

Fiscal Unit/Academic Org	School Of Communication - D0744
Administering College/Academic Group	Arts and Sciences
Co-administering College/Academic Group	
Semester Conversion Designation	New Program/Plan
Proposed Program/Plan Name	Science & Environmental Communication Certificate
Type of Program/Plan	Undergraduate certificate program
Program/Plan Code Abbreviation	SEC
Proposed Degree Title	Science & Environmental Communication Certificate

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	
Required credit hours offered by the unit	Minimum			6	
	Maximum			12	
Required credit hours offered outside of the unit	Minimum			0	
	Maximum			6	
Required prerequisite credit hours not included above	Minimum			0	
	Maximum			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**
- Identify and apply communication theories to the design, execution, and evaluation of effective communication about science, environmental, and sustainability topics to organizational stakeholders and the general public
 - Demonstrate the ability to engage in clear, persuasive, and professional strategic communication about science, the environment, and sustainability across a range of modalities and team, organizational, and public settings.
 - Enhance the ability to solve problems within science, environment, and sustainability fields through the interdisciplinary integration of communication knowledge and practice.

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

- Science and Environmental Communication Certificate Proposal.pdf: Sci & Env Comm Certificate
(Program Proposal. Owner: Butte,Kylie M.)

Comments

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Butte,Kylie M.	12/10/2019 01:43 PM	Submitted for Approval
Approved	Kline,Susan Lee	12/10/2019 01:46 PM	Unit Approval
Approved	Haddad,Deborah Moore	12/10/2019 04:56 PM	College Approval
Pending Approval	Jenkins,Mary Ellen Bigler Hanlin,Deborah Kay Oldroyd,Shelby Quinn Vankeerbergen,Bernadette Chantal	12/10/2019 04:56 PM	ASCCAO Approval



December 9, 2019

Vice Provost Randy Smith and CAA Members:

I write on behalf of the College of Arts and Sciences in support of the proposed embedded interdisciplinary Certificate program from the School of Communication in Science and Environmental Communication. This is a well-conceived program that will certainly meet a need in the workplace, and it will be a valuable complement to majors in STEM, environmental, and sustainability majors.

Sincerely,

Steve Fink

Associate Executive Dean for Curriculum and Student Engagement



November 18, 2019

Assistant Dean Deborah Moore Haddad
College of Arts and Sciences

Re: Request to Submit an Undergraduate Certificate in Science and Environmental
Communication from the School of Communication

Dear Dean Haddad,

The School of Communication submits our proposed Certificate in Science and Environmental
Communication, a Type 1a interdisciplinary certificate, for approval by the College.

This certificate program will educate students on the theory and practice of communicating about
scientific, environmental, and/or sustainability topics and issues, as well as provide an
opportunity for developing lifelong professional communication skills, while highlighting the
interdisciplinary social-behavioral, educational and psychological dimensions of science and
environmental communication.

The 12-credit program will serve degree seeking undergraduates who are currently enrolled at
Ohio State University. Students will be required to complete two foundational courses (6 credits)
within the School of Communication and an additional two courses (6 credits) from a selection
of twenty-five courses spread across 10 different departments and units on campus. Dr. Erik
Nisbet has been a key developer of this certificate. We hope that you are enthused as we are
about this proposal.

Attached you will find the proposal, four year plan, and concurrences from all participating units.

Regards,

Susan L. Kline, PhD
Associate Professor
Director, Undergraduate Communication Program
School of Communication

“SCIENCE AND ENVIRONMENTAL COMMUNICATION” CERTIFICATE PROGRAM PROPOSAL

Overview

The School of Communication proposes a 12 credit certificate program in “SCIENCE and ENVIRONMENTAL COMMUNICATION.” **We intend to serve students wishing to expand their capabilities in environment and sustainability communication, communication in a wide range of scientific and technical disciplines, and with regard to science communication more generally.** The certificate program educates students on the theory and practice of communicating about scientific, environmental, and/or sustainability topics and issues, provides an opportunity for developing lifelong professional communication skills, and highlights the interdisciplinary social-behavioral, educational, and psychological dimensions of science and environmental communication. The program designs meets the needs of undergraduate students within STEM, environmental science, and sustainability fields of study for the communication knowledge and skills necessary to be successful professionals and leaders.

A recent report to the OAA by the Sustainability Education and Learning Committee found that that OSU “should aim to provide opportunities to students to better develop communication, leadership, management, and professionalism skills. Many employers cite that these ‘soft’ skills are more critical than specific disciplinary training.”¹ Likewise, peer-reviewed research published in the *Proceedings of the National Academy of Sciences* on science and technology education demonstrates the “increasing importance of uniquely human skills, such as communication, negotiation, and persuasion” to science and technology professions, yet the researchers note at the same time these skills are “undersupplied through education for the labor market.”² A recent National Academies of Sciences, Engineering, and Medicine report echoes these observations by asserting that many science communicators have a shallow and narrow understanding of communication processes and objectives that hamper their ability to communicate effectively with diverse audiences.³

Our certificate helps address these needs across a broad range of science, technical, and environmental majors. The program would be initially proposed to consist of in-person and hybrid classes with the goal of providing online and hybrid versions of all the foundational required courses (COMM 2596, COMM 3340, and COMM 4240) by Autumn 2020. The proposed certificate program would be administered by the School of Communication with the required foundational courses taught within the School of Communication. The additional two elective courses required to complete the certificate may be selected from a list of pre-determined courses available in the School of Communication, School of Environment & Natural Resources, the Department of Agricultural Communication, Education, and Leadership, and other programs that offer a specialized course in communication/public education in their field. Students will also have the opportunity to petition to have one relevant course from their major count toward the elective requirement for the certificate if it is not explicitly included on our list.

