NATURAL SCIENCES PROGRAM
COURSE OUTLINE

1. Course: Science 311 - Writing & Reviewing Scientific Reports **WINTER 2018**

Lecture Sections:	L01	Glenn Dolphin	TuTh	09:30-10:45	ES 920
	L02	Nicole Sandblom	TuTh	11:00-12:15	ES 920
	L03	Éowyn Campbell	TuTh	14:00-15:15	ES 920

Tutorials:	M	10:00, 11:00, 13:00, 15:00	SS 018 (ask at the main desk to locate your tutorial)
	W	09:00, 14:00	SS 018 (ask at the main desk to locate your tutorial)

Instructors:	Glenn Dolphin	ES 134	403-220-6025	glenn.dolphin@ucalgary.ca	Office Hours: TBA
	Éowyn Campbell	ES 530		eowyn.campbell@ucalgary.ca	Office Hours: TBA
	Nicole Sandblom	SA144J	403-210-9816	nicole.sandblom@ucalgary.ca	Office Hours: TBA

Course Site Name on Desire 2 Learn (D2L): SCIE 311 L01-L03 (Winter 2018) - Write & Review Scientific Reports

USC Specialized Programs Office EEEL 426 403-220-8600 sciemail@ucalgary.ca

2. Prerequisites: Completion of any 200-level course offered by the Faculty of Science.

3. Grading: The University policy on grading and related matters is described sections F.1 and F.2 of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Paper 1 Writing Assignments (total = 33%)	
Summary Assignment	4%
Paper 1 Developed Draft	3%
Paper 1 Electronic Peer Review	3%
Paper 1 Cover Letter	2%
Paper 1 in-class peer interview	1%
Paper 1 Final	20%
Paper 2 Writing Assignments (total = 43%)	
Paper 2 Plan Assignment	4%
Paper 2 Developed Draft	3%
Paper 2 Electronic Peer Review	3%
Paper 2 Cover Letter	2%
Paper 2 in-class peer interview	1%
Paper 2 Final	30%
Team-scored Writing Activities (total = 10%)	
Team Quizzes (tRATs)	5%
Class Activities	5%
Individual Writing Activities (total = 14%)	
Tutorial Activities	5%
Individual Quizzes (iRATs)	5%
Class Activities and Reflection	4%

Each piece of work submitted by a student will be assigned a percentage score. The student's grade is determined by marks for both individual work and team-scored components (i.e., team quizzes and in-class activities). A student's average percentage score for the various components listed above will be weighted as indicated above to calculate the overall percentage for the course, which will be used to determine the course letter grade. The following grading scheme identifies the maximum thresholds for letter grades that will be applied in this course: thresholds may be lowered to establish the final grade distribution.

Letter Grade	**A+**	**A**	**A-**	**B+**	**B**	**B-**	**C+**	**C**	**C-**	**D+**	**D**
Min. Percent Required	**96**	**90**	**86**	**82**	**78**	**74**	**70**	**66**	**62**	**56**	**50**

At the end of the term, each student will evaluate the contributions of the other members of his/her team. All team members will get a "peer score", which is the sum of the points that they are granted from each teammate. The instructor will also assess each student based on the quality of feedback that s/he provides to other students. These two values determine an individual's Peer Evaluation Score (PES). Each student's total *Team-scored Writing Activities* score will be multiplied by his/her PES to determine his/her final mark for the teamwork component of the course.

Communicating, both orally and in written form, is the cornerstone of this course, and the quality of the student's writing will factor into the evaluation of all assignments. See also: http://www.ucalgary.ca/pubs/calendar/current/e-2.html. Constructive critical analysis of peer work is also an essential course component. Attendance and active participation in all classes and tutorials is key to your success in this class. You are encouraged to meet with instructors periodically during the semester to discuss your progress. The detailed syllabus for Science 311 is available on Desire2Learn.

Students are required to have a University of Calgary email address in order to communicate with instructors and to access Desire2Learn. Many assignments will be submitted electronically. Further details about these requirements will be provided online and during the first class.

