

SCIENCE COMMUNICATION CERTIFICATE

The science communication certificate provides an opportunity for students to develop their public communication skills, to interface with students and faculty across disciplinary and science-public divides, and to give students an edge in the job market where successful communication with a multitude of stakeholders is essential. As a discipline, science communication brings together theory and practice to communicate scientific information to the public, with an emphasis on two-way and strategic communication with the public.

This certificate is designed to encourage students who are interested in the intersection of science and society to pursue coursework that provides them with the skills to practice public-facing science and effectively engage the public around complex and sometimes controversial scientific topics. In addition, the certificate is designed to facilitate convergence across disciplines and encourage team-based collaboration at the undergraduate level.

The certificate is open to students of any major, but may be of particular value to students who are planning to pursue science, environmental, health or agricultural communication as a career or students pursuing a career in a science, engineering, math and other technical fields interested in strengthening their communication skills.

Objectives

- Encourage students to engage with community members, other students and faculty across interdisciplinary boundaries, diverse backgrounds, and divergent interests.
- Prepare students to communicate scientific findings and technological advances in a clear and compelling manner while also encouraging inclusive communication that acknowledges others' values and concerns.
- Cultivate students' understanding of the origins and dynamics of science related controversies and conflicts.
- Challenge students to identify and address scientific misinformation, scientific skepticism, and science denial across social media, blogs, and other social and online networks.
- Prepare students to engage in constructive conversations with diverse audiences over contested science, environmental, health, and agricultural topics.

Student Learning Outcomes

Students who complete the proposed science communication certificate will be able to:

- Create, co-produce, and evaluate public-facing science communication

- Understand and address the ethical, social, cultural, and historical factors that influence both the public communication of science and the rise and spread of science-related controversies
- Promote public and cross-disciplinary understanding of scientific information
- Co-produce knowledge with community stakeholders through public-facing projects
- Create effective and appropriate science messages across diverse and emergent media platforms, addressed to diverse audiences
- Critically analyze science messages addressed to public audiences around science
- Identify and address misinformation across social media, blogs, and other social and online networks
- Engage in constructive conversations about contested science, environmental, health, and agricultural topics

To prepare students for the challenge of communicating effectively at the intersection of science and society, students will take a core of 12-credits from the Greenlee School of Journalism and Communication, the English Department, and the Department of Philosophy and Religious Studies and 9-credits of electives from three tracks: science in practice, science and society, and communication in practice.

The certificate requires 21 credits, where 9 of the credits taken do not fulfill any other requirements for other majors or general education. Students must complete ENGL 250 before enrolling in the certificate. To successfully complete the certificate, students must submit and receive approval for a final portfolio consisting of a minimum of three applied, public-facing projects developed during or outside of their course work. A cumulative grade point average of at least 2.0 is required in courses taken for the certificate.

Core Courses (12 credits)

JL MC 260	Media Controversies in Science and Technology	3
PHIL 206	Introduction to Logic and Scientific Reasoning	3
ENGL 312	Communicating Science and Public Engagement	3
JL MC 347	Science Communication	3

Electives (9 credits)

Students will take one course from each of the three categories of electives: Science in Practice, Science and Society, and Communication in Practice.

- 6 of the 9 credits must be at the 300+ level.
- Students who engage in an internship or research experience (including those connected to courses) may seek approval from the steering committee to have this experience counted as an elective course. This experience must include a public-facing communication/outreach component, and the steering committee will decide which

of the 3 categories of electives this experience would fulfill. Students who wish to count the internship toward the certificate must track their hours as well as complete a final paper about their experiences.

Science in Practice - select 1 course

BIOL 173	Environmental Biology	3
BIOL 251	Biological Processes in the Environment	3
BIOL 355	Plants and People	3
ENSCI 250	Environmental Geography	3
ENSCI 318	Introduction to Ecosystems	3
ENSCI 360	Environmental Soil Science	3
GEOL 101	Environmental Geology: Earth in Crisis	3
GEOL 102	History of the Earth	3
GEOL 108	Introduction to Oceanography	3
GEOL 160	Water Resources of the World	3
GEOL 201	Geology for Engineers and Environmental Scientists	3
GEOL 324	Energy and the Environment	3
MTEOR 404	Global Change	3
MTEOR 406	World Climates	3
NREM 120	Introduction to Renewable Resources	3
NREM 380	Field Ecology Research and Teaching	3

Science and Society - select 1 course

EDUC 347	Nature of Science	3
ENGL 355	Literature and the Environment	3
HIST 362	Global Environmental History	3
HIST 367	America Eats	3
HIST 383	Technology, Public Science, and European Culture, 1715-Present	3
HIST 482	Birth, Death, Medicine, and Disease	3
JL MC 401	Mass Communication Theory	3
JL MC 474	Communication Technology and Social Change	3
JL MC 476	World Communication Systems	3
PHIL 331	Moral Problems in Medicine	3
PHIL 334	Environmental Ethics	3
PHIL 336	Bioethics and Biotechnology	3
PHIL 343	Philosophy of Technology	3
PHIL 380	Philosophy of Science	3
PHIL 389	Philosophy of Psychology and Psychiatry	3
PHIL 485	Philosophy of Physics	3
POL S 283	Introduction to Environmental Politics and Policies	3
POL S 335	Science, Technology, and Public Policy	3
POL S 443	Energy Policy	3
SOC 382	Environmental Sociology	3

SOC 464	Strategies for Community Engagement	3
WGS 307	Women in Science and Engineering	3
WGS 320	Ecofeminism	3
WGS 380	History of Women in Science, Technology, and Medicine	3
WLC 484	Technology, Globalization and Culture	3

Communication in Practice - select 1 course

COMST 327	Persuasion and Social Influence	3
COMST 450B	Special Topics in Communication Studies: Health Communication	3
ENGL 309	Proposal and Report Writing	3
ENGL 314	Technical Communication	3
ENGL 332	Visual Communication of Quantitative Information	3
ENGL 350	Rhetorical Traditions	3
ENGL 411	Technology, Rhetoric, and Professional Communication	3
ENGL 477	Seminar in Technical Communication	3
ENGL 487	Internship in Business, Technical, and Professional Communication	1-3
LING 120	Computers and Language	3
NREM 330	Principles of Interpretation	3
P R 220	Principles of Public Relations	3
P R 305	Publicity Methods	3
P R 323X	Strategic Communication in Agriculture and the Environment	3
SP CM 212	Fundamentals of Public Speaking	3
SP CM 310	Rhetorical Analysis	3