Rationale and Learning Objectives

Rationale: There are 34 environmental and sustainability related majors at the Ohio State University that collectively graduated nearly 3400 students in 2017-2018 academic year, a growth of 18% since 2013-

¹ Sustainability Education and Learning Committee (20, May 2019). *Recommendations for Undergraduate Sustainability Education at Ohio State*. Sustainability Institute. The Ohio State University, pg. 13

² Borner, K., Scriver, O., Gallant, M., Ma, S., Liu, X, Chewning, K., Wu, L., Evan, J.A. (2018). Skill discrepancies between research, education, and jobs reveal the critical need to supply soft skills for the data economy *Proceedings of the National Academy of Sciences*. 115 (50) 12630-12637; DOI: 10.1073/pnas.1804247115

³ National Academies of Sciences, Engineering, and Medicine (2016) *Communicating Science Effectively: A Research Agenda*. Washington, DC: The National Academies Press. doi: 10.17226/23674.

2014.⁴ Likewise, enrollment in the College of Engineering now accounts for 18% of all undergraduate majors at OSU and the John Glenn School of Public Affairs recently created a new minor in Science, Engineering and Public Policy. While the number of sustainability, environmental science, and STEM majors have grown at OSU, there is increasing awareness that these students need to be equipped with the knowledge and skills to effectively communicate and lead within STEM and environmental/sustainability professions and industries.

While there is lack of educational opportunities in science and environmental communication, at the same time there is a growing occupational need for a trained labor force with the requisite knowledge and skills in this area. Governmental, non-governmental organizations, corporations, and advocacy groups increasingly need public information and communication professionals and technical writers that can communicate complex science and environmental information and topics to a diverse range of audiences and stakeholders. The Bureau of Labor statistics estimates the demand for these professions will grow by 9% and 11% over the next ten years (faster than average) with median salaries ranging from \$60,000 to \$70,000 on average.⁵

The proposed certificate program also leverages OSU's strengths and addresses weaknesses on sustainability education highlighted in the aforementioned OAA sustainability education report. The report notes that while a strength of OSU is strong student demand for STEM and sustainability course content and programs, a core weakness at OSU is a lack of interdisciplinary programs that integrate science, environmental, and sustainability fields with social sciences and humanities - such as science and technology studies (STS) or environmental humanities programs. However, by creating an interdisciplinary certificate program at OSU that pairs courses from science, environmental, and sustainability fields with course work from social sciences centered on communication theory and skills this weakness is addressed.

Learning Objectives: The proposed certificate program provides a knowledge foundation for effective science and environmental, and sustainability communication, opportunities to build communication skills necessary for professional success, and provides an interdisciplinary platform for connecting STEM, sustainability, and environmental science fields with social sciences at OSU.

Therefore, upon completion of the academic certificate in science and sustainability communication learners will be better prepared to:

- Identify and apply communication theories to the design, execution, and evaluation of effective communication about science, environmental, and sustainability topics to organizational stakeholders and the general public (ELO1)
- Demonstrate the ability to engage in clear, persuasive, and professional strategic communication about science, the environment, and sustainability across a range of modalities (i.e. written, spoken, online, etc.,) and team, organizational, and public settings. (ELO2)
- Enhance the ability to solve problems within science, environment, and sustainability fields through the interdisciplinary integration of communication knowledge and practice. (ELO3)

These three established learning outcomes (ELOs) form the conceptual foundation for the design of the certificate and its curriculum.

⁴ Sustainability Education and Learning Committee (20, May 2019). *Recommendations for Undergraduate Sustainability Education at Ohio State*. Sustainability Institute. The Ohio State University

⁵ See <https://www.bls.gov/ooh/media-and-communication/public-relations-specialists.htm> and <https://www.bls.gov/ooh/media-and-communication/technical-writers.htm>

Relationship to Other Programs

Relationship to Other Programs: The proposed certificate program overlaps somewhat with the existing Health, Environmental, Risk, and Science minor within the School of Communication though there are substantial differences. They share the same required foundational course (COMM 2596 – An Introduction to Health, Environment, Risk, & Science Communication) and some elective offerings. However, they differ substantially in that the minor provides depth within the communication discipline with four courses (12 credits) taken within the School of Communication whilst the proposed certificate has a more interdisciplinary focus. The certificate program requires two foundation courses (6 credits) in the School of Communication with the remaining six credits may be taken within communication, other units such as SENR or CFAES, or their own major.

The proposed certificate program, thus, is a unique interdisciplinary complement to existing programs in SENR, CFAES, or ASC that focus on science, environment, or sustainability. The SENR and Department of Agricultural Communication, Education, and Leadership in CFEAS are major partners in providing elective course offerings for the certificate program and their concurrence and MOU for the program are included. Other programs that contribute courses to the certificate's electives are the John Glenn School of Public Policy, the College of Pharmacy, and the Departments of Comparative Studies, Evolution, Ecology, and Organismal Biology in ASC.

Proposed Curriculum

The certificate program requires 12 credits of coursework with six credits stemming from two required courses and six credits selected from a list of pre-determined electives. The courses selected for the required and elective portions of the curriculum all align with one or more of the outline established learning outcomes (ELOs) of 1) identifying and applying communication theories to the design, execution, and evaluation of effective communication on science, environmental, and sustainability topics (ELO1), 2) demonstrating the ability to engage in clear and persuasive strategic communication about science and the environment across a range of modalities and settings (ELO2), 3) enhancing the ability to solve problems within science, environment, and sustainability fields through the interdisciplinary integration of communication.

Required Courses:

Two courses within the School of Communication are required for the certificate and two courses may be selected from a list of provided electives. The first required course provides a broad overview and introduction to key components of science and environmental communication across multiple dimensions and contexts. This required course is:

- COMM 2596: An Introduction to Health, Environment, Risk, and Science Communication
 - Provides a general introduction to the fields of science, risk, environmental and health communication from multiple perspectives including psychological, social, and cultural. The course provides the conceptual and knowledge foundation for engaging in effective communication of science and environmental topics across a range of contexts. Upon successful completion of this course, students will (1) have the conceptual and knowledge foundation for engaging in effective communication of science and environmental topics across a range of contexts (ELO1) (2) experience analyzing and communicating about communication problems or challenges within science, environment, or sustainability (ELO2).

