Welcome

Welcome to Physics 445: The Art of Communication in Physics! Being a physicist today is about more than just being smart and adventurous. Communication of scientific results and ideas is an integral part of scientific achievements, and consumes a large portion of a physicist's time and effort. Modern scientists interact with many people from all walks of life, and it is extremely important to be able to communicate effectively and efficiently.

Whether you have plans for an academic or industrial career, good communication skills are both a requirement, and a way to get ahead. In your future career, most of you will have to write scientific documents from short e-mails to lengthy manuscripts, and make a variety of presentations from a 30-second “elevator pitch” to hour-long talks.

Besides the traditional forms of scientific writing and presentations, you will also learn about career-related forms of scientific communication, such as graduate school and job applications, handling interviews, networking. You will learn the traditions, style, and culture of scientific communication specific to physics and physical sciences. This course will help you build communication skills required of today’s scientists, and acquire very important practical experience that will assist you in your job search and in your work in most physics-related careers. These skills are essential in many fields of science and engineering.

Outcomes: Upon successful completion of the course, you will learn to:

- understand what is expected of a physicist besides the research,
- understand ethical responsibilities of a scientist and follow scientific ethics,
- appreciate the importance of effective communication for one’s success as a scientist,
- identify various forms of communicating physics to non-scientists and understand the difference between them,
- target your communication to your audience,
- distinguish and implement specifics and typical structure of how to communicate physics research results to general public,
- prepare, rehearse and deliver:
  - presentations of physics research for general public,
  - short “elevator-pitch” presentation (useful for job search, networking, and outreach),
- handle questions from non-scientists,
- understand the job application process, and prepare to conduct your own job search,
- understand what is expected and practice writing
  - statement of research interests, statement of purpose, short research proposal.

Catalog Title and Description: (CREDIT 1.0) The Art of Communication in Physics II. – Communicating Science to Non-Scientists. Communication in physics, communicating physics to scientists, scientific presentations; scientific writing; job/grad school application; job interview.

Prerequisites: PHYS-444: The Art of Communication in Physics I – Communicating Science to Scientists Knowledge of oral and written English; junior or senior classification.

Instructor: Dr. Igor V. Roshchin
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Office hours: TBA

Web Page: http://faculty.physics.tamu.edu/roshchin/445
This page will be updated often. It is student’s responsibility to check it often.

Term: Fall 2012

Class times: twice a week (3 hours a week) November 4 – December 3, 2012, Tue., Thur., 5:30–6:45pm.

Required text: None.

Recommended text: See this list: http://www.worldcat.org/profiles/roshchin/lists/1723072

Required Material: Access to a computer with Microsoft Power Point (or other compatible software for presentations), word processor (Microsoft Word (preferred) or compatible, or LaTeX with REVTeX 4.1). General working familiarity with this software will be beneficial.

Homework: You will be expected to complete a variety of homework assignments: writing, editing, peer reviewing, and preparing presentations.

Written assignments: You will be expected to complete several written assignments of different type and length, totaling over 2000 words. You will be expected to edit your work based on the critique by the instructor peer-reviewers. You will be expected to review the work of your peers. Unless specified otherwise, the written assignments will be submitted using Turnitin2.

Oral assignments: Several in-class presentations of different length.

Final assignment: The final assignment will be conducted in a form of a final presentation and a take-home written assignment.

Final presentation: Thursday, Tuesday, December 3, 5:30-10pm. Place: MPHYS-107 (regular classroom)

Late assignments: As a rule, late assignments will not be accepted except in the case of University excused absences.

Classes: Classes will be conducted in a highly interactive form. They will require your active participation through presenting your homework assignments and through your involvement in class discussions. The work of the class participants (presentations and/or written assignments) will be analyzed in class by the instructor and all students in class. Some class activities will be photo-/video- (and audio-) recorded. By participating in this class you give your consent for these recordings to be used in and outside the class, published, shown to other people.

Class participation: This is a very important part of the course.
(a) Hence it is crucial that you do not miss any classes
(b) You have to be prepared for each class
(c) If you miss a class due to an authorized excused absence as outlined in the University student rules (http://student-rules.tamu.edu/rule07), you should contact the instructor no later than the next class meeting following the missed class.

Since your attendance is needed for participation, each class missed without an authorized excused absence may lead to the deduction of up to 5% of the total score.

Course Grade: 90% of the final grade will be based on the writing and presentation quality. The course grade will be determined from the various components of the course:

In-class participation (presentations, discussions) (35%)
Homework assignments (written and oral) (40%)
Final assignment (25%)

Course grades may be scaled depending on special conditions of the course. In no case will the scale result in a lower letter grade than the standard 90-100% A, 80-89% B, 70-79% C, 60-69% D, and <60% F.

Your Responsibilities: Texas A&M University assumes that all students enroll in its programs with a serious learning purpose and expects them to be responsible individuals who demand of themselves high standards of honesty and personal conduct. All students are expected to behave at all times with respect and courtesy toward their fellow students and instructors and are to have the highest standards of honesty and integrity in their academic performance. Any behavior which disrupts the classroom learning
environment or any attempt to present work that the student has not actually prepared as their own work, or to pass an examination by improper means, is regarded as a serious offense. The minimum penalty for such an offense is a failing grade for this course. Aiding and abetting the above behavior is also considered a serious offense resulting in equally severe penalties.

**ADA Policy:** The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 979-845-1637. For additional information visit http://disability.tamu.edu.

**Academic Integrity:** The Aggie Honor Code states, “An Aggie does not lie, cheat, or steal or tolerate those who do.” Further information regarding the Honor Council Rules and Procedures may be found on the web at http://www.tamu.edu/aggiehonor.

**Main topics and assignments (tentative schedule)**

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<tr>
<th>Week</th>
<th>Topic</th>
<th>Assignments</th>
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<tbody>
<tr>
<td>1</td>
<td>You can communicate to scientists, now what?</td>
<td>Writing a proposal/statement of research interests&lt;br&gt;Prepare a 1-3 minute presentation targeting a non-physicist</td>
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<td></td>
<td>Introduction into how to communicate science to non-scientists. Purposes, goals, situations.</td>
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<td>2</td>
<td>Addressing general audience. Correspondence</td>
<td>Writing about physics research for a non-physicist/non-scientist (~1000 words)</td>
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<td>How to communicate with a potential employer Job or grad school application as a form of scientific communication to non-scientists.</td>
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<td>3</td>
<td>Statement of research interests and research proposal – are they the same?</td>
<td>Peer review of the written assignment (using Turnitin2). Revision</td>
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<td>4</td>
<td>Practice presentations in class.</td>
<td>Writing a summary for non-scientists. (~500 words)</td>
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<td>5</td>
<td>In class presentations (final)</td>
<td>Final Assignment: writing a proposal/statement of research interests (~500 words)</td>
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