in identifying how it is historically and culturally developed and applied and taken up in various (and often uneven) ways around the world.

The Minor and Mission of George Mason
The “STEM in Society” minor is the result of a Curriculum Impact Grant awarded in June 2020. Letters of support are attached from all colleges and some specific departments involved in the

minor. The minor will enhance George Mason's critical missions.Solutions to many of the world's most vexing social challenges—climate change, genetic engineering, epidemics and pandemics, big data—will require technical solutions that are simultaneously socially acceptable, ethical, politically legitimate, and economically viable. The minor will help to advance a new generation of leaders who can understand the complex and interconnected issues around science, technology, engineering, and medicine; generate new knowledge about how to develop and govern them in an ethically and socially responsible way; and effectively use scientific and technical knowledge to guide public and private action. This minor will help produce two types of graduates: 1) ethically and socially responsible scientists, technologists, and engineers who have a sophisticated understanding of the social dimensions of their fields, and 2) humanities and social science-focused individuals who are unafraid to engage in the technical dimensions of their chosen professions. This minor will make students well-equipped to do so by helping them better understand the broader implications—on a global and local scale—of science and technology and to see how these domains are historically and culturally shaped. It will also be integral to the establishing of more technical and scientific programs happening at Mason, such as the creation of the College of Engineering and Computing, the work at the Institute for Digital Innovation, and the links to Amazon and a potential medical school, as being able to view the bigger picture and developing cultural and global competencies are also important skills in professions such as IT and health care and can help individuals move into leadership roles in their fields and industries.

Courses in the Minor

The "STEM in Society" minor will consist of 15 credits. All students will be required to take the required foundational course (3 credits) and then after they successfully complete the foundational course, they each select an additional 12 credits to complete from the approved list of courses. The elective courses are divided into themes, but students are not 2required to select the 12 credits from one specific theme nor do they have to complete a set number of courses under each theme. They have flexibility in terms of their electives so these courses can reflect their academic and professional interests and best complement their major degree program.

Faculty and Students

The team of faculty who worked on the CIG put several measures in place to help guarantee that this minor is successful. All of these faculty members will continue aiding in the implementation of the minor. This team comprises faculty from the Department History and Art History (Brian Platt), Department of Sociology and Anthropology and Global Affairs (Cortney Hughes Rinker), Volgenau School of Engineering (Larrie Ferreiro, Kamaljeet Sanghera), College of Science (Padmanabhan Seshaiyer), College of Health and Human Services (Laura Poms), and College of Humanities and Social Sciences (Vita Chalk). Having faculty from across colleges involved helps 1) ensure that this minor is visible to students in a wide variety of major degree programs and 2) provides better coordination of the elective courses given many of the faculty

are located within the units that offer them or work with those units in some capacity. There are several courses included in the electives to guarantee that students can complete the minor in a timely fashion in case some courses are not offered during a specific year. We anticipate that students from CHSS, CHHS, VSE, and COS will enroll inthis minor. There are no pre-requisites for the minor beyond what is required of some the elective courses, which means it will be accessible by students in many different programs. We do not anticipate this minor requiring any additional resources, such as new faculty hires or funding. As the minor begins, the Director will advise the students enrolled.The position of Minor Director will rotate among the faculty listed in the previous paragraph

Additional Justification:

See letters of support.

Catalog Published Information

Total Credits Required: Total credits: 15

Registrar's Office Use Only - Program Code:

Registrar/IRR Use Only – Program CIP Code

Admission Requirements:

Program-Specific Policies:

Eight credits of coursework must be unique to the minor and students must earn a minimum grade of 2.00 in all courses applied to the minor. For policies governing all minors, see AP.5.3.4 Minors.

Degree Requirements:

Required Course

HIST 315	STEM and Society: A History	3
Total Credits		3

Electives

Select 12 credits from any of the following courses		12
Historical		
HIST 202	Freshman/Sophomore Seminar in Global History	
HIST 378	History of Aviation	

HIST 390	The Digital Past
PROV 301	Great Ideas in Science (Mason Core)
BIOL 301	Biology and Society (Mason Core)

Medicine and Health

PHIL 344	Ethical Issues in Global Health
ANTH 363	Humans, Disease, and Death (Mason Core)
ANTH 365	Scientific Racism and Human Variation
ANTH 381	Medical Anthropology
GCH 445	Social Determinants of Health
or SOCW 445	Social Determinants of Health
GCH 205	Global Health (Mason Core)
GCH 360	Health and Environment

Environment

PHIL 243	Global Environmental Ethics (Mason Core)
ANTH 370	Environment and Culture
CEIE 100	Environmental Engineering around the World (Mason Core)
CLIM 101	Global Warming: Weather, Climate, and Society (Mason Core)
EVPP 436	The Human Dimensions of Global Climate Change
GGS 307	Geographic Approaches for Sustainable Development

Science and Technology

PHIL 377	Darwin: Biology and Beyond (Mason Core)
ANTH 395	Work, Technology, and Society: An IT Perspective
ANTH 314	Zombies
SOCI 391	Big Data, Technology, and Society
INTS 301	Science in the News (Mason Core)
INTS 348	Digital Futures
IT 304	IT in the Global Economy
COS 400	Problem Solving and Leadership in STEAM

Policy

EVPP 432	Energy Policy
EVPP 361	Introduction to Environmental Policy
NUTR 318	Global Nutrition and Food Security
NUTR 440	Nutrition Policy
BENG 475	Intellectual Property, Regulatory Concepts and Product Development

Special Topics Courses (with permission of minor director when topic is related to STEM in Society)

HIST 387	Topics in Global History (Mason Core)
ANTH 396	Issues in Anthropology: Social Sciences (Mason Core)
ANTH 399	Issues in Anthropology
SOCI 395	Special Topics in Sociology
GLOA 400	Global Affairs Capstone (Mason Core)
GLOA 450	Topics in Global Affairs

ENGR 499	Special Topics in Engineering
INTS 375	Special Topics
INTS 475	Special Topics
NUTR 495	Nutrition and Food Studies Capstone
GCH 494	Special Topics in Global and Community Health
Total Credits	12

Retroactive Requirements Updates:

Program Outcomes

OAPI Use Only – Determination of SACSCOC Impact

Comments or Notes

Does this program cover material which crosses into another department?

Yes

Impacted Departments

Additional Attachments

Andalibi support.pdf
Best support.pdf
Ardis support.pdf
Platt support.pdf
Ball support.pdf

Reviewer Comments

Additional Comments

Is this course required of all students in this degree program?

%wi_required.eschtml%

Key: 906