In addition to COMM 2596, students are required to choose one of two more advanced offerings in either science or environmental communication depending on their interest and needs. These two courses are

- COMM 3340: Principles of Environmental Campaigns
 - Principles Environmental Campaigns equips students with the knowledge and practical knowledge regarding the creation, dissemination, and evaluation of campaigns aimed at environmental issues. The course will introduce students to advanced theories of environmental communication, psychological behavior change, as well as research methodology pertaining to campaign design, measurement, and evaluation. Upon successful completion of this course, students will (1) be able to identify and apply communication theories toward the development of a campaign aimed at a specific environmental or sustainability outcome (i.e., raising awareness or changing behavior), (ELO1) (2) demonstrate the ability to clearly and persuasively communicate about an environmental problem or topic to diverse audience across a range of channels and communication mediums within a team setting (ELO 2), and (3) and critically evaluate interdisciplinary issues pertaining to public understanding of environmental and sustainability topics and issues (ELO3).
- COMM 4240: Science Communication
 - This course is a hybrid course focusing on the theory and practice of science communication to public and non-expert audiences. Topics include how audiences understand and process science information, expert communication by scientists and policy-makers to public audiences, informal communication about science in museums and science centers, science journalism, the role of the mass media in shaping understanding and beliefs about science, edu-tainment and documentaries, and citizen-science. Upon successful completion of this course, students will (1) identify and apply communication theories and practices to design effective science communication programs for diverse audiences and contexts (ELO1), (2) have an understanding of informal science communication in mediated and interpersonal contexts including news media, documentaries, science centers, and science cafes (ELO2), 3) work as a team to critically analyze a science communication problem and develop strategy and plan to communicate it clearly and persuasively to target audiences (ELO2), 4) an understanding of how science communication intersects with other approaches to communication and outreach in science and sustainability fields (ELO3).

Elective Courses

In addition to the two required courses, students will chose AT LEAST 2 elective course from a selection of courses from the School of Communication and other units offering opportunities to further develop their ability to engage in clear and persuasive strategic communication about science and the environment across a range of modalities and settings (ELO2) and/or their the ability to solve problems within science, environment, and sustainability fields through the interdisciplinary integration of communication (ELO3).

Elective Courses in School of Communication

Communication 2131: Business & Professional Speaking (ELO 1, 2)

Communication 2511: Visual Communication Design (ELO 1, 2)

Communication 3325: Introduction to Organizational Communication (ELO 1, 2)

Communication 3330: Communication and Conflict Management (ELO 1, 2)

Communication 3332: Risk Communication (ELO 1, 2, 3)

Communication 3333: Crisis Communication (ELO 1, 2)

Communication 3340: Principles of Environmental Campaigns (if not selected as foundation course) (ELO 1, 2, 3)

Communication 3638: Contemporary Persuasion Theory (ELO 1, 2)

Communication 4240: Science Communication (if not selected as foundation course) (ELO 1, 2, 3)

Elective Courses in School of Environment & Natural Resources

Environment & Natural Resources 2367: Communicating Environmental and Natural Resources Information (ELO 2, 3)

Environment & Natural Resources 3400: Psychology of Environmental Problems (ELO 1, 3)

Environment & Natural Resources 3611: Foundations for Environmental Communications, Education and Interpretation (ELO 1, 2, 3)

Environment & Natural Resources 4611: Environmental Interpretation and Visitor Services (ELO 1, 2, 3)

Environment & Natural Resources 5400: Interventions to Promote Pro-environmental Behavior (ELO 1, 2, 3)

Elective Courses in Department of Agricultural Communication, Education, and Leadership

Agricultural Communication 2130: Visual Media in Agriculture and Natural Resources (ELO 2, 3)

Agricultural Communication 4130: Publication Design and Production (ELO 2, 3)

Agricultural Communication 4530: Communicating Agricultural Issues (ELO 2, 3)

Agricultural Communication 5535: Data Visualization and Scientific Storytelling (ELO 2, 3)

Other Elective Courses

Comparative Studies 2104: Literature, Science, and Technology (ELO 1, 3)

Comparative Studies 2340: Introduction to Cultures of Science and Technology (ELO 2, 3)

Comparative Studies 2341: Technology, Science and Society (ELO 2, 3)

Comparative Studies 3646: Cultures, Natures, Technologies (ELO 2, 3)

Agricultural, Environmental, and Development Economics 3102: Principles of Agribusiness Marketing (ELO 2, 3)

Pharmacy 3410 – Science Communication & Engagement (ELO 2,3)⁶

Pharmacy 5410 – Understanding and Changing Vaccine Hesitancy Perspectives (ELO 2,3)

City & Regional Planning 3550: Environmental Planning and Policy for a Sustainable Future (ELO 2,3)

Evolution, Ecology, and Organismal Biology 5610: Translating Evolution (ELO 2,3)

Public Affairs/Environmental Engineering 5600: Science, Engineering and Public Policy (ELO 2,3)

Public Affairs 5770: Risk & Decision Analysis in Public Affairs (ELO 2, 3)

⁶ limited to PHR BSPS students only

Biomedical Education and Anatomy 5881: Sustainable Health Care in the Current Climate Crisis (ELO 2,3)

Approved Elective in Student's Major: To maximize flexibility and recognize the wide-range of relevant science and sustainability focused coursework at Ohio State University, students may petition to have one course from within their major count toward fulfilling the elective coursework for the certificate program. Course content must meet one or more of the certificate ELOs as determined by the School of Communication. The petition would be reviewed by the administering unit (School of Communication).

New Elective Development

The School of Communication is open to new discipline-specific science or environmental communication, informal education, outreach, and /or interpretation courses that meet one or more of the certificate ELOs and may be considered for inclusion as an elective offering within the certificate program.

Enrollment

This proposed curriculum program is an undergraduate academic certificate program that falls under Type 1a (embedded certificate for degree seeking undergraduates who are currently enrolled at Ohio State University). As the program develops, an assessment of whether the certificate program can also be offered as a Type 2 (stand-alone certificate for post-bachelor degree students) will be conducted.

