



Department of English

English 119 (003): Communications in Mathematics and Computer Science (Winter 2019)
Tuesdays and Thursdays, 10:00 – 11:20 in SJ1 2009

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Office hours: Tuesdays and Thursdays, 1:15 – 2:15 in Sweeney Hall 2207; I will frequently be in the office on Mondays and Wednesdays – e-mail me to confirm.

Course Description: Far from being “human calculators,” mathematics students often find themselves in situations requiring strong communication skills: for example, they need to explain their ideas to their peers and colleagues, they need to explain technical concepts to those who do not share their technical background, and they need to reassure managers about their projects’ progress. Many sources emphasize the need for communication in technical fields:

In one CAS survey, “the top non-quantitative skill was communication. Other key non-quantitative skills were project management, business knowledge, networking, leadership, and industry knowledge. . . . ‘You have to make a conscious effort at it,” said [XL Group senior vice president Kimberly] Holmes. “It didn’t matter how good I was at mathematics. If I couldn’t communicate my ideas, I couldn’t add any value to the business.”

Casualty Actuarial Society, “In Predictive Modeling, Actuaries Essential to the Future” 2015

“The four most common attributes that employers nominated were English language competency, effective communication skills, the ability to work as part of a team, and effective problem solving skills. . . . few graduates nominated English language competency or effective problem solving skills, suggesting a mismatch between graduate and employer perceptions of key attributes.”

Australian Education International, “International graduate outcomes and employer perceptions” 2010

“Other evidence suggests that more assets than STEM skills alone are required for productivity growth. First, there are many types of innovation, and not all of them depend on STEM skills. Complementary skills, such as communication, teamwork, and leadership, are also important in and of themselves, as well as to maximize the impact of STEM skills.”

Council of Canadian Academies, 2015. *Some Assembly Required: STEM Skills and Canada’s Economic Productivity*. Ottawa (ON): The Expert Panel on STEM Skills for the Future, Council of Canadian Academies.

“The fast-moving and unpredictable job market is likely to give a growing head-start to job-seekers who have paid less attention to skills tied to a specific occupation than to broad “competencies” applicable to a wide range of jobs and even an entire career. These attributes – also known as employability skills or soft skills – include critical thinking, problem-solving, communication skills, numeracy, teamwork and time management.”

Simon, Bernard *Skills development in Canada: so much noise, so little action*. Report for the Council of Chief Executives, 2013.

This course is designed to give you instruction and practice in the oral and written forms of communication that you as a Math and/or Computer Science student will need in the academic environment and in the workplace. Much of the work that you do this term will rely on your cooperation as a member of a team.

By the end of the term you will have gained confidence in your ability to complete a variety of projects that involve strong communication skills; you may also have samples of your best writing to show potential employers. In addition, you will acquire confidence in working as part of a team, practicing professional behavior, thinking critically, and making oral presentations.

Recommended Text: familiarize yourself with a reliable grammar and writing reference, such as [Purdue University's Online Writing Lab \(OWL\)](#).

Course Requirements and Assessment: Check the course schedule regularly so that you know what is expected each week.

Assessment	Due Date	Weighting
Participation and peer assessment	Throughout the term	15%
In-class and homework assignments	Throughout the term	25%
“Client meeting” video assignment	Feb 25	10%
Project proposal presentation	March 15	5%
White paper or research report	March 28 and April 9	20%
Team presentation	April 2/4	15%
Reflection assignment	April 9	10%
Total		100%

Assignment Descriptions: Additional guidelines for assignments will be provided.

1. Participation (10%) and peer assessment (5%). Students are expected to attend all lectures, complete all in-class written exercises and group work, participate in peer editing, and act professionally at all times (as you would in a workplace environment). Arriving late disrupts classroom activities; latecomers will therefore be penalized unless a valid excuse is provided in writing. Unexplained/unwarranted chronic lateness and absences will affect your grade – as will distracted/distracting in-class activities such as watching YouTube, texting, playing games, working on math assignments, and so on. Peer editing (March 15, March 28, and April 2/4) will be done in response to guiding questions; more details will be provided.

2. In-class and homework assignments (25%). In the Thursday classes of most weeks you will either be given an assignment to work on in class or an assignment to begin in class and finish at home. These assignments will usually involve assessing and revising texts, as well as providing a rationale for your revisions. Each assignment will be worth 5%, and I will choose your best five to count towards your grade for this assignment.

3. “Client meeting” video assignment (10%). Working with a partner, write a short script and act out the roles of a math specialist explaining (using non-technical language) a math concept to a non-specialist (client or other interested person). The video will be between 5 and 10 minutes in length and will make use of strategies such as narrative, analogy, and the use of props to help the client understand the concept. The student playing the role of the non-specialist will ask appropriate questions in seeking clarification. The “client” will be assumed to have *absolutely no* technical background. Brief documentation will also be submitted along with the video. More guidelines will be provided.

