UMEÅ UNIVERSITY

Communicating Scientific Research
Kommunicera vetenskaplig forskning

Credits: 3 ECTS credits
Course code: 5DN007
Established: 2018-01-16
Established by: Committee for doctoral studies
Syllabus valid from: 2018-01-16
Responsible Department: Department of Ecology and Environmental Science
Main field of study: General science
Grading system: G pass, U Fail
Level of Education: Doctoral course

1. Requirements
Admitted doctoral students.

2. Learning Outcomes
After completing the course, students shall be able to:

Knowledge and understanding
- Describe basic theories and principles of rhetoric, interpersonal communication, and different ways to communicate effectively in written, spoken, and other forms.
- Describe how science is valued in society in a variety of cultural, economic, political, and social contexts. Understand what each of these potential audiences expect from the scientists and the institutions they represent.
- Explain how science is evaluated as “evidence” in the decision-making processes in various institutional settings, e.g. business and policy.

Competence and skills
- Develop the tools to put individual research into a broader context for various audiences, including the classroom teaching environment (undergraduate and graduate), public engagement, industry, and policy.
- Demonstrate creative ability to communicate in ways that audiences will pay attention to, understand, remember and act on.
- Possess communication skills for the oral and written presentation of scientific arguments to an informed audience, the general public, business leaders, policy makers, media outlets and through the use of social media.

Judgement and approach
- Discuss the purposes of science communication in society.
- Discuss factors that influence the context of how (popularized) science communication can be carried out, particularly the role of prior knowledge, experience, attitudes and beliefs.
- Evaluate how cognitive bias influences how science is perceived and valued.

- Critically reflect upon the challenges by different contexts and audiences in relation to the communication of science.

3. Contents

Course Description

In an increasingly linked and networked world, scientists need to be effective communicators to many different audiences, from grant agencies to scientific peers, public audiences and the media. To communicate science well does not always come naturally, but just like other aspects of scientific work, science communication is a skill that can be learnt and developed. In this PhD level course students will learn about the common skills that all effective science communicators have: identifying and characterizing the target audience, distilling the relevant information to be communicated, effective ways to deliver and receive information, and the variety of techniques and media by which scientific information is communicated.

Course Content

The course will be hosted by scientists and will have additional contributions from several experts on communication. The five-day course will cover the following topics:

1. Elevator talks – how to distil information down to the essential points.
2. Analysing and preparing for communication – how to identify your audience and their knowledge base, and what methods and technology are available for communication.
3. Presenting a confident you – how to talk with confidence, having a confident composure during communication.
4. The media ecosystem – how people encounter science in their everyday lives (radio, TV, newspapers, blogs, podcasts, social media, websites).
5. How does one become a public science communicator?
6. Creating content to communicate your science

The nature of this subject will require active participation, interaction and creativity. Students will be required to communicate with different groups of people in different contexts during the course to practice and develop these skills. The activities that participants will undertake include:

- Creating an ‘elevator talk’ about your own research
- How to write for different audiences
- Scientific story telling
- Creating a short video about your work
- Story boarding

In addition to these group activities, students will be given 1.5 hours every day to develop their own research/science communication webpage.

4. Instructions

This is an intensive one-week. Each day (08.00 to 17.00) will consist of short introductions to the course topics, followed by hands-on exercises with instructors, guest media consultants, and in small groups. Guest communications experts will provide daily sessions with students. At the end of each day, we will summarize the day's activities, and present a summary of the next day's activities, including homework.
Practical exercises will occur in small groups, e.g. one-on-one between two students with instruction, guidance and support from course leaders. Students will critic each other's communications efforts, e.g. elevator talk, switch roles and then form new one-on-one groups. Students will be encouraged to make videos of their efforts for personal evaluation. After small group activities, students will then present their communication effort to the larger group for feedback.
The first day students will be introduced to the student projects where they will choose a project and then work on it during a focal period each day with access to course leaders for instruction, feedback and support. Project work is also expected to occur outside the course hours as daily homework throughout the course. Students will briefly meet course leaders daily to evaluate progress and get feedback on individual projects.
The final day of the course will consist of students presenting their projects to the group where each student is expected to provide feedback to the other students. Project presentations will be videotaped for students and provided as feedback with their final evaluation at the end of the course.

5. Examination

The grade will be determined by the level of participation and quality in the daily practical activities and the course project. Student participation requires activity developing communication tools and providing critical feedback to other students throughout the course.

6. Other Directives

Academic credit transfers are always reviewed individually according to the University's set of rules and academic credit transfer regulations.

7. Course Literature

- Nancy Baron 2010. Escape from the ivory tower: a guide to making your science matter. Island Press, Washington, D.C.

All other course material will be available online through the course's Cambro website, or given out during the course.

There is a lot of practical, hands-on work during the course such as creating a website and making a video. You will need internet connectivity (via the

university's wifi network or Eduroam), a laptop, something to record video on (e.g. laptop, smart phones, tablet computer, and digital cameras with a video function) and you will need to know how to transfer your video to a common computer.