4. **Missed Components of Term Work:** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in Section 3.6. It is the student's responsibility to familiarize himself/herself with these regulations. See also Section E.3 of the University Calendar. Any student who is absent from classes or tutorials or fails to complete an assignment or similar set piece of work for legitimate reasons (illness, religious conviction or domestic affliction) must discuss an alternative course of action with the instructor. **Please note that the coordinator needs to be informed of any missed components within 48 hours.** Given the importance of the reviewing process, the deadlines of the papers for review are very strict. Valid reasons for missing these deadlines or quizzes are the same as those outlined in the 2016-2017 calendar under Deferral of Final Examinations (Section G.6).

5. **Course Materials:** The required handouts and readings for this course are available through postings on Desire2Learn. Students will be responsible to bring handouts to class and to keep current with the reading material posted on Desire2Learn.
Online Course Components: Some teamwork resources are provided by ITP Metrics, a system of secure web-based tools for forming teams and doing peer evaluations. These tools are free to all students and are not dependent on prior access.

6. **Examination Policy:** There will not be a final exam in this course.

7. **Human studies statement:** If you agree, your classwork may be used for research purposes. Your responses will remain anonymous and confidential. Grouped data (no individual responses) may be used in academic presentations and publications. Participation in such research is voluntary and will not influence grades in this course. Students' signed consent forms will be withheld from instructors until after final grades are submitted. More information will be provided at the time student participation is requested. See also Section E.5 of the Calendar.

8. **Supplemental Fees:** There are no supplemental fees associated with this course.

9. **OTHER IMPORTANT INFORMATION FOR STUDENTS:**

(a) **Academic Misconduct:** (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under Section K. Student Misconduct to inform yourself of definitions, processes and penalties. ***All work submitted for this class (whether as a draft or for final grading) is held to the strictest standards for intellectual honesty.*** *During the second tutorial session, you will complete a tutorial on understanding and avoiding plagiarism. You must successfully complete this tutorial before any other work will be graded.*

(b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on assembly points.

(c) **Student Accommodations:** Students needing an Accommodation because of a Disability or medical condition should contact Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities available at http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities_0.pdf. Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Program Director of the Natural Sciences Program, Dr. Wendy L. Benoit (wlbenoit@ucalgary.ca).

(d) **Safewalk:** Campus Security will escort individuals day or night (http://www.ucalgary.ca/security/safewalk/). Call **220-5333** for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

(e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also www.ucalgary.ca/secretariat/privacy.

(f) **Student Union Information:** VP Academic Phone: 403 220-3911 Email: suvpaca@ucalgary.ca
SU Faculty Rep. Phone: 403 220-3913 Email: science1@su.ucalgary.ca, science2@su.ucalgary.ca and science3@su.ucalgary.ca;
Student Ombuds Office: 403 220-6420 Email: ombuds@ucalgary.ca; http://ucalgary.ca/provost/students/ombuds

(g) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, ***your cell phone should be turned off*** unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy, you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

(h) **Universal Student Ratings of Instruction (USRI):** At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses (www.ucalgary.ca/usri). Your responses make a difference - please participate in USRI Surveys.

Program Approval:	Approved by Program Director (W. Benoit)	Date:	January 8, 2018
Associate Dean's Approval for alternate final exam arrangements:	Approved by Associate Dean (N. Chibry)	Date:	January 9, 2018

FACULTY OF SCIENCE — NATURAL SCIENCES PROGRAM
SCIENCE 311: WRITING & REVIEWING SCIENTIFIC REPORTS
COURSE SYLLABUS

I. Rationale:

Writing and Reviewing Scientific Reports is the writing course offered by Faculty of Science and the Natural Sciences Program. The overarching goal of this class is to help you develop writing strategies that will be useful throughout your degree and career in science.

