What is Scientific and Technical Communication?

Scientific and technical communication involves preparing and publishing specialized information for both general and professional audiences. Through writing, speech, and other media, technical communicators research and report on technical procedures, propose ideas to gain funding for projects, market products or services, instruct people in how to use technical devices, and correspond with clients, customers, and colleagues around the world. According to the U.S. Department of Labor’s 2010-2011 Occupational Outlook Handbook, scientific and technical communicators:

- “put technical information into easily understandable language”;
- “are expected to demonstrate their understanding of the subject matter and establish their credibility with their colleagues”;
- “commonly work in engineering, scientific, healthcare, and other areas in which highly specialized material needs to be explained to a diverse audience, often of laypersons”;
- “must have excellent writing and communication skills and be able to express ideas clearly and logically in a variety of media”;
- “must be detail oriented, curious, persistent in solving problems, self-motivated, and able to understand complex material and explain it clearly”;
- “must demonstrate good working relationships and sensitivity toward others, especially those from different backgrounds”;
- “oversee the preparation of illustrations, photographs, diagrams, and charts . . . using a variety of multimedia formats to convey information in such a way that complex concepts can be understood easily by users of the information”;
- “serve as part of a team conducting usability studies to help improve the design of a product that is in the prototype stage.”

This course will be organized around the development, practice, and refinement of these skills. The handbook we will be using is Kristen Woolever’s Writing for the Technical Professions (4th Ed), copies of which are currently available in the MTU bookstore. Although many assignments will be based on applications detailed in this text, it will be used primarily for reference. It is not a text you read so much as you refer to.
Professional Prospects after Taking this Course

While effective technical and scientific communication skills are regularly listed on job descriptions for engineers, scientists, computer specialists, software developers, business managers, and a wide variety of professionals in the public and private sectors, technical communication is itself a productive and expanding profession. Income analyses by the Bureau of Labor Statistics show that the median annual wage in recent years for salaried technical and scientific communicators was $61,620. The middle 50 percent earned between $47,100 and $78,910. The lowest 10 percent earned less than $36,500, and the highest 10 percent earned more than $97,460. Median annual wages in the industries employing the largest number of technical writers were:

<table>
<thead>
<tr>
<th>Industry</th>
<th>Median Annual Wage</th>
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<tbody>
<tr>
<td>Software publishers</td>
<td>$71,640</td>
</tr>
<tr>
<td>Computer systems design and related services</td>
<td>64,380</td>
</tr>
<tr>
<td>Management, scientific, and technical consulting services</td>
<td>62,920</td>
</tr>
<tr>
<td>Employment services</td>
<td>61,810</td>
</tr>
<tr>
<td>Architectural, engineering, and related services</td>
<td>60,140</td>
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The Bureau also reports that job prospects are anticipated to be good for those with solid writing and communications skills and a technical background. Employment of technical writers, in fact, is expected to grow faster than the average for all occupations as the need to explain a growing number of electronic and scientific products increases. Employment of technical writers is expected to grow 18 percent, or faster than the average for all occupations, through 2018.

Using the Humanities Digital Media Zone (HDMZ)

The $55 lab fee you paid to take this course gets you 24/7 swipe-card access to the HDMZ, a computing and media production facility on the first floor of the Walker Arts and Humanities Building. Equipment includes both PCs (Windows) and Macs (Apple OSX) loaded with the latest versions of both industry-standard design and production software (Adobe CS3 suite, MS Office 2007 Suite, Apple’s iLife, iWork, and Quicktime) and open-source programs (Audacity, VLC, GIMP, etc.). For a current list broken down by PC and Mac, see the HDMZ’s complete software inventory. The lab also offers flatbed and slide-scanners, CD and DVD burners, digital cameras and digital video cameras, digital sound recorders, and black-and-white and color laser printers. Virtually all of the projects you complete for this course can be produced here. Because there are no limits on the number of copies you can print, we ask that you conserve paper by printing double-sided documents. Should you run into any problems using the zone’s equipment, a consultant is on duty in the PC side of the lab during work hours. After hours, send an email to huhelp@mtu.edu.
Course Structure and Protocol

Collegiality: Throughout the duration of this course, you must conduct yourself in a manner becoming of a professional. You should consider your instructor and your peers as colleagues to whom you are cordial and respectful at all times. Please do not sleep in class, whisper to or chat with classmates, or yawn loudly while your instructor or peers are talking. Rude, immature behavior is prohibited. If you are unhappy with the instructor or others in class, please don’t convey your displeasure publicly; instead, share your feelings with the instructor after class. In addition, cell phones, Blackberries, iPods, PDAs, and other electronic devices are not to be used in the classroom and should be turned off before each session. Laptop computers are allowed for course-related work only.