Student Demand: Student interest in the certificate will likely be especially high in SENR and the College of Food, Agricultural, and Environmental Sciences. In addition, students in the natural and physical sciences, engineering, and public policy with an interest in science communication will also be attracted to this certificate program.

The certificate program will also draw significant interest from CFAES majors who are interested in science communication with electives available from their college as well as students from the John Glenn College of Public Affairs who are minoring in Science, Engineering and Public Policy as the elective course Public Affairs/Environmental Engineering 5600 is also a required course for that minor.

The broad range of electives and the ability to petition for a course from one's own major to be considered for the elective requirement also increases the attractiveness of the certificate program to students in other natural and physical science programs and units such as EEOB and pharmacy. The School of Communication estimates that it can accommodate up to an additional 50 students (150 credit hours) annually enrolled in the required and elective communication courses a year with current staffing levels.

Completion Process: Completion of the certificate program will be managed by the School of Communication Advising Office. Upon successful completion of the required and elective courses with in-academy GPA of 2.0 and a total minimum of 12 credit hours, students must submit the completion form to the School of Communication advising office. This begins the process for generating their certificate and formally recognizing their work with the University Registrar. See Appendix C for a full copy of the completion form.

Certificate Promotion: Promotion of the certificate will occur through multiple communication channels including:

- An electronic brochure distributed to advising offices and directors of undergraduate education in targeted departments and units.
- Collaboration with the Sustainability Institute to promote the certificate program as an interdisciplinary component of sustainability education at OSU

- Collaboration with faculty in targeted units (e.g. SENR, CFAES) to make in-class announcements about availability of certificate program in targeted introductory classes.
- In-person information sessions on certificate program held at the beginning of each semester for interested undergraduate students conducted by SOC staff and faculty.

Evaluation

Several metrics will assess the certificate program. The first is the enrollment into the certificate program courses and the completion rate over time. The second metric is student performance within the program across both required and elective coursework. In addition, as the program is highly interdisciplinary and will draw a diverse range of students across different majors, we will assess the academic performance within the certificate program by major to see if any adjustments to the curriculum are necessary to ensure that each expected learning outcome is met by the coursework. Lastly, we will administer a customized online evaluation survey to students completing the certificate to assess their experience, whether the program is meeting its stated learning objectives, and students' plans for using knowledge obtained from the program.

(SAMPLE CERTIFICATE COMPLETION SHEET)

COLLEGE OF ARTS AND SCIENCES (DEI)

Science and Environmental Communication (SEC) CERTIFICATE

STUDENT NAME:

STUDENT OSU EMAIL:

CERTIFICATE ADVISOR NAME:

REQUIRED CORE COURSES (6 HOURS)

Course (Hours)	Course Grade	Term Completed
COMM 2596 (3)		
Choose 1 of the following: COMM 3340 (3) COMM 4240 (3)		

ELECTIVE COURSES (6 HOURS MINIMUM)

In addition, students will select two or more courses (**6 credits minimum**) from the approved electives (see advising sheet).

Course (Hours)	Course Grade	Term Completed

SUBSTITUTIONS

APPROVED:

CERTIFICATE ADVISOR SIGNATURE

DATE _____

The Ohio State University
College of Arts and Sciences

Science and Environmental Communication Certificate Program (SEC-CP)

School of Communication
3033 Derby Hall, 154 North Oval Mall
Columbus, OH 43210-1339
614-292-8444; <http://www.comm.osu.edu>

The certificate program educates students on the theory and practice of communicating about scientific, environmental, and/or sustainability topics and issues, provides an opportunity for developing lifelong professional communication skills, and highlights the interdisciplinary social-behavioral, educational, and psychological dimensions of science and environmental communication.

The Science and Environmental Certificate Program requires the completion of at least four courses for 12 credits, including two foundational courses. To declare the certificate program, students should meet with their assigned academic advisor or any advisor in the School of Communication. Any variation from the program described below needs the approval of the Director of Undergraduate Studies. Students may request approval of a certificate variation by filing a petition through the School of Communication Advising Office.

Required foundational courses (6 credit hours)

COMM 2596: An Introduction to Health, Environment, Risk, & Science Communication (3)

One of following two courses:

COMM 4240(H): Science Communication (3)
COMM 3340: Principles of Environmental Campaigns (3)

Choose at least two from these electives (6 credit hours)

COMM 2131: Business & Professional Speaking (3)
COMM 2511: Visual Communication Design (3)
COMM 3325: Intro to Organizational Communication (3)
COMM 3330: Communication & Conflict Management (3)
COMM 3332: Risk Communication (3)
COMM 3333: Crisis Communication (3)
COMM 3340: Principles of Environmental Campaigns (3)
(if not selected above)
COMM 3628: Contemporary Persuasion Theory (3)
COMM 4240(H): Science Communication (3)
(if not selected above)

Choose at least two from these electives (6 credit hours) continued

ENR 2367: Communicating Environmental and Natural Resources Information (3)
ENR 3400: Psychology of Environmental Problems (3)
ENR 3611: Foundations for Environmental Communications, Education and Interpretation (3)
ENR 4611: Environmental Interpretation and Visitor Services (3)
ENR 5400: Interventions to Promote Pro-environmental Behavior (3)
AGCOMM 2130: Visual Media in Agriculture and Natural Resources (3)
AGCOMM 4130: Publication Design and Production (3)
AGCOMM 4530: Communicating Agricultural Issues (3)
AGCOMM 5535: Data Visualization and Scientific Storytelling in FAES (3)
COMPSTD 2104(H) – Literature, Science, and Technology (3)
AEDECON 3102: Principles of Agribusiness Marketing (3)
PHR 3410 – Science Communication & Engagement (3)
CRPLAN 3550: Environmental Planning and Policy for a Sustainable Future (3)
EEOB 5610: Translating Evolution (3)
PUBAFRS / ENVENG 5600: Science, Engineering and Public Policy (3)
BIOETHC 5881: Sustainable Health Care in the Current Climate Crisis (3)

Approved Elective in Student's Major: To maximize flexibility and recognize the wide-range of relevant science and sustainability focused coursework at Ohio State University, students may petition to have one course from within their major count toward fulfilling the elective coursework for the certificate program. Course content must meet one or more of the certificate ELOs as determined by the School of Communication. The petition would be reviewed by the administering unit (School of Communication).