II. Course Aims and Objectives:

Aims
During this course, you will prepare two major papers reviewing scientific topics. Milestone assignments will lead you through the topic selection process and through the important stages of reviewing and revising. By focusing on excellence in your written communication, you will develop essential skills for your academic and career development.

Specific Learning Objectives:
By the end of this course, students will develop a set of transferable skills by:

- Identifying essential formatting and style elements of scientific writing
- Searching for scientific information using a wide range of library skills
- Learning to properly document sources
- Reading scientific papers and identifying key conclusions
- Recognizing milestones in the writing process
- Developing a personal approach to any writing assignment
- Giving and receiving peer feedback throughout the writing process by working effectively as part of a team.

III. Responsibilities and Expectations

Science 311 is a writing course in the Faculty of Science. Writing papers is both challenging and informative.

As a student in Science 311, you will:

- Come prepared to participate actively in class activities and tutorials.
- Read all material on Desire2Learn.
- Complete all assignments to the best of your ability. Submit all assignments on time.
- Provide thoughtful, well-organized, and critical suggestions to your peers during the review process.
- Reflect on your TA and peer reviews and incorporate their suggestions into your papers. You will learn to critically and substantially revise your paper rather than simply making grammatical and superficial changes.

What can you expect from us?

Most of this syllabus is directed at giving you information about the structure of the course, grading and assignment information and what we (the instructors) expect from you. However, we also recognize that there are certain expectations that we need to meet in order for you to have a positive learning experience in this class.

Specifically, we will:

- Be respectful of all persons in the class and create an environment where all opinions and comments are heard and valued.
- Be available outside of class time to discuss course work or other course concerns (or just to chat).
- Encourage you to be well read
- Provide you with instructional material that will enable you to excel in this class.
- Develop activities that allow you to build your writing skills.
- Assess all assignments fairly and provide suggestions and comments for improvement.

We are excited about this class and look forward to helping you improve as a writer. ☺

IV. Format and Procedures:

Team-Based Learning: This class is likely very different in format from others you encounter. In this class, we will be using a Team-Based Learning (TBL) approach. In this process, you will spend many classes working in teams applying what you've learned from the assigned readings. Teams in TBL are different than the kind of group work you may have done in other classes: the instructor forms the teams (as described below) which work together throughout the term to complete course assignments and quizzes; team members also evaluate each other's contributions to the group throughout the term. Before your team tackles an assignment, TBL uses short tests to make sure you've got the basics from the required readings. They're not ordinary tests, though: you take the tests both individually and as a team, and you get immediate feedback, so the tests function as learning tools. Some classes will involve lecturing but most of our class time will be spent on applying what we've learned either in your team or individually by working on your own writing-in-progress before you submit assignments. Here are the basics:

1. We'll form teams during the first class meeting. It's an instructor's job to make the teams as diverse as possible, so you will be divided in teams of about 6 students based on previous courses, your major/year, work experience, and other factors that will help us form successful teams.
2. For each major unit in the course, you will be assigned some readings; we prepared Reading Guides for all assigned readings to help you focus on the most important points. At the beginning of the unit, you will take an individual quiz (~10-15 multiple-choice questions) called an "Individual Readiness Assessment Test" (iRAT) to see how well you've understood the concepts in the assigned reading. Quizzes missed without a valid excuse (medical or family emergency) will be awarded a mark of zero. Missed quizzes may not be written at a later time.
3. Right after taking the iRAT, you will take the same test with your team. This is called a "Team Readiness Assessment Test" (tRAT). For the group test, you'll use a special "scratch-off" answer sheet that immediately tells you whether you have the correct answer for full marks. If your team doesn't choose the correct answer on the first try, you make a second choice for partial credit. If it takes you three tries to get the correct answer, you again earn partial credit for the item. As for the iRATs, quizzes missed without a valid excuse will be awarded a mark of zero; missed quizzes may not be written at a later time.
4. When you've finished the tRAT, your team will have the opportunity to provide written feedback as to which concepts are still unclear or for which you would like more information.
5. Your instructor will use the individual and team scores as well as the written feedback to determine what material needs to be discussed and clarified in the subsequent class meetings. We'll also incorporate any supplemental information that you'll need to complete the Team Writing Activities in-class that involve application of what you learned in the readings. We will grade these assignments and provide feedback.