Work Ethic: Your work in this class should mirror the work you do in a professional environment. Every document you produce must exhibit conscientiousness. That’s a key word for success in this class and in the professional world this class is preparing you for. A conscientious individual carefully reads and responds to directions, invests time and effort in the project at hand, and prudently edits all documents for correctness and rhetorical appeal. Not meeting deadlines, a careless attitude, and shoddy work will have consequences.

Deadlines and Submission Standards: Please meet all deadlines and submit hard copies of your graded assignments. Submissions by email are not possible. Late work will result in a lower grade.

Attendance: Please attend class regularly and on time. You are allowed three absences per semester. For each unexcused absence beyond that, your final grade will be lowered by 2 points. If you have five absences, say, and a final grade of 83 (B), that number will be reduced by 4 points to an 79 (C). Coming to class late regularly will also result in a reduction of your final grade.

Blackboard Site and Listserv: Assignments, schedules, and course information will be posted on Blackboard. I will also periodically send out announcements and reminders using a course listserv. I know you get a lot of these and your tendency may be not to read most of them, but please do read the ones for this class. Thanks.

Collaborative Teams: On key projects this semester you will be working in teams of three to four of your colleagues. Your team will be assigned a task and you will divide up the work so that each individual contributes responsibly to the project’s outcome. The grade the project receives will be determined in two ways: (1) the extent to which it satisfies the criteria of the task, as determined by me using assessment rubrics; and (2) each individual’s anonymous evaluation of him/herself and of the other members of their team. The grade for the project will be lowered for those who do not contribute meaningfully to the project at hand.

Academic Integrity: Plagiarism and cheating are serious academic offenses. They are defined by MTU’s policy as “knowingly copying another’s work or ideas and calling them one’s own or not giving proper credit or citations.” Plagiarism includes copying sections or entire papers from printed or electronic sources as well as handing in papers written by students for other classes or purchased online or from unsavory campus characters. In this class you are to avoid plagiarism at all costs.
Grades

Your final letter grade will be based on a 100 point scale. Here are the numerical categories of each letter grade: A (100-93), AB (92-88), B (87-83), BC (82-78), C (77-73), CD (72-68), D (67-63), F (62-0).

C-Track Option

Students for whom this course is a low priority and who basically just want the three credits for graduation should consider taking the C-Track option. The C-Track excuses you from collaborative assignments and from attending most classes. In exchange for meeting the basic requirements of the course by completing the major assignments, you will receive no higher than a final grade of “C.” Your work must be, of course, your own and of satisfactory quality. If it is not, you can get a CD,D, or fail the course. The C-Track requires that you sign a contract agreeing to stipulations which ensure that you complete your coursework in a timely and acceptable manner.

Assignments

This section is forthcoming.

Your Graduate Teaching Instructor

Kevin Cassell (BA, University of Maine, 1986. MA, Northeastern University, 1989)

- 311 Walker.
- Hours: Tuesday, 12:30 – 1:30 (I prefer to meet in Wads’ “Campus Café.”)
- Contact: krcassel@mtu.edu

University Policies

Academic regulations and procedures are governed by University policy. Academic dishonesty cases will be handled in accordance the University's policies. If you have a disability that could affect your performance in this class or that requires an accommodation under the Americans with Disabilities Act, please see me as soon as possible so that we can make appropriate arrangements. The Affirmative Action Office has asked that you be made aware that Michigan Tech complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act of 1990. If you have a disability and need a reasonable accommodation for equal access to education or services at Michigan Tech, please call the Dean of Students Office, at 487-2212. For other concerns about discrimination, you may contact your advisor, department head or the Affirmative Action Office, at 487-3310. More information:

- Academic Integrity: http://www.studentaffairs.mtu.edu/dean/judicial/policies/academic_integrity.html
- Affirmative Action: http://www.admin.mtu.edu/aao/
- Disability Services: http://www.admin.mtu.edu/urel/studenthandbook/student_services.html