*the Honors (H) version of any of the above courses can be used to meet the requirements for the certificate program

Science and Environmental Communication certificate program guidelines

Required for graduation: No

Credit hours required: A minimum of 12.

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 the GE: A student is permitted to overlap up to 6 credit hours between the GE and the certificate program.

Overlap with the major and additional minor(s)

- A student is permitted to overlap up to 6 credit hours between their major and the certificate program.
- A student is permitted to overlap up to 6 credit hours between their minor and the certificate program.

Grades required

- Minimum C- for a course to be listed on the certificate.
- Minimum 2.00 cumulative point-hour ratio required for the certificate.
- Course work graded Pass/Non-Pass cannot count on the certificate.
- No more than 3 credit hours of course graded Satisfactory/Unsatisfactory may count toward the certificate program.

Certificate approval: The certificate may be approved by the student's assigned academic advisor via the Degree Audit Report (DAR). If the certificate is not complete on the DAR, the student must consult with a School of Communication advisor.

Filing the certificate program form: The certificate form must be filed at least by the time the graduation application is submitted to a college/school counselor.

Changing the certificate: Once the certificate program is filed in the college office, any changes must be approved by the School of Communication Advising Office.

Science and Environmental Communication Certificate Completion Plan

(general plan for any major)

Created 11/2019



Sample Completion Plan

Year 1 or Year 2
Autumn or Spring

Communication 2596	3
# of Credits	3

Year 2 or 3
Autumn or Spring

Communication 3340 or 4240	3
<i>Elective Offering</i>	3
# of Credits	6

Year 3 or 4
Autumn or Spring

<i>Elective Offering</i>	3
# of Credits	3

Required Courses *Elective Courses*



Science and Environmental Communication Certificate

(general plan for any major)

The certificate program educates students on the theory and practice of communicating about scientific, environmental, and/or sustainability topics and issues, provides an opportunity for developing lifelong professional communication skills, and highlights the interdisciplinary social-behavioral, educational, and psychological dimensions of science and environmental communication.

The Science and Environmental Certificate Program requires the completion of at least four courses for 12 credits, including two foundational courses. To declare the certificate program, students should meet with their assigned academic advisor or any advisor in the School of Communication. Any variation from the program described below needs the approval of the Director of Undergraduate Studies. Students may request approval of a certificate variation by filing a petition through the School of Communication Advising Office.

Required foundational courses (6 credit hours)

COMM 2596: An Introduction to Health, Environment, Risk, & Science Communication (3)

One of following two courses:

COMM 4240(H): Science Communication (3)

COMM 3340: Principles of Environmental Campaigns (3)

Choose at least two from these electives (6 credit hours)

COMM 2131: Business & Professional Speaking (3) COMM 2511: Visual Communication Design (3)

COMM 3325: Intr. to Org Communication (3)

COMM 3330: Communication and Conflict Management (3)

COMM 3332: Risk Communication (3)

COMM 3333: Crisis Communication (3)

COMM 3340: Principles of Environmental Campaigns (3) (if not selected above)

COMM 3638: Contemporary Persuasion Theory (3)

COMM 4240(H): Science Communication (3)

(if not selected above for required class)

Choose at least two from these electives (6 credit hours) continued

ENR 2367: Communicating Environmental and Natural Resources Information (3)

ENR 3400: Psychology of Environmental Problems (3)

ENR 3611: Foundations for Environmental Communications, Education and Interpretation (3)

ENR 4611: Environmental Interpretation and Visitor Services (3)

ENR 5400: Interventions to Promote Pro-environmental Behavior (3)

AGCOMM 2130: Visual Media in Agriculture and Natural Resources (3)

AGCOMM 4130: Publication Design and Production (3)

AGCOMM 4530: Communicating Agricultural Issues (3)

AGCOMM 5535: Data Visualization and Scientific Storytelling (3)

COMPSTD 2104: Literature, Science, and Technology (3)

COMPSTD 2340: Introduction to Cultures of Science and Technology (3)

COMPSTD 2341 Technology, Science and Society: (3)

COMPSTD 3646: Cultures, Natures, Technologies

AEDECON 3102: Principles of Agribusiness Marketing (3)

PHR 3410: Science Communication & Engagement (3)**

PHR 5410: Understanding and Changing Vaccine Hesitancy Perspectives (3)



THE OHIO STATE UNIVERSITY

COLLEGE OF ARTS AND SCIENCES

SCHOOL OF COMMUNICATION

CRPLAN 3550: Environmental Planning and Policy for a Sustainable Future (3)

EEOB 5610: Translating Evolution (3)

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

PUBAFRS 5770: Risk & Decision Analysis in Public Affairs (3)

BIOETHC 5881: Sustainable Health Care in the Current Climate Crisis (3)

Approved Elective in Student's Major: To maximize flexibility and recognize the wide-range of relevant science and sustainability focused coursework at Ohio State University, students may petition to have one course from within their major count toward fulfilling the elective coursework for the certificate program. Course content must meet one or more of the certificate ELOs as determined by the School of Communication. The petition would be reviewed by the administering unit (School of Communication).

*the Honors (H) version of any of the above courses can be used to meet the requirements for the certificate program

** limited to PHR BSPS students only

Plan may vary depending on course offerings, placement test scores, any credit previously earned, individual student scheduling, major specialization selected, and major. Students are encouraged to meet with their advisor at least once per semester to discuss scheduling and ensure they are on the track they hope to be on for completing their certificate.