V. Course Requirements:

1. Class Attendance & Scheduled Tutorial Attendance: Please arrive at class and your tutorial on time. Late arrivals and early departures can be disruptive and can result in you missing important information. We understand that there are special circumstances when you may have to arrive late or leave early; please make your arrival/departure as unobtrusive as possible and be sure to let your teammates know about your situation in advance of class. It is important that you attend all scheduled Science 311 classes and tutorials. If you have to miss class, email the Course Coordinator ahead of time to find out if alternative arrangements are possible. If you are ill, email or phone the Course Coordinator as soon as possible and make-up arrangements might be able to be planned. If your email concerns a tutorial session, you should cc to your TA so that s/he knows your situation.

2. In-class Writing Submissions - Late or Missing: If you miss class or tutorial, you will not be able to participate completely in any of the writing activities completed in that class or tutorial. It is important that you contact the Course Coordinator (see **1.** above). Some writing submissions will be due via email or as homework submitted at the beginning of class and depending on your circumstances, you may be able to hand these specific assignments in later. Deductions will be made for late or missing submissions without documentation of illness, etc, as discussed below. You will sometimes need to bring your writing for team members to read (see **3.** below).

3. Electronic Writing Submissions - Late or Missing

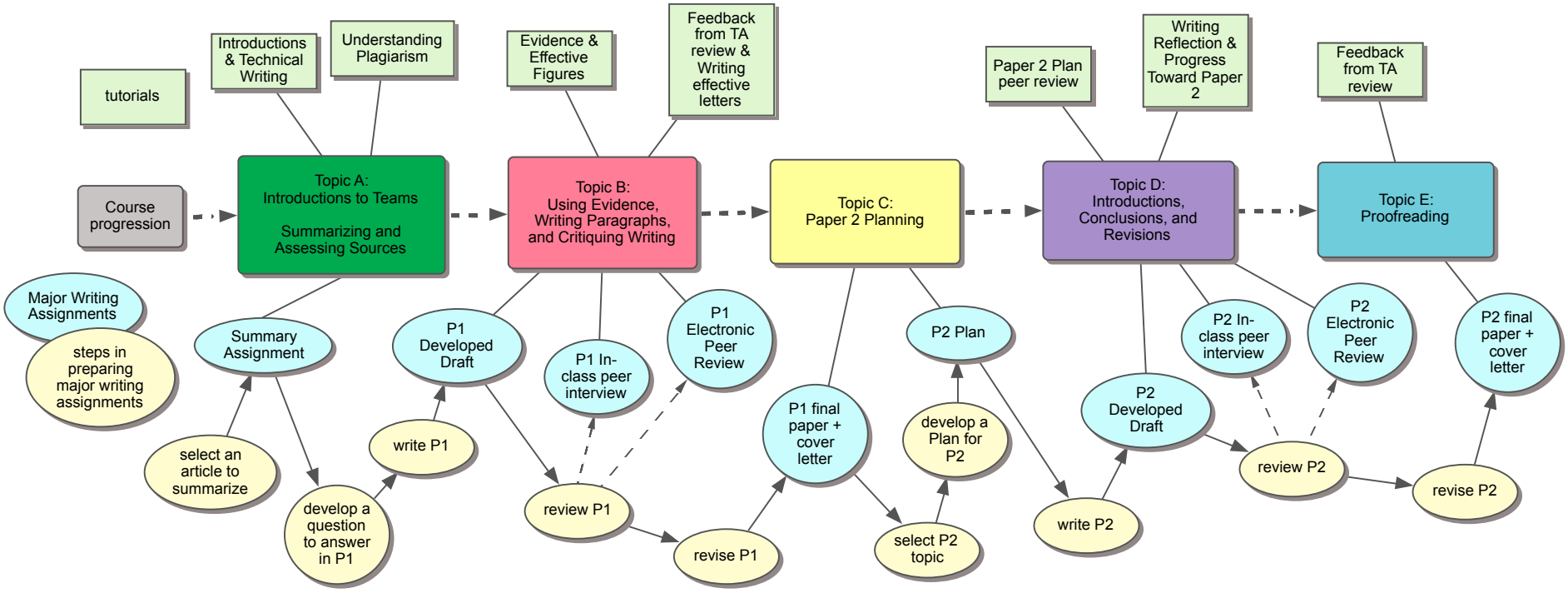
A. Peer Reviewing Expectations: Peer review is an important component of this class and research shows that student writing improves when at least one peer review step is included before the submission of a final paper. In order for the peer review process to be successful, your work must be completed on time (and sometimes brought to class). Depending on the type of peer review (in-class or electronic), you will not be able to participate if you do not bring a copy of your work to class or if your complete paper is not submitted on time. Therefore, if your paper is late/not brought to class, you will not be able to participate in the review process and will forfeit the grades associated with this assignment. Note that a late or incomplete draft version of your paper could jeopardize several scores: developed draft, electronic peer review, peer interview, and cover letter (totaling at least 9%). Note that a *missing* draft version of your paper could jeopardize several scores (totaling at least 29% for Paper 1 and 39% for Paper 2), because you must submit your Developed Draft Paper for review before your Final Paper will be marked.

