

SOCIETY –ENVIRONMENT - TECHNOLOGY

Course description form

2012/2013

1. **Course title:** Research Communication
2. **University unit:** Institute of Environmental Sciences
3. **Course code:** Not applicable
4. **Course language:** English
5. **Contents group:** Not applicable
6. **Course type:** compulsory
7. **Year of study, semester:** 2nd year, summer semester
8. **Name of co-ordinator:** prof. dr hab. Ryszard Laskowski
9. **Name of examiner:** prof. dr hab. Ryszard Laskowski, dr Marcin Czarnołęski
10. **Type of course:** lectures and workshops
11. **Prerequisites:** the course is intended for PhD students
12. **Number of hours:** lectures – 10, workshops – 20
13. **ECTS:** not applicable
14. **Whether the course is used for weighted average:** not applicable
15. **Objective of the course / expected learning outcomes:**

a) Knowledge

Student knows how to:

- search for scientific information, evaluate sources, select and integrate information;
- write scientific manuscript at the level acceptable in the best international journals;
- prepare scientific grant proposal at the level required by Polish National Science Centre or equivalent granting body;
- evaluate scientific quality of others' research;
- effectively communicate scientific information to the community, using appropriate platforms;
- participate actively in scientific discussions.

b) Skills

Student is able to:

- communicate his/her research to scientific community as oral presentations, posters, and research and review papers;
- prepare a manuscript, submit it to an appropriate high rank scientific journal, and accept criticism from peers in a constructive way;
- participate actively in the peer review system: can assess the quality of research and a manuscript or grant proposal, can communicate his opinion in a polite and constructive manner;
- prepare and submit a research grant proposal, including all necessary elements, such as: scientific background, description of methods, time plan, budget with cost justification, etc.



- communicate science to public through popular lectures and articles, active participation in public discussions, and consultancy.

c) Attitudes

- student understands that science is based on full honesty and transparency, hence when doing research and communicating its results, all details have to be specified in a way that is clear and detailed enough to let others repeat exactly the same study;
- student is ready to accept comments, including criticism, in a constructive way, and understands that this is the best tool to improve his/her scholarly work;
- student understands the need to share his/her research results with general public and the role of this process in the educational and financing systems
- student understands and accepts that an important part of scientific approach is dissemination of her/his research results and exposition of them to falsification tests;
- student perceives other scientists as partners in discussion, even if they represent different fields of science;
- student understands that even strong criticism should be always expressed in a polite and constructive manner.

16. Teaching methods

- lectures introducing topics and teaching theoretical knowledge as specified in p. 15a; lectures include examples of effective library and data-base queries, well prepared and faulty scientific reports, papers, grant proposals, polite and constructive vs. impolite and unconstructive reviews, etc.; lectures explain the basis of communication rules and methods that increase efficiency of presentation.
- workshops teaching practical skills as specified in p. 15b; workshops include training in grant and paper writing and in grant and paper evaluation methods, preparation of different types of presentations (oral, poster), presentation in front of group of people with video-recording.

17. Evaluation:

- short scientific paper based either on own data or on meta-analysis – 25%
- research proposal – 25%;
- manuscript review – 20%
- multimedia presentation of scientific data to general public and to scientific community in an oral and poster form – 20%
- active participation in discussions (including critical evaluation of other presentations) – 10%;
- attendance of at least 26 hours out of 30.

18A. Full description of the course / course contents

The lectures will familiarize students with the most important issues in preparing research proposals, writing scientific articles, making oral and poster conference presentations, and reviewing others work. Examples of well and purely done work will be presented and discussed



with students to pinpoint most important and common mistakes, and to learn the principles of good writing and presenting the work. During workshops students will learn how to search and evaluate scientific information, and how to communicate science to the public; students will be interviewed about different topics related to their specialties, but also to issues of more general interest.

Each student will submit a short project proposal, a research article, and a review a paper. This will require effective use of the skills, learned in the first part of the course, in information search, its verification, and in summarizing the acquired knowledge. Each student will also give oral presentation which will be followed by discussion, simulating conditions of a typical scientific meeting. This will expose students to possible problems with understanding questions and formulating clear replies. The talks and discussions will be taped and analyzed later by the whole group, under teacher's supervision. Students will also prepare posters, which will be reviewed by teachers and fellow students.

Lectures will be given in 2x45 min blocks,. The number of sessions will depend on the number of participating students. To assure high teaching efficiency, groups should not be larger than 12 students.

Materials for the course will be available on the course web page, and handouts for specific topics will be distributed among students.

18B. Short description of the course (max. 70 words)

Preparing research proposals, writing scientific articles, making oral and poster conference presentations, and reviewing others work. Learning from good and bad examples of published work and anonymous reviews, based on lectures, workshops, and assignments. Information search, its verification, and summarizing. Taking part in discussions. The talks and discussions will be taped and analyzed by the whole group, under teacher's supervision.

19. Recommended reading

(books available in Natural Sciences Library are marked boldface)

Carpenter, K. 2001. How to write a scientific article. The Journal of Paleontological Sciences: JPS.TD.07.0001. (<http://www.aaps-journal.org/submission%20pdf/How%20to%20Write%20a%20Scientific%20Paper.pdf>).

Collier, J. M., Edmondson, S.-J. 2011. How to write a scientific article. Face Mouth & Jaw Surgery, 1: 5-10.

Comfort, J. 1996. Effective presentations: student's book Oxford University Press.

Day, R. A., Gastel, B. 2006. How to write and publish a scientific paper. Cambridge University Press, 320 pp.



Fiedland, A. J., Folt, C. L. 2009. Writing succesful science proposals. Yale University, 201 pp.

Katz., M. J. 2009. From research to manuscript. A guide to scientific writing. Second edition. Springer, 205 pp.

McCarthy, M., O'Dell, F. 2008. Academic vocabulary in use. Cambridge University Press, 176 pp.

Shubrook, J.H., Kase, J., Norris, M. 2010. How to write a scientific article. Osteopathic Family Physician, 2: 148-152.

Stirling, J.W. 2001. Writing articles for scientific journals: A basic guide. Australian Journal of Medical Science, 22: 171-182.

Swales, J. M., Feak, C. B. 2009. Academic writing for graduate students: essential tasks and skills. University of Michigan, 331 pp.

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DVD:

<http://www.bookcity.pl/effective-presentations-dvd/pid/10021>