THE OHIO STATE UNIVERSITY

COLLEGE OF ARTS AND SCIENCES

SCHOOL OF COMMUNICATION

Smith, Aaron

From: Nisbet, Erik
Sent: Friday, November 1, 2019 10:47 AM
To: Kline, Susan; Smith, Aaron
Subject: Fw: Science Communication Student Projects

See this email below from Haab - he notes in first line that he full supports the concurrence request for the certificate - is that sufficient?

thanks

erik

Erik Nisbet, PhD Associate Professor
School of Communication, Department of Political Science (by courtesy), & Environmental Policy and Decision Making (by courtesy)
Co-Director, Eurasian Security & Governance Program (www.eurasianprogram.org)
Mershon Center for International Security Studies
Affiliate Faculty, OSU Sustainability Institute
Faculty Fellow, USC Center on Public Diplomacy
3062 Derby Hall | 154 North Oval Mall Columbus, OH 43210-1234
Mobile: 607-280-7030
Email: nisbet.5@osu.edu

From: Haab, Timothy <haab.1@osu.edu>
Sent: Tuesday, October 15, 2019 3:51 PM
To: Nisbet, Erik <nisbet.5@osu.edu>
Subject: Science Communication Student Projects

Erik,

Not sure if you are the right contact for this, but I just received a concurrence request for the Science and Environmental Communications Certificate (which I fully support) and it reminded me of a question I had for you.

I've recently taken the helm of a new CFAES initiative called the Knowledge Exchange (KX). The KX is a new effort from the college to better integrate our research and extension missions. In short, the KX is designed to support research-based, data-driven, science communication (basically a unit to translate the academic research around Food, Ag, and Environmental Sciences for extension educators and outside audiences).

Anyway, a question my team has had is whether you (meaning the School of Communications) have a need for student-based projects or possibly internships around science communications. Our thinking is that this would be an opportunity for students to get hands on experience working with researchers and extension educators to develop practical science communications products for broader impact. We envision a wide array of science-based communications products from written stories to interactive infographics to videos, webinars, music, VR experiences, art, podcasts,...

If this is something that might be of interest/use, I'd be glad to put you in touch with our team for a more detailed discussion of what we have in mind.

Hope all is well,

Tim Haab



Tim Haab, PhD

Professor and Chair, **CFAES** Department of Agricultural, Environmental, and Development Economics
Director, **CFAES** Knowledge Exchange
Dean's Chair for Transformative Initiatives

250P Agricultural Administration Bldg, 2120 Fyffe Rd., Columbus, OH 43210
614-292-6237 Office / 614-354-3386 Mobile
haab.1@osu.edu / osu.edu

Smith, Aaron

From: Specht, Annie
Sent: Monday, October 28, 2019 4:02 PM
To: Smith, Aaron
Subject: Re: Sci&Env Comm Certificate Program_ACEL

Hi, Aaron,

Thank you for your patience. The AGRCOMM faculty support the proposed certificate. Let me know if you require any additional documentation.

Best,
Annie

Annie R. Specht, PhD

Assistant Professor
Undergraduate Program Coordinator, Agricultural Communication
College of Food, Agricultural, and Environmental Sciences
Department of Agricultural Communication, Education, and Leadership

200L Agricultural Administration Building,
2120 Fyffe Rd, Columbus, OH 43210

From: Smith, Aaron <smith.1543@osu.edu>
Sent: Monday, October 28, 2019 3:53 PM
To: Specht, Annie
Subject: FW: Sci&Env Comm Certificate Program_ACEL

Dr. Specht,

Just wanted to check in on this request regarding the new Certificate Proposal in Science and Environmental Communication.

Please let us know if you have any questions.

Thank you,



Aaron Smith Assistant to the Director

School of Communication

3016 Derby Hall | 154 N. Oval Mall Columbus, OH 43210

614-292-0451 Office | 614-292-2055 Fax

smith.1543@osu.edu

From: Smith, Aaron

Sent: Tuesday, October 15, 2019 1:26 PM

To: Specht, Annie <specht.21@osu.edu>

Cc: Slater, Michael <slater.59@osu.edu>; Kline, Susan <kline.48@osu.edu>; Nisbet, Erik <nisbet.5@osu.edu>

Subject: Sci&Env Comm Certificate Program_ACEL

Dr. Specht,

Please find attached a letter from Dr. Michael Slater, Director of the School of Communication, with a request for support for a new Certificate Proposal in Science and Environmental Communication.

Please let us know if you have any questions or feedback. It would be helpful if you could please respond by Tuesday October 29th.

Thank you for your potential support and participation in this initiative,



Aaron Smith Assistant to the Director

School of Communication

3016 Derby Hall | 154 N. Oval Mall Columbus, OH 43210

614-292-0451 Office | 614-292-2055 Fax

smith.1543@osu.edu

Smith, Aaron

From: Brooks, Jeremy S.
Sent: Friday, November 1, 2019 12:26 PM
To: Smith, Aaron
Subject: Re: Sci&Env Comm Certificate Program_SENR

Hi Aaron,

I just wanted to follow up to formally offer concurrence for the certificate program - with two pieces of feedback.

1. ENR 4611 is listed twice. The second listing for ENR 4611 (for Interventions to Promote Pro-Environmental Behavior) should be ENR 5400.

2. There was some question about whether packaging "environmental" and "sustainability" comm with science comm will serve students in the ways intended. One faculty member suggested that it makes sense that knowledge about science comm would serve as a backbone for domain-specific types of science comm, but it seems like the proposed certificate is aiming to cover a fair bit of heterogeneous student/learning outcomes. In other words, this faculty member thinks that a science comm certificate would make sense, and sustainability/environmental comm certificate (with some required coursework in more basic science comm) could also make sense, but was not sure how all these topics would work together as a cohesive bundle - especially given the small number of courses required to earn the certificate.

Thank you,

- Jeremy

On Oct 28, 2019, at 3:58 PM, Brooks, Jeremy S. <brooks.719@osu.edu> wrote:

Hi Aaron,

Our Academic Affairs Committee just reviewed it today. I'm just waiting for some additional feedback from two more faculty members, but I don't suspect there will be any issues. The one thing I did note is that the course number is wrong for one of the proposed courses. Interventions to Promote Pro-Environmental Behavior should be ENR 5400.

best

Jeremy

On Oct 28, 2019, at 3:52 PM, Smith, Aaron <smith.1543@osu.edu> wrote:

Dr. Brooks,

Just wanted to check in on this request regarding the new Certificate Proposal in Science and Environmental Communication.