Valid reasons for missing a deadline are the same criteria as those for deferred finals: documented cases of serious family afflictions or illness (a medical note is required). In these cases only you will not be penalized **provided that you contact the Course Coordinator within 48 hours** and your overall mark for the course will be prorated to account for this excused deadline. We will make every attempt to get a TA or instructor to review your paper before the final paper is due.

B. Late assignments will be subject to point **deductions of 15% of the total possible for each day (up to 24 hours)** dependent on the time the submission is received. It is best to notify the Course Coordinator before 9am on the deadline date if your work will be submitted late.

4. Re-grading of Assignments If you are concerned about the comments on your assignment or have questions about the grade you have earned, you should email the instructor or TA (depending on who marked the assignment). If you think the mark earned is not appropriate, you should write an email letter to the Course Coordinator to present your argument. You must submit this information to the Course Coordinator within 15 days of the date your mark on this assignment was made available to you. Please note: The assignment may be re-graded by another individual. The mark may go up, it may go down, or it may stay the same. In our experience with Science 311, the mark typically stays the same.

Course Overview Map: a graphic representation of SCIE 311 course components



SCIENCE 311 GUIDELINES FOR TEAM CONTRACT

To prepare you for the teamwork in professional school and/or the workforce, you will be assigned a team for the semester. Your team will work together to complete the collaborative projects in Science 311 this semester.

Rationale

As you learned from the assigned reading in "Successful Strategies for Teams" by Kennedy and Nilson, there are four stages of team development. Writing a team contract can help a team reach the final or performing stage, at which point teams are highly effective. The process of generating a team contract can actually help jump-start a group's collaborative efforts by immediately focusing the team members on a definite task. The team members must communicate and negotiate in order to identify the quality of work they all wish to achieve, and the level of group participation and individual accountability they all feel comfortable with. A well-formulated team contract helps a team avoid problems that lead to a dysfunctional team and poor quality work.

Team Contract Assignment

There are two major sections to a team contract:

1. identifying expectations
2. specifying the consequences for failing to fulfill these expectations

Since the basic purpose of this team contract is to accelerate your team's development, to increase individual accountability for team tasks, and to reduce the possibility for team conflict, make your contract **as specific as possible**; the more specific that you can be about your team expectations and procedures, the greater chance you have for a successful team experience.