4. Team project proposal presentation (5%). The objective of the project is to propose, create, and demonstrate a mathematics-based study aid or promotional product. You must provide a rationale for your design *based on research* and suggest what will be unique about your product. Alternatively, teams may choose to propose a research report on some issue current in the field of mathematics or a related branch of mathematics (computer science, actuarial science, finance, etc.). On March 14th, teams will present their project proposals to the class (focusing on persuasion). Your team presentation will be no longer than 10 minutes, so you will need to carefully plan it. Teams of 5 members will be formed in week 6. More guidelines will be provided.

5. White paper or report (20%). I will provide some insights about the content and design of white papers and reports. White papers will be written to promote the project deliverable; alternatively, research reports will present the analysis of research on a particular current issue. Each member of the team will be expected to contribute an

equal amount of content and writing. On March 28, your first draft will be given to another team for assessment / feedback. After your draft is returned, you will have until April 9 to revise it and submit it (along with a prototype of your deliverable, if applicable) for a grade out of 15. The white paper or report must show evidence of persuasive content, effective design, and strong clarity of expression. A shared grade *or* individual grades will be awarded based on the team's preference.

6. Final team (formal) presentation (15%). In week 12, each team will have between 15-18 minutes to present (demonstrate) their deliverable to their stakeholders. 10% of this grade will be for students' performance in the presentation itself (delivery and professionalism, use of presentation visuals, and contributions to team cohesiveness). 5% will be for the presentation slides, which team members must send by e-mail attachment within 24 hours of the presentation.

7. Learning reflection assignment (10%). For this assignment you will write honestly about your work during the term, focusing on ideas that are relevant to your current learning needs and your career goals (as they relate to professional communication). You will be expected to provide examples from your work to validate your ideas. I encourage you to work on this assignment throughout the term, and show me your work in progress at any time during the term. I will provide more information and strategies in the form of guiding questions to help you to compose your learning reflections.

Professor's Policy on Late Assignments

Normally, project assignments that are submitted late without a valid excuse will be penalized 2% per weekday. Often students have legitimate reasons for requesting an extension; in such a case, you should take the opportunity to compose a formal and polite e-mail to me, outlining the reasons for the request and providing a rationale for a new due date. This e-mail should be sent at least 24 hours in advance of the due date.

Correspondence

Students using e-mail to contact me must include their first and last names, student number, and course section in which they are enrolled in the e-mail subject line. E-mails composed in English 119 must be formally and professionally written.

Electronic Device Policy

Devices (laptops, cellphones, smartphone, tablets, etc.) may only be used in ways that are conducive to learning in this course (for example, taking notes, examining documents on Learn, or looking for research articles). Be courteous in your use of devices; do not distract others in the class who may have different learning styles.

Important Information

Academic Integrity: To maintain a culture of academic integrity, members of the University of Waterloo and its Affiliated and Federated Institutions of Waterloo (AFIW) are expected to promote honesty, trust, fairness, respect, and responsibility. See the [UWaterloo Academic Integrity webpage and the Arts Academic Integrity webpage for more information.](#)

Discipline: A student is expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for their actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course professor, academic advisor, or the Associate

Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under the [St. Jerome's University Policy on Student Discipline](#). For information on categories of offenses and types of penalties, students should refer to [University of Waterloo Policy 71 - Student Discipline](#). For typical penalties check [Guidelines for the Assessment of Penalties](#).

Grievance: A student who believes that a decision affecting some aspect of their university life has been unfair or unreasonable may have grounds for initiating a grievance. Read the [St. Jerome's University Policy on Student Petitions and Grievances](#).

Appeals: A decision made or penalty imposed under the St. Jerome's University Policy on Student Petitions and Grievances (other than a petition) or the St. Jerome's University Policy on Student Discipline may be appealed if there is a ground. A student who believes they have a ground for an appeal should refer to the [St. Jerome's University Policy on Student Appeals](#).

Note for Students with Disabilities: The [AccessAbility Services](#) office, located on the first floor of the Needles Hall extension (1401), collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the AS office at the beginning of each academic term.

Course Outline / Class Schedule

Week 1	Jan. 8/10: course introduction, academic integrity, ways of thinking about professional communication, learning "reflection"
Week 2	Jan. 15/17: communicating to employers and colleagues
Week 3	Jan. 22/24: communicating procedures
Week 4	Jan. 29/31: clarity and elegance in writing
Week 5	Feb. 5/7: communicating technical ideas to non-specialists, start of video assignment
Week 6	Feb. 12/14: start of team project, team selection, working collaboratively and communicating ideas
Week 7	Feb. 26/28: creating effective proposals, working with research, communicating analysis
Week 8	March 5/7: presentation skills and creating effective presentation visuals
Week 9	March 12/14: team meeting/work session, proposal presentations (March 14), peer review of presentations
Week 10	March 19/21: reports and white papers
Week 11	March 26/28: lecture topic to be announced, team meeting, peer review of project work
Week 12	April 2/4: research presentations (both days), peer review of presentations, presentation slides due by e-mail attachment within 24 hours - April 9 is the due date for the team project report/white paper and the reflection assignment