Please let us know if you have any questions.

Thank you,

<image001.png>

Aaron Smith Assistant to the Director

School of Communication

3016 Derby Hall | 154 N. Oval Mall Columbus, OH 43210

614-292-0451 Office | 614-292-2055 Fax

smith.1543@osu.edu

From: Smith, Aaron

Sent: Tuesday, October 15, 2019 1:36 PM

To: Brooks, Jeremy S. <brooks.719@osu.edu>

Cc: Slater, Michael <slater.59@osu.edu>; Kline, Susan <kline.48@osu.edu>; Nisbet, Erik <nisbet.5@osu.edu>

Subject: Sci&Env Comm Certificate Program_SENR

Dr. Brooks,

Please find attached a letter from Dr. Michael Slater, Director of the School of Communication, with a request for support for a new Certificate Proposal in Science and Environmental Communication.

Please let us know if you have any questions or feedback. It would be helpful if you could please respond by Tuesday October 29th.

Thank you for your potential support and participation in this initiative,

<image001.png>

Aaron Smith Assistant to the Director

School of Communication

3016 Derby Hall | 154 N. Oval Mall Columbus, OH 43210

614-292-0451 Office | 614-292-2055 Fax

smith.1543@osu.edu

<science_and_environmental_communication_certificate_program.pdf><COMM
SECCP_SENR_Brooks.pdf>

Smith, Aaron

From: Brown, Trevor
Sent: Friday, October 18, 2019 7:07 PM
To: Smith, Aaron
Cc: Slater, Michael; Kline, Susan; Nisbet, Erik; Greenbaum, Robert
Subject: RE: Sci&Env Comm Certificate Program_JGSPA

Hi Aaron and Dr. Slater,

The Glenn College is happy to support the proposed new Certificate in Science and Environmental Communication.

We have one course suggestion to recommend:

PUBAFRS 5770: Risk & Decision Analysis in Public Affairs

We have a syllabus under an old course number at <http://glenn.osu.edu/syllabi/syllabi-attributes/5881%20Risk%20Analysis%20Dormady%20and%20Morgan%20SP16.pdf>

Sincerely,

Trevor Brown

From: Smith, Aaron <smith.1543@osu.edu>
Sent: Tuesday, October 15, 2019 1:26 PM
To: Brown, Trevor <brown.2296@osu.edu>
Cc: Slater, Michael <slater.59@osu.edu>; Kline, Susan <kline.48@osu.edu>; Nisbet, Erik <nisbet.5@osu.edu>
Subject: Sci&Env Comm Certificate Program_JGSPA

Dean Brown,

Please find attached a letter from Dr. Michael Slater, Director of the School of Communication, with a request for support for a new Certificate Proposal in Science and Environmental Communication.

Please let us know if you have any questions or feedback. It would be helpful if you could you please respond by Tuesday October 29th.

Thank you for your potential support and participation in this initiative,



Aaron Smith Assistant to the Director
School of Communication
3016 Derby Hall | 154 N. Oval Mall Columbus, OH 43210
614-292-0451 Office | 614-292-2055 Fax
smith.1543@osu.edu



THE OHIO STATE UNIVERSITY

College of Medicine

Department of Biomedical Education and Anatomy

260 Meiling Hall
Columbus, OH 43210

614-688-3104 Office
614-292-4499 Fax

Medicine.osu.edu

October 17, 2019

Michael D. Slater, Ph.D.
Director, School of Communication
The Ohio State University
3022 Derby Hall, 154 North Oval Mall
Columbus, OH 43210

Dear Dr. Slater:

I have reviewed and fully support the proposed interdisciplinary certificate program in Science and Environmental Communication.

The Department of Biomedical Education and Anatomy approves the course, Biomedical Education and Anatomy 5881: Sustainable Health Care in the Current Climate Crisis, be included as an elective for the proposed certificate program. This course is taught once per year in spring semester.

Please do not hesitate to contact me if I can provide further information.

Sincerely,

Daniel M. Clinchot, M.D.
Chair, Department of Biomedical Education and Anatomy
Vice Dean for Education
Associate Vice President for Health Sciences Education
Professor of Physical Medicine and Rehabilitation

DMC:sl

Smith, Aaron

From: Shank, Barry
Sent: Wednesday, October 16, 2019 1:45 PM
To: Nisbet, Erik; Smith, Aaron
Cc: Slater, Michael; Kline, Susan; Horn, David
Subject: Re: Sci&Env Comm Certificate Program_CS

Dear Erik,

Thanks for your prompt response. The department appreciates your adding our courses. I certainly understand the difficulty of effectively searching through all of the university's offerings to find relevant courses.

I still need to note a few things. First, I'm sure you know that the fact that an OAA report says something does not make it true. In addition to our minor, we offer our concentration (mentioned in my first email), which is part of our major. The concentration has been in existence for decades and not only allows but encourages our undergraduates to take courses outside our department. In fact, if you look here:

<https://comparativestudies.osu.edu/undergrad/comparative-studies/about-science-and-technology/requirements> you'll see the list of possible electives includes courses from your department among other offerings from across the university.

Finally, there is an interdisciplinary group of faculty interested in Science and Technology Studies that has been operating for a number of years, most recently with Discovery Theme funding.

Given the breadth of interest in this area—among faculty and students, it is smart that concentrations are being developed. This one focusing on Environmental Communication, is a good step. We offer our support.