Read the draft Team Contract on the next page and think about what other ground rules you think are necessary, and how you think your group should deal with failure to follow these ground rules. Add these ideas to the draft, and print a copy to bring to class on Thursday, January 11. In that class and again on January 23, your team will discuss the contract; once you have all agreed on the contract for your team, place a hard copy signed by all team members in your team folder by January 25 for approval by your instructor.

What if you find that despite the team contract that your team is not working as well as you had hoped? This is normal but needs to be attended to immediately. Perhaps your team is simply not following the established contract procedures or roles as strictly as you should be, or perhaps you need to change some of the procedures or roles as outlined in your contract. Immediately discuss and resolve the challenges your team is facing; do not delay, as the problems will not go away by themselves. Don't forget that you can ask your instructor to help your group resolve the conflict so that you will have the most positive team experience possible.

Modified with permission from BIOL435 Course Materials

SCIENCE 311 TEAM CONTRACT

Team # _____

Team Members:

1) _____ 4) _____

2) _____ 5) _____

3) _____ 6) _____

The ground rules for our team are:

- Come to all classes and on time
- Come prepared and ready to participate in the team
- Listen actively to what others have to contribute
- Be supportive of the efforts and initiatives of others

We agree that the consequences for failing to follow the above ground rules are:

- If a team member is unable to attend a class, s/he will notify the team ahead of time.
- If someone on the team is not paying attention during a team RAT or assignment (e.g. not listening; texting or emailing), other team members will point this out and s/he will immediately give his/her full attention to the task.
- If someone on the team is being too critical or otherwise unsupportive, other team members will point this out and s/he will make efforts to watch my words and interactions.

If the infractions continue, our team will:

****

a) *All team members participated in formulating the standards, roles, and procedures as stated in this contract.*
b) *We understand that we are obligated to abide by these terms and conditions.*

1) _____date_____

2) _____date_____

3) _____date_____

4) _____date_____

5) _____date_____

6) _____date_____

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SCIENCE 311 PEER EVALUATION OF TEAMS: MARKING RUBRIC

We determine your score using the feedback provided *from* your teammates and by our evaluation of your written feedback *to* your teammates.

1. Quantitative assessment by teammates (online survey)
Each team member will rate you using parameters relating to teamwork. We calculate the average of these ratings and multiply by 0.6 to determine your score based on your teammates' evaluation.

2. Qualitative feedback provided to teammates (comments within the online survey)
Each team member will provide anonymous written feedback to all members of their team. Describe the **most valuable contribution** (MVC) each teammate makes & **one suggestion for improvement** (SFI) each person could do to be a more effective teammate. We will evaluate the quality of feedback that you provide using these guidelines:

- Do you describe specific behaviours? (Do you avoid non-specific generalizations, e.g. "He isn't helpful")

- Do you describe those behaviours clearly? (Can the person being evaluated recognize specifically what she's done to help your team? Can he recognize what he can adjust or change to improve his teamwork performance?)

- Is your content and tone constructive and helpful? (Do you avoid petty, mean or antagonistic comments?)

- Do you provide descriptive feedback? (e.g., "I feel that our team would benefit if you gave us your opinion earlier in the discussion") Do you avoid judgmental feedback? (e.g. "You treated us unfairly by keeping quiet during discussion").

We evaluate the feedback you provide to your teammates using the criteria above:

3 points	very useful to recipient of feedback; feedback clearly describes specific behaviours in a constructive and helpful way without being judgmental
2 points	fairly useful
1 point	feedback provided, but not useful at all to recipient
No points	no feedback provided

We determine your qualitative feedback score out of 3 points using the above criteria and then multiply by 0.4 to determine your score based on our assessment of your feedback.

Your overall peer feedback score is the sum of the two values above (0.6 from quantitative assessment by teammates, 0.4 from qualitative feedback assessment), multiplied by 100.

Note: the mid-semester peer evaluation will not count for towards your peer evaluation score but completion of the survey is part of your individual writing activities mark). We hope that the mid-semester evaluation will let you practice peer evaluation and also give you feedback about your contributions to your team while there is still an opportunity to improve teamwork.

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