Yours,
Barry

From: "Nisbet, Erik" <nisbet.5@osu.edu>
Date: Tuesday, October 15, 2019 at 4:38 PM
To: "Shank, Barry" <shank.46@osu.edu>, "Smith, Aaron" <smith.1543@osu.edu>
Cc: "Slater, Michael" <slater.59@osu.edu>, "Kline, Susan" <kline.48@osu.edu>, "Horn, David" <horn.5@osu.edu>
Subject: Re: Sci&Env Comm Certificate Program_CS

Hi Barry

Thank you for your email and feedback. First, thank you for bringing those courses to our attention. In developing our initial roster we searched the OSU course listings plus department websites - I am sorry those courses did not come up our search but OSU is unfortunately so large and compartmentalized that it can be difficult sometimes to cover all the bases. Those additional courses you reference would be excellent additions as electives to the certificate and thank you for bringing them to our attention. I myself have a background in Science & Technology Studies as they were our sister program at Cornell University and appreciate very much the importance of the field.

In terms of our discussion of interdisciplinary weakness, we are actually quoting/referring to the official OAA report on Sustainability Education at OSU that was released earlier this year that highlighted the great need for more interdisciplinary/cross-disciplinary programs in this area at OSU. Though units such as Comparative Studies offers a minor like Science & Technology Studies there is lack of interdisciplinary programs that cut across across departments and colleges.

We ourselves offer a minor in Health, Environmental, Risk, and Science Communication for example. The major difference between the certificate from our minor is the opportunity for students to combine courses across units, fields, contexts, disciplines, and epistemological/ontological perspectives that they would not otherwise have access to by taking a minor within one field or unit. In our estimation, this breadth, as opposed to the depth of a minor, will be attractive to a large number of students. I think the four courses you highlight would be very attractive to students from SENR and CFAES as part of the certificate electives for example.

I hope this answers your questions - please let us know if you have any other feedback , comments or concerns, and with your permission, we look forward to including all those four classes you specify in the proposal. Thank you!

Sincerely,

Erik

Erik Nisbet, PhD Associate Professor
School of Communication, Department of Political Science (by courtesy), & Environmental Policy and Decision Making (by courtesy)
Co-Director, Eurasian Security & Governance Program (www.eurasianprogram.org)
Mershon Center for International Security Studies
Affiliate Faculty, OSU Sustainability Institute
Faculty Fellow, USC Center on Public Diplomacy
3062 Derby Hall | 154 North Oval Mall Columbus, OH 43210-1234
Mobile: 607-280-7030
Email: nisbet.5@osu.edu

From: Shank, Barry <shank.46@osu.edu>

Sent: Tuesday, October 15, 2019 3:30 PM

To: Smith, Aaron <smith.1543@osu.edu>

Cc: Slater, Michael <slater.59@osu.edu>; Kline, Susan <kline.48@osu.edu>; Nisbet, Erik <nisbet.5@osu.edu>; Horn, David <horn.5@osu.edu>

Subject: Re: Sci&Env Comm Certificate Program_CS

Hi,

I just started reading the proposal and came across this phrase: “a core weakness at OSU is a lack of interdisciplinary programs that integrate science, environmental, and sustainability fields with social sciences and humanities - such as science and technology studies (STS) or environmental humanities programs.”

I have to point out that the Department of Comparative Studies offers a concentration in Science and Technology Studies. Courses central to that portion of our curriculum, such as CS 2340 Introduction to Cultures of Science and Technology, CS 2341 Technology, Science and Society, and CS 3646 Cultures, Natures, Technologies, do not appear in the course offerings included in this proposal. (CS 2104 Literature, Science, and Technology does appear.)

I would like you to consider adding these courses to your proposal. A bit of explanation about the “weakness” comment would be appreciated as well.

Yours,
Barry

From: "Smith, Aaron" <smith.1543@osu.edu>

Date: Tuesday, October 15, 2019 at 1:26 PM

To: "Shank, Barry" <shank.46@osu.edu>

Cc: "Slater, Michael" <slater.59@osu.edu>, "Kline, Susan" <kline.48@osu.edu>, "Nisbet, Erik" <nisbet.5@osu.edu>

Subject: Sci&Env Comm Certificate Program_CS

Dr. Shank,

Please find attached a letter from Dr. Michael Slater, Director of the School of Communication, with a request for support for a new Certificate Proposal in Science and Environmental Communication.

Please let us know if you have any questions or feedback. It would be helpful if you could you please respond by Tuesday October 29th.

Thank you for your potential support and participation in this initiative,



Aaron Smith Assistant to the Director

School of Communication

3016 Derby Hall | 154 N. Oval Mall Columbus, OH 43210

614-292-0451 Office | 614-292-2055 Fax

smith.1543@osu.edu



THE OHIO STATE UNIVERSITY

Ian M. Hamilton, Ph.D

Department of Evolution, Ecology and Organismal Biology

300 Aronoff Laboratory

318 W. 12th Ave.

Columbus, OH 43210

614-292-1547 Phone

614-292-2030 Fax

eeob.osu.edu

October 29, 2019

Michael D. Slater
Director
Ohio State School of Communication

Dear Dr. Slater,

We are pleased to offer the Department of Evolution, Ecology and Organismal Biology's support for the proposed certificate in Science and Environmental Communication, administered by the School of Communication. In addition, we give permission for EEOB 5610, Translating Evolution to be included as an elective for this certificate. EEOB 5610 is planned to be offered every 2 years, in odd-numbered Spring Semesters.

Please feel free to contact me if you have any questions or would like any additional information about EEOB 5610.

Sincerely,

Dr. Ian M Hamilton
Professor & Vice Chair of Undergraduate Studies
Department of Evolution, Ecology and Organismal Biology
Department of Mathematics
The Ohio State University



November 1, 2019

Michael D. Slater
Director
Ohio State School of Communication
Social and Behavioral Sciences Distinguished Professor

Dear Director Slater;

My apologies for my late response to your request for support for the interdisciplinary certificate program in Science and Environmental Communication administered by the School of Communication in the College of Arts & Sciences. You have the support of the Knowlton School to include the following course as electives: City & Regional Planning 3550: Environmental Planning and Policy for a Sustainable Future. This course is presently scheduled to be offered once every year in the spring semester.

I also offer that there are many courses in the school that may be appropriate to your certificate program. Let me know if you would to discuss these opportunities further.

Sincerely,

Michael B. Cadwell
Walter H. Kidd Professor
Director Knowlton School